The Oulipo and Modernism: Literature, Craft and Mathematical Form

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Literature, Craft and Mathematical Form

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Abstract

The Oulipo is known primarily for the use of formal constraints in writing. The constraint is an arbitrary application of rigorously defined formal demands (often drawn from mathematics) in the process of literary or poetic composition. The group was founded in 1960, and their remit was limited to the formulation of constraints rather than literary texts. There is thus no literary theory proposed by the Oulipo, and little in the way of *critical* interpretation of their methods in terms of its wider significance to the condition of art in the period of their emergence. Their approach is often counterposed to the Surrealists: where the Surrealist response to the conditions of rationalised modernity attempted to explore the unconscious, the non-rational and chance, the Oulipo's use of constraints is consciously determined and resists the passivity of chance. The counter-model to the Surrealists for the Oulipo is the mathematical collective Nicolas Bourbaki. Bourbaki's rigorously abstract axiomatic mathematics provides the formal prototype of the most abstracted rationality for the Oulipo to use as compositional structures. The Oulipo also bear an ambivalent relation to structuralism, but where structuralism tends towards a descriptive identification of 'deep structures' of signification, the Oulipo instead deploy structures as historically-specific compositional material.

This thesis proposes to read the practice of the Oulipo as a production of the 'new' through a form of construction as 'craft' that is itself receptive to critical interpretation. It contends that the Oulipo can be seen to offer a distinctive trajectory among the various responses to what Adorno identifies as a crisis of art's autonomy in the latter half of the twentieth century; in other words, that they pursue an alternative modernism. I argue that the Oulipo's use of arbitrary rigidified logical structures in literary composition is categorially alien to the latter's concept, and thus that it forms a kind of resistant material which must be worked with. This model of skilled engagement recalls, in self-consciously paradoxical ways, the outmoded concept of craft which provides an alternative to, on the one hand, the post-romantic idea of artistic freedom, and on the other, full subsumption by technological procedure, maintaining a refracted instrumentality in the logic of method that yet resists pre-determination.

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Acknowledgements

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I declare that all the material contained in this thesis is my own work.

Introduction

In 1962, Raymond Queneau took part in a series of interviews with Georges Charbonnier. Among other things, he discusses in these sessions the work of the Oulipo, the group he had founded two years earlier with the scientist François Le Lionnais, dedicated to producing, as Queneau describes, 'règles, lois, possibilités, formes, structures, etc., tout un arsenal dans lequel le poète ira choisir à partir du moment où il aura envie de sortir de ce qu'on appelle l'inspiration.'[1] ['*Rules, laws, possibilities, forms, structures, etc., an arsenal from which the poet will choose, the moment he wants to get away from what is called inspiration.*'] At the end of the final interview, Queneau is pushed by Charbonnier to elaborate on the *meaning* of such 'constraints'. Queneau responds:

> R. Q.—L'intention de l'Oulipo, c'est de proposer des structures nouvelles. C'est tout. Maintenant, vous pouvez penser, vous, que cela amènera autre chose. Le sens même de l'Oulipo, c'est de donner des structures vides, de proposer des structures vides.
>
> G. C.—Alors, je pose le question: est-ce possible?

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[1] Raymond Queneau, *Entretiens avec Georges Charbonnier* (Paris: Gallimard, 1962), pp.154.

R. Q.—Probablement.[2]

[*R. Q.—The intention of the Oulipo is to propose new structures. That's all. Now, you may think that will bring about something else. The very meaning of the Oulipo is to give empty structures, to propose empty structures.*

G. C.—So, I ask the question, is that possible?

R. Q.—Probably.]

Several important things can be drawn from this exchange regarding the nature of the Oulipo: first, that they aim to break with the post-romantic commonplace of 'inspiration'; second, that they mean to *innovate*, to propose new structures; third, that their methodology implies a kind of formality that bears no a priori immanent relation to literary sources or consequences (these are *empty* structures, deeply redolent of mathematical formalism, and of the scientific structuralism of the era); and, fourth, that such empty structures may not *necessarily* be possible. The last point is a typically Quenellian equivocation,[3] one that indicates a circumspection towards doctrine that is very characteristic of the Oulipo (most obviously in their relationship to structuralist theory, but also in their opposition to the stridency of Bretonian Surrealism). The group's theoretical circumspection is often cited as the main reason for their longevity, but it is also the reason why they have remained resistant to incorporation in the standard narratives of twentieth-century modernism, despite their responsiveness to the conditions of the time, and their distinctly modernist aspiration to pursue *the new*. The refusal

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[2]Ibid., pp.154–5.

[3]See also, for example, Queneau's claim in the first interview that 'quand j'énonce une assertion, je m'aperçois tout de suite que l'assertion contraire est à peu près aussi intéressante, à un point où cela devient presque superstitieux chez moi.' Ibid., p.12. ['*When I make an assertion, I immediately see that the contrary assertion is roughly as interesting, to a point where that becomes nearly superstitious for me.*']

to set out a doctrine is perhaps also what allows them to combine apparently opposed concepts in the practice of writing: constraint versus potential (or freedom); literature versus science (most specifically mathematics); tradition versus the new; and the end-work versus its process.

The Oulipo was founded in 1960, the idea of Queneau, an established writer and general secretary at *Gallimard*, and François Le Lionnais, a chemical engineer and mathematician. The other original members were Noël Arnaud, Jacques Bens, Claude Berge, Jacques Duchateau, Latis, Jean Lescure, Jean Queval and Albert-Marie Schmidt. Later famous members include Italo Calvino, Harry Mathews, Georges Perec and Jacques Roubaud. Marcel Duchamp was also inducted as a 'foreign correspondent' but was never a fully active member. The group still exists, and has met monthly since its founding.[4] In the first decade or so, their individual members produced and published a number of Oulipian works, but the group itself remained, voluntarily, in relative obscurity until the publication of their first group book, *La Littérature potentielle*,[5] in 1973, a collection of short exercises, descriptions of constraints and some theoretical pieces. Since 1974, they have published regular editions of their own *Bibliothèque Oulipienne* series, dedicated to exemplifying new constraints, and in more recent years they have held monthly '*jeudis*', at which they present their work publicly.

The use of *constraints* in writing is probably the most commonly given characterisation of the Oulipo's work, along with the paradigmatic example, Georges Perec's

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[4] The *comptes rendus* for the meetings from 1960–63 are published as Jacques Bens, ed., *Genèse de L'Oulipo 1960–1963* (Bordeaux: Le Castor Astral, 2005). Scans of the typed minutes from 1960–2010 can be found online at: *Fonds Oulipo . Dossiers mensuels de réunion (1960-2010)*, `https://gallica.bnf.fr/services/engine/search/sru?operation=searchRetrieve&version=1.2&query=%28dc.title%20all%20%22Fonds%20Oulipo%22%29` (accessed August 24, 2019).

[5] Oulipo, *La littérature potentielle* (Paris: Gallimard, folio essais, 1973).

lipogrammatic text *La Disparition* (*A Void*). Constraint is typically thought of as a formally imposed restriction of the available materials or conditions of literary production, most obviously at the level of linguistic structures—in *La Disparition*, the prohibition of the letter *E*—but the term is quite broad. Thus devices such as the lipogram, the palindrome and others demanding a reduced set of letters, or demands on those letters' organisation, may be seen as low level constraints; higher levels of constraint may operate at the level of the word, sentence, paragraph and so on. Furthermore, semantic or thematic constraints make narratological demands, such as the 'schedule of obligations' used by Perec in the composition of his *La vie mode d'emploi (Life a Users Manual)*[6] or the semantic squares used to structure the narrative(s) of Italo Calvino's *If on a winter's night a traveller*.[7] It is an approach to literary, or more broadly, artistic production that seems at odds with modern art's demand to be a realm of freedom in the face of the unfreedom of an administered society. From Expressionism to Surrealism and beyond, one response to this predicament for art in the twentieth century has been to seek resistance in the irrational. Oulipian procedure would, on the contrary, seem to impose an *excess* of the rational, a determination that would suggest a closure of possibilities. Yet this is done in the name of *potential*.

The Oulipo's concern with what they term *potential* literature is inscribed in their name: Ou–Li–Po—*Ouvroir de littérature potentielle*—workshop of potential literature. Potential, for the Oulipo, is distinct from the literary *work*. Queneau again:

> L'association du mot 'littérature' et du mot 'potentielle' … je crois que,
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> là, il ne faut pas comprendre 'potentielle' comme un attribut désignant

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[6] See p.95ff in this thesis.
[7] See p.184ff in this thesis.

une certaine espèce de 'littérature' … au fond il s'agit peut-être moins de littérature proprement dite que de fournir des formes au bon usage qu'on peut faire de la littérature.[8]

[*The association of the word 'literature' and the word 'potential' … I think that, there, one must not understand 'potential' as an attribute designating a certain type of 'literature' … fundamentally, it is perhaps less a matter of literature properly speaking, but the furnishing of forms that literature can make good use of.*]

Potential is, thus, the possibility for such work to come about, and the limitation of the Oulipo's remit to potential is thus to offer materials for the eventual production of literature or poetry—as Queneau continues, 'de structures nouvelles … qui, ensuite, pourrant être utilisées par les écrivains de la façon qui leur plaira.'[9] ['*New structures which can then be used by writers in whatever way they please.*'] What the work on potential does not prescribe is what these eventual works should be: there is no Oulipian theory of literature as such. This means that potential has something of the logic of instrumentality, but without its specifying its end or eventual actualisation in advance.

If there are questions raised by the combination of constraint and potential, any uneasiness is made more stark when the primary method of constraint is considered: that is, the imposition of mathematical form in literary composition. Mathematics is *the* language of modern science, which is to say that modern science is built on the assumption that its object is, if not mathematical in itself, at least functionally math-

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[8] Queneau, *Entretiens avec Georges Charbonnier*, pp.139–40.
[9] Ibid., p.140.

ematisable. That literature could be made the object of a science was of course not
an alien concept in 1960, particularly considering structuralist—and earlier Russian
formalist—moves to offer a scientific treatment of it. Writing in 1967, Queneau states
not only that literature can be subject to scientific treatment, but that it must in order
to maintain relevance in modernity: ' "science" has incorporated the social sciences.
Literature, if it survives, cannot ignore this fact.'[10] Yet clearly a lot depends on what
exactly is being subjected to scientific treatment: literature as an object, or literary
production as an activity. In structuralist discourse, an attempt is made to treat lit-
erature in terms drawn from a more general model of descriptive science. What is
perhaps more problematic for the status of literature as such is that any similar sci-
entific preparation should in some sense offer a *prescriptive* programme for litera-
ture: that is, a formula for how it could be produced. In the same article, Queneau
states that '[the Oulipo's] aim could be described as the foundation of a new kind of
rhetoric, a new rhetoric which, nowadays, could not possibly do without mathemat-
ics,'[11] but there remains a mismatch in the established conceptual constitution of these
domains—mathematics and literature—even if it is in the process of an upheaval. This
is made clearer where the axiomatic and deductive aspects of mathematics are brought
to the fore, as in Jacques Roubaud's description of constraints:

> Constraints are presented in explicit and systematic form and can be no-
> tated in the language of mathematical logic. Oulipian texts thus become
> the *literary consequences of these axioms*, according to the rules of deduc-
> tion (which for their part can of course be only partially formalised) that

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[10]Raymond Queneau, 'Science and Literature,' *Times Literary Supplement*, no. 3422 (September 28, 1967): p.864.

[11]Ibid., p.864.

transform them into an analogy of the series of theorems, corollaries, and scholia with which a mathematical text is constructed.[12]

It is thus perhaps unsurprising that Roubaud should also acknowledge that 'mathematics [is] arguably in fundamental opposition to poetry.'[13] The point is that for literature to be produced by something akin to a mathematical deduction would seem to shift it from the realm of a critically responsive practice, to one that it is entirely subordinated to the dominant logic of modern society.

Yet Oulipian practice is not ultimately about automatism, despite the introduction of certain kinds of mechanism. That is, there is not, in Oulipian work, a reaction against the artistic subject but rather a reconsideration of it. Reactions against the strict sovereignty of the 'creative' individual are found in numerous forms during the twentieth century. Schoenberg's shift from free atonality to the 12-tone technique (and to 'total serialism' in its wake) suggested an objectivisation of the compositional process—although, as Schoenberg insisted, it still demanded a *composer*. The use of aleatory methods in the work of John Cage, Fluxus and others attempted to displace the artistic subject and artistic ends grounded there (although even anti-art gestures here still appeal to a higher conceptual condition than mere empirical practice).[14] The *nouveau roman* aimed to release the text from established novelistic notions of character,

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[12]Jacques Roubaud, 'The Oulipo and Combinatorial Art,' in *Oulipo Compendium*, ed. Harry Mathews and Alastair Brotchie, trans. Harry Mathews (London: Atlas Press, 2005), pp.41–2. Compare also Jacques Jouet's formulation: 'the constraint is the problem; the text the solution. If you will, the constraint is the enunciation of an enigma, and the text is the answer.' Jacques Jouet, 'With (and Without) Constraints,' trans. R. Lapidus, *SubStance*, no. 96 (2001): p.4.

[13]Roubaud, 'The Oulipo and Combinatorial Art,' p.41.

[14]'By emphasising the composer's intellectual capacity rather than facility for rhythm, melody or harmony, Cage also raised the composer as thinker even higher above composers devoted to the craft of producing musical works.' Larry Shiner, *The Invention of Art: A Cultural History* (Chicago: The University of Chicago Press, 2001), p.293.

story or commitment, the values of significant, subjective or conventionally humanistic forms of writing and instead attempted a textual flatness or objectivity, closer to 'scientific' description.[15] Finally, structuralist or poststructuralist theorists of the period wrote of the dissolution of the writing subject, or its co-origination with the text itself, most famously in essays by Roland Barthes and Michel Foucault.[16]

With the Oulipo however, there is instead something of a heightening of the subjective element, inasmuch as it is the subject that *works*. Thus, any kind of subject-object opposition in the conditions of literary production that would have its objective pole dismissed in the name of 'inspiration' is brought back by Oulipian methods into a constitutive tension. In fact, there is an appeal to an older, artisanal model of work here, and thus an equivocation between modern and (the recollection of) certain pre-modern categories of artistic production. Mathematical logic—in its applications in science and technology, and above all the nascent digital technology of the early years of the Oulipo, and its pervasion of the human sciences and social administrative structures, would seem to constitute the most advanced productive developments of the time, and thus would offer the context to which a properly modernist art would need to be responsive. As Theodor Adorno states, 'only the most advanced art of any period has any chance against the decay wrought by time.'[17] Yet the Oulipian response to mathematics (and to mathematically-informed scientific structure more generally) is to model it

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[15] 'The visual or descriptive adjective, the word that contents itself with measuring, locating, limiting, defining, indicates a difficult but most likely direction for a new art of the novel.' Alain Robbe-Grillet, *For a New Novel: Essays on Fiction*, trans. Richard Howard (Evanston: Northwestern University Press, 1989), p.24.

[16] See Roland Barthes, 'The Death of the Author,' in *Image Music Text*, ed. and trans. Stephen Heath (London: Fontana Press, 1977) and Michel Foucault, 'What is an Author?' In *The Foucault Reader*, ed. Paul Rabinow, trans. Josué V. Harari (Harmondsworth: Penguin, 1986).

[17] Theodor W. Adorno, *Aesthetic Theory*, trans. Robert Hullot-Kentor (London: Bloomsbury, 2013), p.55.

as a resistant material in a process akin to what is now an effectively obsolete mode of production—and one that is thus also typically counterposed to art in its modern sense—that is, *craft*. This accords with the artisanal implications of the *Ouvroir*, or workshop, in their name.

The artisanal context—of the preparation of (formal) material to be worked—is then the limited domain of Oulipian practice, rather than end-works. This again provokes a point of ambivalence about what exactly is to be appraised critically: the method or the work? To consider the work and the method together always subordinates the method to the work (and the 'success' thereof) and disregards the *specific* focus of Oulipian procedure; it tends towards a theory of literature as such, which, as has been stated already, is neither the Oulipo's productive, nor my interpretative, intention. To consider the method in isolation, however, makes it *de facto* a work in itself—akin perhaps to the status of the 'idea' in conceptualism—but thereby also discards its distinguishing status as method as such. This is the quandary that faces a critical interpretation of the method-as-such of a group dedicated to potential literature.

This focus on method as such, on the question of *how* works are written, or how methods or materials for works are prepared, has dominated writing on the Oulipo, which is reasonable enough since it is the group's declared remit, and their most distinctive characteristic,[18] but it has not been much interpreted critically in modernist terms. As well as overviews of the history of the group, or descriptions of particular de-

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[18] An exception to this is Marc Lapprand's *Poétique de l'Oulipo*, in which he asserts that it is reasonable, by this stage (1998) to consider that there is such a thing as 'Oulipian literature' which is readable as such: 'c'est la lisibilité du texte oulipien qui sera invoquée.' Marc Lapprand, *Poétique de l'Oulipo* (Amsterdam: Faux Titre, 1998), p.16. ['*It is the readability of the Oulipian text which will be invoked.*'] Also, Hervé Le Tellier contends that there is particular mode of Oulipian reception given by what he calls an 'aesthetic of complicity': see Hervé Le Tellier, *Esthétique de L'Oulipo* (Bordeaux: Le Castor Astral, 2006).

vices, the tendency in such texts has been towards isolated technical or de-historicised questions. Jacques Bens notes that 'Queneau's theoretical texts are not numerous, and generally confine themselves to discreet and modest technical considerations'[19] and this assessment could well be applied to the Oulipo's theoretical writings as a whole.

In terms of texts, material in English has so far been relatively limited, although this situation may now be changing. *All That is Evident is Suspect*, a useful collection of recently translated Oulipian writings—both theory and works—has recently appeared, although in anglophone studies, the most useful single volume of writing by Oulipians themselves remains Warren Motte's 1986 *Oulipo Primer*.[20] More recently, issues of gender representation of the group have become more prominent, including questions about the possibility of an inherent gendering of the concept of constraint.[21] At the time of writing, the most recent English-language contribution to the literature on the Oulipo is Dennis Duncan's *The Oulipo and Modern Thought*, which offers useful contextualisation of the Oulipo's emergence in terms of the group's own awareness of structuralism, Surrealism and Wittgensteinian/Quinean linguistic philosophy. How-

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[19]Jacques Bens, 'Queneau Oulipian,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.67.

[20]Ian Monk and Daniel Levin Becker, eds., *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, trans. Ian Monk (San Francisco: McSweeney's, 2018). Warren Motte, ed., *Oulipo: A Primer of Potential Literature* (Champaign: Dalkey Archive Press, 1998). Both these collections draw material from Oulipo, *La littérature potentielle* and Oulipo, *Atlas de littérature potentielle* (Paris: Gallimard, folio essais, 1981), as well as the long-running *Bibliothèque oulipienne* series (which mainly presents work on new constraints). Other invaluable resources are Oulipo, *Oulipo Compendium*, 2nd ed., ed. Harry Mathews and Alastair Brotchie (London: Atlas Press, 2005) and Oulipo, *Oulipo Laboratory: Texts from the Bibliothèque Oulipienne*, trans. Harry Mathews and Iain White (London: Atlas Press, 1995). Another single volume collection of essays on the Oulipo in English is G. N. Forester and M. J. Nicholls, eds., *Verbivoracious Festschrift Volume Six: The Oulipo* (Singapore: Verbivoracious Press, 2017).

[21]See the two essays in Lauren Elkin and Scott Esposito, *The End of Oulipo? An Attempt to Exhaust a Movement* (Winchester: Zero Books, 2013), and the texts drawn from the 2005 'noulipo' conference in Christine Wertheim and Matias Viegener, eds., *The Noulipian Analects* (Los Angeles: Les Figues Press, 2007).

ever, the interpretation of the group as critically responsive to the social formations of modernity still remains unaddressed. In particular—and this is the concern that frames my thesis—there is no critical appraisal of Oulipian method as such in the specific context of modernist *art's* response to the social conditions of the latter half of the twentieth century, and the question of whether such a category is still sustainable in these conditions. This context is addressed in Adorno's art-theoretical works, particularly his *Aesthetic Theory*, and it is this theoretical framework, broadly speaking, that informs the analysis here. The broad issue at stake in this, therefore, is, how far Oulipian methodology can be read as a critical response to the increasing rationalisation and instrumentality of society in modernity, one that is reflective of these forms, but also offers something new, not by overt resistance to the rational but by its incorporation into 'art' or 'literature' in a way that is at once both parodic and respectful.

In my consideration of this response, as I have already indicated, the crossing of mathematics and literature in Oulipian practice is central, but this assertion does however require a caveat. This formulation is frequently stated by Oulipians themselves and is very apparent in some Oulipian approaches and works—take, for example, François Le Lionnais's *Boîte a idées*,[22] a list of dozens of proposed mathematical operations that they may investigate (set operations, geometrical relations, transformations and so on)—but it is not a universal designation of the nature of constraint, nor of Oulipian writing more generally. Other constraints have a strictly formal approach that is less apparently mathematical, such as the use of homophonic translation, used most famously by the Oulipian anticipatory plagiarist Raymond Roussel. And some constraints appear quite divergent from the kind of formalism that appears as a strict

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[22]François Le Lionnais, 'Boîte à idées,' in *La littérature potentielle* (Paris: Gallimard, folio essais, 1973).

abstraction of the direct material of writing – letters, words, sentences, narrative patterns, themes and so on. For example Jacques Roubaud's *Great Fire of London* project is subject to constraints about the time of day and his physical surroundings as he attempts to transcribe his memories, with each passage then debarred from revisions. (It should be noted that Roubaud, as perhaps the group's foremost mathematician, is also the author many intricately mathematically constrained works.) Consider also in this regard Jacques Jouet's *Metro poems*, whose constraint is that the poem must be written on the Paris Metro, each stanza corresponding to each metro line travelled, and each line of the poem composed between stops and then written while the train is stopped. (I offer this as a non-mathematical constraint, but it has in fact been formalised in graph theory by Pierre Rosenstiehl, as a prescriptive structure for a 'complete' metro poem, covering the entire Paris Metro network.[23])

Nonetheless, while the thesis of mathematical-literary combination may not directly describe all activities of the Oulipo, and thus should not be used as a single formalised schema for interpreting them, it does at the same time offer an indication of what is at stake in Oulipian production; that is, leaving aside any definitive account of the Oulipo's activities—of which, incidentally, the group are notoriously wary—it is nevertheless possible to identify something distinctive in the crossing of mathematics and literature, as an alternative strand of modernist literary development. There is, in the introduction of mathematics, both an engagement with—rather than resistance to—the rigidity of the rational forms that instrumentally condition modern society, but at the same time a diversion of them into something socially *useless*, effectively an

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[23]Pierre Rosenstiehl, 'Frieze of the Paris Metro,' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Ian Monk (San Francisco: McSweeney's, 2018).

ironic universality. In this sense, scientificity is respected in its form, but parodied in its use.

It is in this respect that the categories of Adorno's aesthetics become useful. Adorno's concern is with what drives, and what constitutes, art in modern capitalist society— how art both resists and yet whose resistance is demanded by that society—and thus what art can reveal critically about its conditions of possibility, its pursuit of the new, and whether it inevitably dissolves itself in that pursuit. The Oulipian project, I hope to show, is responsive to the same social predicament, yet indicates a different development out of the nominalistic fate of art that Adorno describes. That is, if art, by Adorno's reckoning, in its self-consciously constructed attempt to individuate itself in the pursuit of the new, loses its mediation by universals, and thereby dissolves its *meaning*, then Oulipian work offers a parallel structure of coherence, even while the dominance of its formal mechanism is resisted.

The particular value of drawing on Adorno here is his acute diagnosis of the condition of modern art in the second half of the twentieth century as a situation in which art's autonomy—its freedom in the face of the 'perennial unfreedom of the whole',[24] which is still, in however complicated a fashion, the territory in which art may claim its distinctiveness—is increasingly impinged upon not just by the dominance of the capitalist social formation and its incorporation of art's 'tradition', but by art's own, increasingly constructed, attempts to avoid the same. Adorno's outlook, however, tends towards pessimism: art's progressive self-dissolution by means of its attempts to sustain itself. The development of this thesis will require, in this sense, a broadening of the scope of possibility for an artistic project beyond the restricted thread of Adorno's

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[24] Adorno, *Aesthetic Theory*, p.1.

own account of modernism. Adorno sees a singular social context for art, and thus a singular trajectory of art in response to it. If Adorno's own reading of the course of modern art is, as others have argued, too totalising or one-dimensional,[25] if artistic material as the 'total social development' is too narrowly defined—that is, as Peter Bürger puts it, if Adorno 'can recognise only *one* material in a given epoch,'[26]—then I would like to pursue a way out of this which uses broadly Adornian concepts, but is not insistent on the same totalising account of modernity's social situation as that found in *Aesthetic Theory* or in his writings on the 'culture industry'. I thus propose to situate the Oulipo—by virtue of their distinctive engagement with rigidified rational forms, and their deployment of an outmoded productive model—in terms of what Peter Osborne describes as 'a "richer, more variegated" modernism, the course of which cannot be *pre*judged, but the state of which may none the less be judged historically according to the broad philosophical criteria of Adorno's aesthetics.'[27]

The opening line of Adorno's *Aesthetic Theory* states that 'it is self-evident that nothing concerning art is self-evident anymore.'[28] And it is the social and historical complexity of art, as a concept, or set of concepts, not so much substantive as constellatory, that allows us to address particular questions without these being subsumptively contained within an essentialist framework of what art 'is'. If art has taken on a certain 'synthesis' in modernity, this is part of its historical development, formed in relation to its changing social situation, rather than to any essential core: art identifies itself by

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[25]See, for example, Peter Osborne, 'Adorno and the Metaphysics of Modernism: The Problem of a "Postmodern" Art,' in *The Problems of Modernity: Adorno and Benjamin*, ed. Andrew Benjamin (London: Routledge, 1991) and David Cunningham, 'A Time for Dissonance and Noise,' *Angelaki* 8, no. 1 (2003): 61–74.

[26]Cited in Osborne, 'Adorno and the Metaphysics of Modernism,' p.44.

[27]Ibid., p.45.

[28]Adorno, *Aesthetic Theory*, p.1.

negation, that is, in terms of what it resists. As Adorno puts it: 'over and above their empty classificatory concept, we have only negatively unified the arts ... they all repel empirical reality.'[29]

In very general terms then, this thesis does not seek to address the productive questions of Oulipian practice in what follows as instances of a theoretical development that Adorno himself laid out (nor, for that matter, as counter-examples), but rather addresses the particularity of Oulipian questions in relation to a broadly Adornian critical apparatus, in such a way as, reflectively, to adapt that critical apparatus—particularly as it concerns the concept of 'modernism'—in light of the questions raised by the Oulipo as they develop. To put this another way, the conceptual problems that Adorno traces through the condition of modern art can usefully inform the way in which starting points for an Oulipian analysis are formulated. Thus, in particular, we might address the question of 'the new' and its relation to tradition, as it is explored in Adorno's writings, in the Oulipo's demand for structural novelty in productive methods in pursuit of 'potential'. The modernist directive for individuation that pushes towards what Adorno terms construction can similarly shed light on the Oulipian insistence on conscious technique and structures, the engagement of artistic or literary *material* in the widest sense (that is, including the social, thematic and conceptual as well as the physical), and the use of arbitrary or 'external' structures (particularly mathematical structures). At the same time, as I have already noted, these very formulations serve to offer a challenge to the unilinearity of Adorno's own analysis of artistic modernism and so productively to complicate it.

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[29] Adorno, *Gesammelte Schriften*, 10.1, p.448, cited and translated in Stewart Martin, 'Literature and the Modern System of the Arts: Sources of Criticism in Adorno,' in *Adorno and Literature*, ed. David Cunningham and Nigel Mapp (London: Continuum, 2006), p.21.

Critical engagement with artworks might be characterised (no doubt rather too simplistically) in terms of their production and reception. (Of course, certain forms, notably composed music, will additionally have a reproductive or performative aspect.) Of these different aspects, this thesis is primarily engaged with the first—that of production: that is, the sources, conditions, materials, subjective and objective elements and processes of construction. The question of Oulipian practice addresses the *making* of work rather than the work itself, or more precisely, they address the making of methods, structures and processes for use *in* the making of work. This is in line with the concept of 'potential' set out earlier and is attested to by many Oulipians in their own characterisation of the group's activities. For example, Harry Mathews states in an interview that 'what happens in the Oulipo is we invent or rediscover or analyse constrictive forms. The books happen outside, independently. . . . The Oulipo is not about written works. It's about procedures.'[30] Similarly Jacques Roubaud declares that '*as a group*, the Oulipo does not count the creation of literary works among its primary aims.'[31]

The focus on process rather than result raises the question of how Oulipian practice is to be critically interpreted: as a mode of production where the end is simply placed outside the scope of enquiry; or as a critical engagement of a process whose end is contained within a still wider process—productive activity for the sake of the greater productivity of literature as such, even if the literary ends remain undefined. In either case the question is raised of how this is to be addressed further by a *critical* appraisal, that is, what is the relation between this inner logic of compositional

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[30] Harry Mathews, *An Interview by Alexander Laurence*, 1989, `http://portable-infinite.blogspot.co.uk/2014/06/harry-mathews-interview.html` (accessed August 20, 2019).

[31] Roubaud, 'The Oulipo and Combinatorial Art,' p.39.

process and conditions that give rise to it? Adorno considers the artwork itself as the refracted objectivation of the forces and conditions of its production—social, industrial and technological conditions, the circumstances of existing artworks: material in the widest sense, also including the subjective element—which thereby takes on an individual quasi-subjectivity in itself. The work is not merely the vehicle for a subjective intention, not simply the actualisation of subjective spirit. This again relates it to what Adorno describes as its linguistic character in that language is not the pure expression of a speaking subject. In Adorno's own words: 'art's linguistic quality gives rise to reflection over what speaks in art; this is its veritable subject, not the individual who makes it or the one who receives it.'[32] In this sense, 'artworks are alive in that they speak in a fashion that is denied to natural objects and the subjects who make them.'[33] Thus, the artwork bears a relation to the social conditions of its production, one that is not simply one of thematic representation, but that is mimetically reflective of these conditions. The artwork's critical relation to its conditions is one that stems from a tension between its adoption of advanced forms of the contemporaneous technological society and its resistance to them. Adorno writes:

> The substantive element of artistic modernism draws its power from the fact that the most advanced procedures of material production and organisation are not limited to the sphere in which they originate. In a manner scarcely analysed yet by sociology, they radiate out into areas of life far removed from them, deep into the zones of subjective experience, which does not notice this and guards the sanctity of its reserves.[34]

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[32] Adorno, *Aesthetic Theory*, p.227.
[33] Ibid., p.5.
[34] Ibid., p.46.

In this sense, art is capable of a critical reflection of society in a way that unmediatedly discursive representation is not.

Considering the more specifically Oulipian question of process from such a perspective then, how can such a process, which is apparently instrumental if considered in terms of means-end rationality, but which rejects its 'end' as the focus of enquiry, reflect back upon the conditions that have given rise to it in the way that an artwork, understood in the more usual sense, can? It is at the level of a second order reflection on the 'radiating out' of the 'procedures of material production' that an answer to this question presents itself, at the same time as it engenders a paradox by displacing the primacy of that which renders it secondary. While reflection on the work produced in such circumstances would give rise to the critical appraisal of these conditions beyond the intended voice of the author as 'creator', the very deliberateness of constructive processes attempts to make rationally determinable such conditions of production. The completion of such an attempt would render the result uninteresting in the terms in which Adorno considers the artwork. However, inasmuch as this is an attempt rather than a result, a tendency that manifests itself with an apparent perversity of purpose, a tension is retained in the process that prompts a critical reflection of, and upon, instrumental reason itself. The terms of the enquiry into Oulipian methods pursued within this thesis thus take shape as a critical assessment of production, artistic or otherwise, and of its rationalisation.

The demand for this focus on production is not incidental. If there is a critical reception that is at stake in this analysis, it is not primarily the reception of 'works' but of the mode of their making. This is not an arbitrary theoretical conceit but a reflection demanded by the Oulipian process of written production. As already stated, it is

an explicit aim of the Oulipo that their object of enquiry is method itself, a distinction which is vital to the particularity of their practice (and which—importantly—distances them from structuralist analyses). But it is also important given a situation of rational, totalising theoretical-explanatory order: the expanding ambition of structuralism is the key symptom of this in the period after the second world war, and where what came to be called 'poststructuralist' developments worked through the inherent contradictions in that order, Oulipism takes a different approach, to step back and *use* the forms in defiance of their avowed *theoretical* determinability. That is, such practice demands a reflection on skill or technique at a subjective level and on their relation to conditioning and conditioned structures: rules, constraints and their social determinants in the objective sense. As I will try to show in what follows, this offers, by my reckoning, the most fruitful critical interpretation of Oulipian work, as opposed to a focus on the kind of gestures that may present themselves discursively in final works or be interpretatively drawn from these. For while the latter are not necessarily uninteresting, they are, ultimately, not so specifically Oulipian.

It is significant, in this regard, that the Oulipo choose to describe themselves as an *Ouvroir*, which is usually translated as 'workshop.' Although 'ouvroir' has a more particular set of social implications than are suggested by the English term—including a certain modesty and charitableness, though these implications are not without some mischievous implication—it is, like the English 'workshop', a designation more resonant of craft production than high aesthetic aspiration. This, at least, has been the case since the nineteenth century, broadly speaking, when these two concepts—art and craft—came to be definitionally opposed. Yet such concepts are of course, *historically*, not stable: their separation has taken place over the course of many centuries, and it is

only in the romantic or post-romantic era that the idea of a unified 'art' in the singular has opposed itself to the more instrumental 'craft'.[35] Thus the Oulipian 'workshop', while often working with decidedly modern materials in the form of mathematical analytic structures and computational processes (at least in principle)—processes that more generally align with the highly instrumentally rationalist social conditions of modernity—also implies resonances with older modes of artistic production that seem to roll back on the constitutive separation of artistic and instrumental logic after the eighteenth century.

Nonetheless, while Oulipian methods most obviously appear as a rebuff to the modern romantic conceit of the rationally unaccountable but sovereign creative genius (seen most clearly in their antipathy to the 'psychic automatism' of the Surrealists, as discussed in my first chapter), they were similarly wary of what, in terms of a subject-object binary, would appear to be its opposite, that of a pure mechanisation of writing, or 'mechanical automatism.' As Jean Queval states at an early meeting, 'la notion de hasard est délicate. Il ne faudrait pas substituer à l'automatisme psychique des surréalistes un automatisme mécanique où le hasard aurait autant de part.'[36] ['*The notion of chance is tricky. We should not substitute mechanical automatism for the psychic automatism of the Surrealists, where chance would play as much of a part.*'] What connects these two points of resistance is the notion of automatism—an involuntary aspect in the artwork, which links to a further point of negation for the Oulipo: their 'anti-chance' stance, which can be taken as a refusal of Surrealist *objective chance*, but also of the aleatory operations of more contemporary figures at the time when

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[35] The historicisation of the concepts here is covered in chapter 4.

[36] Bens, *Genèse de L'Oulipo*, p.146.

these principles were declared, such as John Cage.[37] What emerges here is the insistence on the deliberateness imposed on productive activity that is itself modelled on wider social instrumentalised productive activity, and yet is abstracted from the work in question's own purpose, or indeed any external purpose for the work—a literary *end*, say—beyond that of solving a mathematical 'problem'.

With this restriction to method, the *actualised* work towards which method might usually be directed (and by which it might be defined) is displaced as the objective centre of interest. It may be necessary as part of the determination of what is meant by producing to have, at least in principle, an artwork as 'product': without an object, the process of production either loses meaning *as* production, or becomes the object itself (which is a paradoxical situation towards which Oulipian work may be seen to tend). But, as we have seen, the concern of the Oulipo in itself and in its work is *process*. Abstracted from the socially-oppositional 'aesthetic' definition of the art object, method then becomes a technical challenge, and is constructed as such. Hence, the degree to which the Oulipo typically prize the difficulty of their constraints—indeed, one of the most persistent characterisations of the group as a whole is that of Raymond Queneau: '*OuLiPiens*: rats qui ont à construire le labyrinthe dont ils se proposent de sortir.'[38] ['*Oulipians: rats who construct the labyrinth from which they plan to escape.*']

It is this focus on the difficulty of producing something, and the skill required to do so, that recalls the concept of craft. Since the emergence of the modern system of the arts along with modern capitalism, craft has been, if not disdained, at least restricted to

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[37]Alison James also suggests that the Oulipo may also have had in mind as here certain experiments in probabilistic language generation carried out by Max Bense's Stuttgart school. Alison James, *Constraining Chance: Georges Perec and the Oulipo* (Evanston: Northwestern University Press, 2009), p.118.

[38]Bens, *Genèse de L'Oulipo*, p.49.

a definitive negation of the artwork as a form of productive activity subordinate to heteronomous purposes, as well as being an outmoded form of manufacture where the division of labour now rules in commodity production. Adorno points out that the loss of specificity of individual arts in the universal of 'art' since the eighteenth century is derived from its negation of usefulness, its autonomy. While craft, as Larry Shiner notes, has been re-assessed by or re-incorporated into 'fine art' by various artists or movements of the twentieth century, from the Arts and Crafts movement to the Bauhaus, it is still understood within the framework of their basic separation, and does not subvert the prevalent understanding of the aesthetic superiority of art as such.[39] It is of course not possible to reconstruct, as Adorno emphasised, a once-existing unified concept of, say, art as *technē*, that has since split apart. Nonetheless, there are interesting historical triggers for a re-assessment of the technicality or skill of artistic production that can be found in older concepts of craft, or of specific arts or productive activities that can now be seen through rather different lenses: from inspiration as problem-solving, to the workshops of the renaissance and before, and even back to antiquity where the Greek *technē* or Roman *ars* have meanings that are more aligned with technical skill than those denoted by the term 'art' in the modern sense.

It is common to think of craft primarily in terms of purposive skill with physical material—as in handicrafts or 'applied arts' such as textiles, ceramics, glassware and so on, where individual sensuous materials tend to be the defining characteristic of individual crafts—but to approach a modern re-thinking of craft, it is necessary not simply to pluck manual processes out of history, but to consider more reflectively what

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[39]See, for example, the observations by Shiner, that attempts to rehabilitate craft in the latter half of the twentieth century have not overturned the hierarchy that privileges art, merely subverting the empirically 'useful' aspect of craft production, with the aim of claiming the status of art. Shiner, *The Invention of Art*, p.277–8.

'artistic materials' may mean in the present moment. Adorno gives us just such a conception—defining 'materials' in a way that incorporates the sensuous material of construction: colours, tones and textures, but also linguistic forms, concepts, thematic elements and even the categories of rational thought: all are the socially formed contingencies. Adorno's category of material in this sense 'is not natural material even if it appears so to artists; rather, it is thoroughly historical.'[40] That is to say, even the idea of a material emancipated from historical contingency is still related negatively to the tradition it is thought to break with. It is thus, in line with its imperative to 'make it new', a constitutive demand for art in modernity that it draws on the most advanced materials. For Oulipian practice in particular, this wider concept of materials can be seen, most significantly, to draw in conceptual or methodological formations of an increasingly mathematised society—scientific dominance and the rise of information systems: the kind of quantitative analytical logic of modernity that would otherwise seem to lie 'outside' of art.

These conditions—and most particularly their crystallisation in the modern concept of science—are also those behind structuralism. In certain respects the latter is the Oulipo's nearest conceptual cousin, but there is also a clear distinction of orientation. Structuralism can be seen as the manifestation in the human sciences of a scientific tendency stretching back at least to Galileo's mathematisation of nature. This 'disenchantment' of nature, a common theme of critical engagement since early German Romanticism, leads to the displacement of theological certainties by something akin to a faith in rational certainties; that is, the insistence that the world itself is logically structured, and thus that the logic of science—and more fundamentally

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[40]Adorno, *Aesthetic Theory*, p.203.

the language of mathematics—is understood as a structure to be discovered. The visibility of this structure's historical contingency then slips further away. The Oulipian approach, rather than offering a direct critical confrontation with this logic, is a deployment of its excess, such that, inasmuch as it is then *used*, the absurdity of its total applicability may, I argue in what follows, become more apparent. These themes are developed in more detail in chapters 2 and 3.

The rational engagement with the conditions of artistic production recalls Adorno's thinking on construction, which is particularly pertinent given its role in the context of experimentation. For Adorno, 'productive artists are objectively compelled to experiment'[41] But for Adorno, this does not mean simply for the artist subjectively to try something different to see if it meets some establish criterion of success. Rather, this is the subjective response to the violence of objective change, and thus that the artistic subject, if true to their own conditions, can only be seen to experiment inasmuch as the results are unforeseen. Adorno writes: 'the concept of construction, which is fundamental to modern art, always implied the primacy of constructive methods over subjective imagination. Construction necessitates solutions that the imagining ear or eye does not immediately encompass or know in full detail.'[42] For Adorno, the new is not to be abstractly posited in itself; the sense of the new is always in dialectical relation with tradition. At certain points this even takes on a distinct similarity to the combinatorial analyses of structuralism, and indeed, the combinatorial methods of the Oulipo. So, for example, Adorno writes in *Aesthetic Theory*: 'the relation to the new is modelled on a child at the piano searching for a chord never previously heard. This chord, however, was always there: the possible combinations are limited and actually

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[41] Ibid., p.33.
[42] Ibid., p.33.

everything that can be played on it is implicitly given in the keyboard.'[43] It is not, however, a combinatorial analysis that is at stake in Adorno's thinking here, but the attempt to see in the new the subjective reaction to objective conditions, rather than simply a subjective *positing*. Where this touches on Oulipian practice is in the fact that, for the latter, the new is similarly a reaction to distinctly modern forms (and where it differs is that the Oulipo mediate this with distinctly outmoded forms). What is refused in both cases is the idea of any kind of unmediated fount of novelty, of the kind most often valorised by the avant-gardes.

Construction, Adorno states, is 'currently the only possible form that the rational element in the artwork can take.' It is 'the extension of subjective domination.'[44] Construction is the tendency of art's self-consciousness and what Adorno describes as its nominalistic (or individualistic) isolation—that is its progressive refusal of the universals that render it socially meaningful—and in its deliberation a drive towards an inner coherence that avoids the accidental. In Oulipian practice, and in their use of combinatorial mathematics, Oulipian innovation is similarly derived from a finite domain, the permutations of whose elements retain a logical coherence given by mathematical 'universality'. Mathematics, an apparently extra-artistic form, is brought in to the artistic material as an act of 'subjective domination'. Thus 'construction wants to make itself into something real sui generis, even though it borrows the very purity of its principles from external technical functional forms.'[45]

At the same time, the historical resonances of the Oulipo's 'workshop' and the sense of construction as *craft* production might be taken to represent a repudiation or

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[43]Ibid., p.44.
[44]Ibid., pp.77–8.
[45]Ibid., p.78.

just plain rejection of the privileged status of the autonomous artwork in modernity, such that the Oulipo risks being outmoded, from Adorno's perspective, in the face of the movement of art in capitalist modernity that is positioned as such by its demand to be progressive or innovative. If, as Adorno argues, art 'desperately negates the closed confines of the ever-same,' operating as the 'shock that lets nothing inherited go unchallenged,'[46] then there can be no comfortable return to traditional forms or methods: 'modern art cannot be an aberration susceptible to correction by returning to foundations that no longer do or should exist.'[47] The danger in the Oulipo might then be that the set of productive approaches that come under this artisanal designation is allied with an older conception of the practice of writing as something perfectible— perfectible because there are ideals of form that can be approached asymptotically: an ahistorical, perhaps even theological tendency. The Oulipo might be accused, in this sense, of insufficiently questioning a static idea of 'tradition', or worse yet, because of their disengagement from theoretical concerns regarding the work as such, their work might be seen as too amenable to adoption as an escape from, or consolation under, social modernity, a form of uselessness as a comfort rather than a challenge to technological-rational conditions. If, as I believe, a case can thus be made for their work being *critically* responsive to a culture of dominant rationality, a deeper mimetic relation to it must be uncovered to see whether, and in what ways, Oulipian practice can in fact operate as such a form of critique. It is that I attempt throughout what follows.

The development of the concept of the autonomous artwork during the course of the nineteenth century gave rise to the idea of art as entirely abstracted from wider so-

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[46]Ibid., p.32.
[47]Ibid., p.32.

cial means and ends. But this 'autonomy' itself only became a necessity for art under the conditions of emergent capitalist modernity. As Peter Bürger notes, 'the *autonomy of art* is a category of bourgeois society. It permits the description of art's detachment from the context of practical life as a historical development.' And yet, 'the category "autonomy" does not permit the understanding of its referent as one that developed historically. The relative dissociation of the work of art from the praxis of life in bourgeois society thus becomes transformed into the (erroneous) idea that the work of art is totally independent of society.'[48] The emergence of avant-garde movements in the early twentieth century was, according to Bürger, a negation of the ideological category of autonomy in this (erroneous) sense. The Dadaist presentation of the *objet trouvé* and later developments in Surrealism presented 'anti-art' as a protest against the institutionalisation of art, and the social ineffectuality of autonomous artworks. The Oulipo, and in particular Raymond Queneau, had historical links to the Surrealists, and the influence of the latter perhaps remains broadly visible in a certain perversity of spirit (though clearly less outrageously in the case of the Oulipo). Nonetheless, for reasons I will discuss further in chapter 1, they also determinedly declare their opposition to Surrealist theory, most directly in terms of psychic automatism and objective chance (and also more implicitly in their refusal to declare a political-theoretical stance). Crucially, Surrealist irrationality appears to be the antithesis of Oulipian construction. While, as Adorno points out, the Surrealists were 'an attack on violence, authority and obscurantism,' whose 'irrationality alienated,'[49] they also risked, on this account, uncritically elevating irrationality as a universal trans-historical principle rather than revealing the underlying irrationality of the (historical) social order as such. Thus the condition of

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[48] Peter Bürger, *Theory of the Avant-Garde*, trans. Michael Shaw (Minneapolis: University of Minnesota Press, 1984), p.46.

[49] Adorno, *Aesthetic Theory*, p.75.

montage (exemplary of avant-gardes), 'which reached its acme in surrealism,' is, for Adorno, 'powerless … insofar as it is unable to explode the individual elements'; it is to be criticised as 'a complaisant irrationalism, for adaptation to material that is delivered ready-made from outside the work.'[50] The Oulipo's counter to automatism and irrationalism, which has something in common with Adorno in this respect, is the subject of chapter 1.

Adorno's criticism of art's attempted use of irrationality is that it attempts the un-mediated rejection of rationality in the artwork, 'which would peremptorily condemn it as untruth in the face of the entanglement of all human activity in the social totality.'[51] And yet, the extra-rational is nevertheless *necessary* to art for it to persist as more than blunt empirical objectivity. Art is thus 'a refuge for mimetic comportment.'[52] The aims of rationality, Adorno tells us, are not accessible to rationality itself. It is here instead that the artwork holds out the possibility of truth in modernity:

> Capitalist society hides and disavows this irrationality [of its aims], and in contrast to this, art represents truth in a double sense; it maintains the image of its aim, which has been obscured by rationality, and it convicts the status quo of its irrationality and absurdity.[53]

Art then, for Adorno, reveals (at least potentially) what rationality cannot show of itself, what cannot be determinedly denoted. It is capable of this because it is

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[50]Ibid., p.77. See also Theodor W. Adorno, 'Looking Back on Surrealism,' in *Notes to Literature, Vol. I*, trans. Shierry Weber Nicholsen (New York: Columbia University Press, 1993)

[51]Adorno, *Aesthetic Theory*, pp.74–5.

[52]Ibid., p.73.

[53]Ibid., p.73.

constituted by this tension between its rational and mimetic poles—mimesis here being 'the nonconceptual affinity of the subjectively produced with its unposited other.'[54]

Given that the critical potential of art thus comes from the mutual dependence and irreconcilability of its mimetic refraction and discursive rationality, it is easier to see how we might construct an argument that Oulipian practice bears a critical relation to its conditions of production in mimetic terms. This possibility is opened up, I suggest, in particular with their incorporation of mathematical or scientific-structural forms as resistant material, which can be interpreted as a reflection back on the domination of nature and humanity. From this perspective, the Oulipian project thus functions as critique of rationalised society, most obviously in their use of mathematics.

Significantly, while Adorno's own thinking often predicts art's likely destruction when it accommodates itself to mathematics, there are also hints that he finds routes— if not escapes from the fate of art—that art may take, in a reformed relation to this *other*. Such indications would tend to contradict the more dominant thrust of his narrow modernism. Regarding the question of construction, an inevitable development in the spirit of artistic nominalism, Adorno finds a dead end: 'in construction the dynamic reverses completely into the static: the constructed work stands still. Nominalism's progress thus reaches its own limit.'[55] However, in a later passage, a certain ambivalence regarding artistic construction is detectable. As he states:

> Construction is equally able to codify the resignation of the weakened
> subject and to make absolute alienation the sole concern of art—which
> once wanted the opposite—as it is able to anticipate a reconciled condi-

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[54]Ibid., p.74.
[55]Ibid., pp.302–3.

tion that would itself be situated beyond static and dynamic. The many interrelations with technocracy give reason to suspect that the principle of construction remains aesthetically obedient to the administered world; but it may terminate in a yet unknown aesthetic form, whose rational organisation might point to the abolition of all categories of administration along with their reflexes in art.[56]

The ambivalence of the principle of construction is, I argue, the space in which the Oulipian project operates: the excessive, unnecessary use of mathematical logic in the construction of literary work (or more properly the construction of the means of construction of literary work, which places the endeavour a step back from the demand of a specifically artistic productivity) drives so far as to render it pointless in terms of the immanent demands of an end-work, but thereby socially critical of the instrumentality of means-ends rationality.

Mathematics has of course become *the* language of the physical sciences, which are prized for their rigour and self-consistency, and their technological application. Mathematics is in this way the touchstone for claims of objectivity in any given discipline, as is observable in the twentieth-century mathematisation of social sciences such as psychology or economics. Cybernetics and computational thinking, which the Oulipo, initially at least, declare an interest in applying to literature, also develop a mechanised model of control systems, one that is reflected back onto human rationality itself, and indeed one that has been developing significantly since the early days of computing and which is very apparent now in the resurgence of interest in 'artificial intelligence'. It is striking however, that despite the early interest in computation—for

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[56]Ibid., p.305.

example Queneau's statement that they 'regret having no access to machines'[57] and various essays touching on computational process—such an approach is never fully exploited by the Oulipo. Take for example, Paul Fournel's 'Computer and Writer', in which the main categories of research are given as 'Aided Reading' and 'Aided Creation'. There is no displacement of the subjects of reading or writing. Consider also Le Lionnais's 'Poèmes Algol', which offers a variation on the meaning of writing poetry with a programming language (ALGOL), that is, rather than writing a programme which produces poetry, Le Lionnais here writes poetry with the restricted vocabulary of ALGOL's reserved words: *begin, goto, if, then, next, real,* etc. As Le Lionnais notes, drily, ALGOL 'est assez bien adapté aux mathématiques. Il se charactérise par un vocabulaire très reduit.'[58] ['… *is quite well adapted to mathematics. It is characterised by a very reduced vocabulary.*']

If, then, the Oulipian project in some respects appears as a mechanisation of literary production, it yet holds back from the full renunciation of subjectivity in what would be 'mechanical automatism'. Rather it maintains the mediated relationship between the human subject and the technical work (as *process*), in a fashion which brings both into question. The 'arbitrary' aspect of these technical methods, which have no *need* for their use, at once posits a non-reason as the end, or holds back from an end, and draws attention to the instrumentalisation of reason more generally as it is detached from critical engagement with the social purposes to which it is put.

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[57]Raymond Queneau, 'Potential Literature,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.51.

[58]François Le Lionnais, 'Ivresse algolique,' in *La littérature potentielle* (Paris: Gallimard, folio essais, 1973), p.215. Note that the *Poèmes Algol* appear in French, but there is no French version of ALGOL; thus the vocabulary list is also translated, and takes on a different semantic flexibility. The entry in the Oulipo Compendium then distances this even further with translations back into English that no longer respect the restrictions of ALGOL's reserved words.

Since the dawn of Romanticism, the status of the artwork has increasingly been based on its individuation in relation to universals, both social and historical, those 'givens' of tradition that have been incorporated by the dominance of the commodity form. This marks a shift from earlier valorisations of art. That is, in modernity, the artwork no longer claims its status in relation to universals or genre types of classicism, but must continually define itself *against* such universals. Classical (or neoclassical) art is governed by ideal forms, established in antiquity: universal genres of tragedy, comedy, epic and so on.[59] However, with aesthetic modernism, the 'measurement' of artworks in terms of generic universals gives way to a 'directive' for the artwork towards individuation in opposition to those genres, a valorisation of freedom ushered in by the early German Romantics: as Friedrich Schlegel writes, 'all the classical poetical genres have now become ridiculous in their rigid purity.'[60] This directive, which becomes, somewhat paradoxically, a universalising tendency itself in the sense in which it identifies the essential quality of art, tends towards an absolute heterogeneity. Yet, as Adorno writes, from this perspective:

> The sole path of success that remains open to artworks is also that of their progressive impossibility. If recourse to the pregiven universality of genres has long been of no avail, the radically particular work verges on contingency and absolute indifference, and no intermediary provides for compromise.[61]

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[59] Despite that, according to Adorno, art *qua* art has always directed itself towards the specific: 'from time immemorial, art has sought to rescue the special; progressive particularisation was immanent to it.' Adorno, *Aesthetic Theory*, p.275.

[60] Friedrich Schlegel, 'Critical Fragments,' in *Philosophical Fragments*, trans. Peter Firchow (Minneapolis: University of Minnesota Press, 1971), §60.

[61] Adorno, *Aesthetic Theory*, p.277.

Here lies the path of art's self-dissolution, by Adorno's account: such individuation 'terminates in a literal facticity, and this is irreconcilable with art.'[62] This nominalistic, anti-generic drive of the artwork is also tied to its increasing rationalisation, in the construction of artworks intended to become more consciously disruptive of the settled norms of their predecessors (for example, in musical terms, to embrace and *use* dissonance as a disruption of tonality). The work becomes more critically self-reflexive in its construction, more focused on its individual newness and resistant to the familiarity of existing cultural objects as well as to the wider demands of the social context. In other words the mimetic aspect of art itself stands in danger of becoming rationalised as an 'end', and thus the tension that gives art's critical relation to reality, its possibility of a truth content, may dissolve into fully rational accountability.

For Adorno, the inevitable direction of autonomous art's drive for individuation results, then, in its self-dissolution and in fact pushes artistic production either towards meaninglessness, or back into the heteronomous condition from which it aimed to escape. As Peter Osborne puts it, 'the destruction of tradition is at the same time a destruction of the stability of the interpretative community which weakens its resistance to purely commercial criteria of evaluation.'[63] In this perhaps final stage of modernist art, Adorno sees that, with the absence of defining universals, 'dissonance bears all too closely on its contrary, reconciliation; it ... prefers to join forces with reified consciousness.'[64] The question that follows, for an analysis of the Oulipo, is to what extent does Oulipian practice conform to the preceding diagnosis in Adorno's sense? Are their rational, constructive mechanisms 'joining forces' with reified con-

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[62]Ibid., p.300.
[63]Osborne, 'Adorno and the Metaphysics of Modernism,' p.42.
[64]Adorno, *Aesthetic Theory*, p.19.

sciousness? If so, can this provide a different conception of the literary work *beyond* the modernist demand for individuation? Or if not, can the dissolution of the dialectic of rationality and mimesis be held off by a heightened rationality of construction itself? Is it, in other words, possible to recover from the 'unilinearity' of Adorno's theoretical prescription, and against the restrictive pessimism of Adorno himself concerning art's futures, the possibility of a wider conception of artistic materials and methods, even while the broad categorial framework of his aesthetic theory is retained?

The answer to this may be sought not merely in the rationality of the Oulipo's constructive means, but more particularly, I argue, in the mathematisation of rational forms as material, and—most especially, from the perspective of Adorno's account of modern art's necessary resistance to 'the pregiven universality of genres'—their *arbitrary* application. That is to say, there is no *reason* immanent to the work itself for a novel or poem to be structured or re-structured, at a high level of narrative elements, or a lower level of sentence structures, according to permutations given by Mathews's algorithm, or an eodermdrome,[65] not least because the methods used are developed independently of such an end-conditioning work. Neither is there any explicit socially determined reason for this application in each particular case (even if in the wider situation, of course, this is arguably interpretable as a necessary response—though clearly not the only one—to a crisis of autonomous art). The work is thus granted access to a universal 'outside' itself (for example, its legitimacy in terms of a universal mathematical or logical structure) that gives a meaning beyond 'literal facticity', on the

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[65]Mathews's algorithm is a procedure that can be applied to anything that can be symbolically represented as a matrix of entities, such that a series of prescribed horizontal and vertical shifts lead to an alternative order without reference to the elements' signification. Harry Mathews, 'Mathews's Algorithm,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998). For more details on the eodermdrome, see chapter 2.

one hand, or absolute commodity capture, on the other. Both the immanent purpose of the artwork and the exterior purpose of the external conditioning form are thus subverted by their conjunction in order to render the activity, effectively, 'useless' in conventional terms.

Of course such claims to arbitrariness need to be questioned—what does this actually mean? The arbitrariness of components of artworks or their organisation, after all, is usually the basis for their negative assessment by Adorno. Indeed, he frequently aligns arbitrariness with a contingency or lack of meaning that is alien to art. For example, Adorno states that 'artworks are alive in that they speak in a fashion that is denied to natural objects and the subjects who make them. They speak by virtue of the communication of everything particular in them. Thus they come into contrast with the *arbitrariness* of what simply exists.'[66] Art exists by virtue of its *immanent* tensions, and therein, for Adorno, lies its meaning. The arbitrary is thus the neutrality of the empirical or the unmediated contingency of social labour. Where this arbitrary intrudes into the work, it is, by Adorno's consideration, a flattening of the significance of the work because of its formal indifference to the content of the work.

However, this concept of arbitrariness, while it less commonly appears in statements of definition of Oulipian work, is in fact a highly significant—and, I would argue, critically ineliminable—characteristic of the Oulipian constraint; that is, the application of formal structures in the production of work that have no logical connection prior to their conjunction. The logic of the constraint is thus a simple externality in terms of social or artistic logic, yet it is brought in by subjective volition. There is no *need* for it, in terms of the work; but it is not, however, *aleatory*. Indeed, this is one

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[66] Adorno, *Aesthetic Theory*, p.19, my emphasis.

fundamental difference between the Oulipo's processes and the aleatory practices of certain other artists or schools of the same period, and the substantive justification of their 'anti-chance' declarations. The constraint form is rigorous, and it is *chosen*, in an act that does not attempt to defuse authorial agency *per se*.

Adorno himself acknowledges the presence of mathematical reason in artworks, but does so with a strong note of caution:

> The affiliation with mathematics that art established in the age of its dawning emancipation and that today, in the age of the dissolution of its idioms, once again emerges as predominant, marked art's emergent self-consciousness from its dimension of logical consistency. Indeed, on the basis of its formalism, mathematics is itself aconceptual; its signs are not signs of something, and it no more formulates existential judgments than does art; its aesthetic quality has often been noted. Of course, art deceives itself when, encouraged or intimidated by science, it hypostatises its dimension of logical consistency and directly equates its own forms with those of mathematics, unconcerned that its forms are always opposed to those of the latter.[67]

Art is produced with a certain logic—if only by virtue of the fact of its being *made*—and thus logical form, Adorno contends, is part of the dynamic of the work. The danger is that it becomes a mere *formula* for the work, as Adorno feared was the case with the 12-tone system. On the face of it, Oulipian practice would defy this warning. But again, arbitrariness of application renders the situation more complicated. The

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[67]Ibid., pp.187–8.

conceptualisation of the work's forms in terms of mathematics is, as I have argued, if anything, performed with an *excess* of mathematical reason in Oulipian forms. That is, the imposition of mathematical logic is *so* wilful as to take rationalisation of the constructive process away from the logic of ends, producing an instrumentality that is instrumental to the point of pointlessness (the self-contained logic of mathematics, irrelevantly applied). It is an excess of rational means that here subverts the instrumentalisation of the constructive process, one that is arguably fostered in the very 'aconceptuality' of mathematical form that Adorno acknowledges.

That the Oulipian use of mathematics that I consider here is characterised primarily by its perversity is not unacknowledged by certain Oulipians. To mathematise language and literature is inherently problematic, not least because mathematics is not a semiological system in the same way as 'natural' language. That is, there is no polysemy, no ambivalence, no issue of translation. In fact, the conceptual condition of natural languages is a topic of some interest to certain Oulipians and a line of interpretation that is certainly fruitful, namely that there is an excess of meaning over signification (which is the condition of possibility of the 'process' of one of the Oulipo's greatest 'anticipatory plagiarists', Raymond Roussel) as well as the lack of a universal or trans-linguistic signified.[68] As I discuss in chapter 2, one of the central influences on the Oulipo's thinking of mathematics is the group known as *Nicolas Bourbaki*. Bourbaki's project to reduce the totality of contemporary mathematics to a set of core axioms in set theory was impossibly ambitious (both in actuality, as it turned out, and probably also in principle). It is thus that Jacques Roubaud describes

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[68]Harry Mathews has written on this: see Harry Mathews, 'Translation and the Oulipo: The Case of the Persevering Maltese,' in *The Case of the Persevering Maltese: Collected Essays* (Champaign: Dalkey Archive Press, 2003). There is also an analysis of this aspect of Oulipism in Dennis Duncan, *The Oulipo and Modern Thought* (Oxford: Oxford University Press, 2019), especially chapter 5.

the Oulipo as 'a homage to Bourbaki and an imitation of Bourbaki,' but also 'a parody of Bourbaki, even a profanation of Bourbaki.'[69]

In his 'History of the Lipogram,' Georges Perec writes: 'Exclusively preoccupied with its great capitals (Work, Style, Inspiration, World-Vision, Fundamental Options, Genius, Creation, etc.), literary history seems deliberately to ignore writing as practice, as work, as play.'[70] His sentiment here reflects the Oulipo's desire to de-mystify the process of writing and with it discard or at least reframe such often inadequately questioned (post-)romantic concepts as inspiration, genius and creation. It is not simply that the Oulipo are 'anti-inspiration' (as might appear to be the case in their critique of Surrealism, discussed in the first chapter), and indeed there are different strands among Oulipians concerning quite what 'inspiration' means or how it should be reconsidered: radical formalism, imitator formalism and rational inspiration, to use Chris Andrews's formulation.[71] Rather, what emerges more generally for the Oulipians is that any post-romantic notion of a sovereign author in general as the unique and unaccountable giver of spirit to a work is to be radically displaced, de-mystified.

In this sense, the Oulipo can be seen to share with Adorno the conception of an (implicitly) mediated relation of subject and object in artistic construction. Adorno complains, 'the concept of genius is false because works are not creations and humans are not creators.'[72] That is, the concept of genius—inherited from Kant, by way of Romanticism—claims absolute originality, which human subjectivity, with its dialec-

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[69]Roubaud, 'The Oulipo and Combinatorial Art,' p.38.

[70]Georges Perec, 'History of the Lipogram,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.98.

[71]See Chris Andrews, 'Inspiration and the Oulipo,' *Studies in 20th and 21st Century Literature* 29, no. 1 (2005): 9–28.

[72]Adorno, *Aesthetic Theory*, p.232.

tical mediation by the objective, cannot own, and 'thus spawns the ideology of the organic and unconscious artwork, which flows into the murky current of irrationalism.'[73] Adorno does not of course reject the subjective altogether in the construction of the artwork, and even retains the possibility of the concept of genius, inasmuch as may be 'stripped away from its crude equation with the creative subject.'[74] But in asking 'what speaks in art?' Adorno makes clear that it is not simply the 'lyrical "I"' of poetic subjectivity that gives a voice to the work. Indeed the 'individual who produces it is an element of reality like others,' but this 'intervening individual subject is scarcely more than a limiting value, something minimal required by the artwork for its crystallisation.'[75]

What Oulipian practice shares with Adornian theory here, then, is the understanding of art as having developed beyond the concept of a sovereign genius, unaccountable to rationality, whose spirit animates the artwork with what is essential to it. The working through of a constructive principle in art, which develops out of the inadequacies of resistance that trouble the purely subjective spirit, is then inextricably bound to, though in tension with (its plurality is irreducible), its material specificity. In this sense, art has moved beyond the older, romantic unity based in the subjective alone to a mediation of the subjective principle and objective materials. As Adorno states:

> Every work possesses materials that are distinct from the subject, proce-
> dures that are derived from the materials of art, as well as from human
> subjectivity. Its truth content is not exhausted by subjectivity but owes
> its existence to the process of objectification. That process does indeed

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[73] Ibid., p.232.
[74] Ibid., p.232.
[75] Ibid., p.228.

require the subject as an executor, but points beyond it to that objective other.[76]

Oulipian practice would seem, at the very least, to confirm the dialectical mediation of both subjective and objective elements in the construction of the literary work and the concept of potential as lying not just in the unaccountable subject, but in the relationship with artistic material. However, while Adorno insists on the *technē* of making, he is emphatic in refusing any retrieval of a 'pre-modern' notion of craft—the tension inherent in the artwork is not simply resolved by recourse to an older concept of technique that did not hold that same tension. He writes that 'an art from which the last trace of that ether—the simple fact that someone is an artist—has been expunged simply dries up into *philistine handicraft*.'[77] Craft is necessarily deprecated as art's other here, in line with the division of the modern concept of art. Craft production retains only the status of commodity production, of decorative, comforting objects.

We might then ask whether Oulipian practice diverges from this general separation? Is there is a redemption of craft or something akin to it (at least the 'craft' of writing) in such a way that, escaping Adorno's blanket refusal, it critically questions instrumentalisation by directly engaging in (a kind of) instrumentalisation? The application of excessively rationalised forms to writing, the apparent perversity of arbitrarily mathematising literary structures as 'problems' to be solved (the Oulipo's *Bourbakisation* of literature), offers a rethinking of purpose in craft, for modernity, rather than simply a resistance to it.

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[76]Theodor W. Adorno, 'Art and the Arts,' in *Can One Live After Auschwitz?: A Philosophical Reader*, ed. Rolf Tiedemann, trans. Rodney Livingstone (Stanford: Stanford University Press, 2003), p.375.

[77]Ibid., p.376, my emphasis.

Perhaps the clearest alignment with mathematics in the plurality of arts comes, in this respect, with music. Music is in fact central to Adorno's thinking of art, the topic of his greatest expertise. It is thus that many of his texts touch revealingly on the meaning of mathematical form in art, through its incorporation into music, particularly with Adorno's criticisms of serialism.

'Musicians are usually truants from maths classes; it would be a terrible fate for them to end up in the hands of the maths teacher after all.'[78] Music, for Adorno, is not alien to organisation, but, crucially, its organising principle must be *immanently* derived—that is, it must be organic with regard to the musical material, rather than externally imposed. 'The more completely the work is organised, the more eloquent it is, since the idea of complete organisation refers to the content of the organic and not to mathematical necessity. In its pure form the latter is always a compositional defect.'[79] It is in relation to the mediation of composition and material which serialism lacks that Adorno famously proposes the development of an 'informal music', one that does not have recourse to an imposed external order, but is responsive to the logic of its material, and yet is fully in control of its processes, holding these aspects in tension. Through this Adorno anticipated a musical freedom. 'Only music which is in control of itself would be in control of its own freedom from every compulsion, even its own.'[80]

The association of freedom with control is clearly very sympathetic to the Oulipian view, but Oulipian methods also diverge strongly from Adorno's conception of an *informal* compositional practice, in their embrace of mathematical form, precisely

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[78]Theodor W. Adorno, 'Vers une musique informelle,' in *Quasi Una Fantasia: Essays on Modern Music*, trans. Rodney Livingstone (Verso, 1998), p.269.
[79]Ibid., p.308.
[80]Ibid., p.318.

because of its arbitrariness (and 'non-immanence') with regard to its material application. For Adorno, the 'forms which are external or abstract or which confront [music] in an inflexible way' must be discarded, but it is just these qualities of externality, abstraction and inflexibility that characterise the Oulipian constraint.

As the above hopefully makes clear, the interpretation of Oulipian practice that I offer in this thesis is thus based on the particular historical circumstances of the group's emergence; that is, in Adorno's terms, a crisis of art's autonomy in a society that is increasingly dominated by rational and technological forms. Adorno writes in *Aesthetic Theory* that 'art must go beyond its own concept in order to remain faithful to that concept.'[81] If this statement is to be taken in full seriousness, it does of course run the risk of exceeding the intention that utters it. And in fact this is, ultimately, what I hope to achieve. The thesis that follows does so through the consideration of Adorno's critical categories but necessarily, therefore, without respecting the implicit (and sometimes explicit) boundaries that he places on the legitimate *immanence* of artistic materials and of art's concept, and thus what would 'go beyond' it in remaining 'faithful' to it.

Overall, the thesis contends that the Oulipo can be seen to offer a distinctive trajectory among the various responses to what Adorno identifies as a crisis of art's autonomy in the latter half of the twentieth century; in other words, that they pursue an alternative modernism. I argue that the Oulipo's use of arbitrary rigidified logical structures in literary composition is categorially alien to the latter's concept, and thus that it forms a kind of resistant material which must be worked with. The thesis proceeds, in its first three chapters, by way of comparative studies of the major artistic and

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[81] Adorno, *Aesthetic Theory*, p.40.

intellectual currents that inform the Oulipo's development in twentieth-century France, seeking to draw out the Oulipo's distinctiveness by way of its differences and overlaps with other responses to modernity's rationalising and abstracting forms. The first chapter explores the Oulipo's relation to Surrealism, which is on the whole, one of opposition. Surrealist automatism, irrationality and the reliance on chance is countered by Oulipian 'voluntary literature' of rationally-informed constraint, and yet they are both responsive, I argue, to modernity in the need to find or construct the new. The second chapter explores the importance to the Oulipo of the work of Nicolas Bourbaki, which provides a counter-model to that of the Surrealists: that of the most abstract axiomatic mathematics, which is the prototype for the emptiness of constraint structures in terms of immanent literary meaning. Chapter three discusses the concept of structure used by the Oulipo and how this differs from that developed by their contemporaries in French structuralism and the modern development of universal science as a pattern for *use* rather than containment by description. In the fourth chapter, considered in light of the Adornian account of art's modernity outlined above, and developing the ambivalent relations to the Oulipo's intellectual contemporaries described in the previous three chapters, I explore the group's refiguring of an artisanal approach to literary production. Craft is retrieved here, from its outmoded status, as an approach to making that serves, for the Oulipo, as an unusual model of engagement with the most 'advanced' formal materials, one that side-steps their universalising tendency. Finally, in the epilogue I consider whether, given the Oulipo's more recent manifestations and its developing legacy, but despite its longevity, the group's critical moment has passed.

1. Surrealism, Chance and Rationality

With its refusal of social and ethical proprieties, and of the reign of an industrially rationalised civilisation and its norms, Surrealism undertook to transform the world by recourse to the liberated imagination. In the wake of a war whose scale of destruction was, if anything, facilitated by the products of that civilisation, and whose artistic products tended only to offer consolation, they demanded a more radical settlement than the mere shifting of national borders. Their project was not intended merely in the service of a detached aesthetic pleasure, but rather towards a metaphysical (and indeed social) revolution, towards a greater *reality*. By recourse to dreams, semi- or un-consciousness states and the provocation of automatism, the Surrealists aimed to transcend the comfortable distinction between art and life with the claim, as Jacqueline Chénieux-Gendron puts it, 'to overturn the quest for the probable in art by making an astounding bet on the imagination, presented as the central power of the human mind, from which emerges a whole life-in-poetry.'[1]

In this pursuit of potential energy and the new through language, and the commonly-perceived *strangeness* thereby encountered, there is, superficially at least, the hint of a

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[1]Jacqueline Chénieux-Gendron, *Surrealism*, trans. Vivian Folkenflik (New York: Columbia University Press, 1990), p.2.

prefiguration of certain aspects, albeit more modest, of the Oulipian project. However, Queneau insists, in his 1962 interview series with Charbonnier, that Oulipian treatments, while resulting in texts of not dissimilar appearance to those of Surrealism, are totally different in terms of method: 'on ne fait pas du surréalisme; l'apparence est surréaliste, peut-être, mais la méthode ne l'est pas, ce qui est tout à fait important.'[2] ['*We are not doing Surrealism; the appearance is Surrealist perhaps, but the method is not; that is of the utmost importance.*'] The Surrealists, for the Oulipo, are a group they seem to feel the need to define to define themselves *against*—Jacques Roubaud similarly, for example, notes that the Oulipo's methods 'radically distinguish it from ... the Surrealist group'[3]—although it may be too strong to describe their position as a blanket *anti*-Surrealist one. The objections are typically couched in terms of more specific points of contrast, as I will outline in this chapter. The core differences between the Oulipo and Surrealists may be expressed as three major oppositions. First, of rationality and non- or irrationality: the Oulipo's methods are rational, conscious and logical, while the Surrealists prized the non- or irrational, unconscious or unaccountable as a revelatory source. Second, constraint, as the self-imposed adherence to (unnecessary) logical forms, is the usual definition of Oulipian work, while for the Surrealists, the *lack* of constraint, absolute freedom—a strongly Romantic concept—is sought. Third, since Oulipian methods are not necessary, they must be chosen *voluntarily*, while Surrealist *automatism* involves a state of passivity before chance or the unknown.

The Oulipo do, however, have some direct historical connections to Surrealism, which is hardly surprising given the intellectual-cultural prominence of the latter group

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[2]Queneau, *Entretiens avec Georges Charbonnier*, p.146.
[3]Roubaud, 'The Oulipo and Combinatorial Art,' p.38.

in the first half of the twentieth century: the young Queneau was a member of the group for four years, until his split with Breton in 1929. Also Noël Arnaud, another original member of the Oulipo, was a member of the group, *La Main à plume*, which maintained attempts at Surrealist expression—and Resistance activities—following Breton's flight from France during the Second World War. In fact, the activities of *La Main à plume* are, in certain respects, proto-Oulipian: texts written under the material constraints of restricted communications under Nazi occupation, the results of which include an unpublished dictionary composed using both formal constraints and automatism.[4]

Queneau's published texts from the years following his split with Breton show a distinct antipathy towards the more doctrinaire aspects of the latter's theorising. His 1937 semi-autobiographical novel, *Odile*, offers an often parodic portrayal of Breton and the Surrealists' activities. For example, a meeting of the group is described in which Anglarès [Breton] 'was intent on annexing territory for the greater glory of his name.' Anglarès quizzes Travy [Queneau] about the element of chance in mathematics, to which the latter offers an unproved arithmetical postulate. When Anglarès protests that there is no element of chance in it, Travy responds, 'No. But there's no obvious reason why it should be like that.' To which Anglarès concludes, 'Which proves there's something like a mathematical unconscious.'[5] The scene, as well as indicating the specific difference in concerns regarding chance, consciousness and mathematics, also shows Queneau's more cautious approach to theoretical generalisations of the

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[4]See Delphine Lelièvre, 'Travaux surréalistes à la limite de l'OuLiPo: *La Main à plume* et les manuscrits du *Dictionnaire analytique de la langue française*,' *Formules: revue de créations formelles*, no. 11 (May 2007). Lelièvre however distances this work from Oulipism since, as she describes it, the constraint was deployed only as a means towards a 'true automatism'.

[5]Raymond Queneau, *Odile*, trans. Carol Sanders (Normal: Dalkey Archive Press, 1988), p.30.

type characteristic of the avant-gardes, a tendency that would be continued with the Oulipo. For Anglarès/Breton here, the mathematical postulate is adapted to serve his pre-existing programme; that is, it becomes a means. Travy/Queneau's attitude to the unknown, on the other hand, is somewhat more ambivalent; what is not proved is worth exploring, it would seem, in its specificity, rather than under the mystifying blanket of the Surrealist unconscious.

Probably the Oulipo's most commonly accepted description—that they engage in writing under *constraints*—would certainly seem to be the direct antithesis of (and perhaps even reaction to) Surrealist *free* expression, specifically the practice of automatic writing. The constraint is fundamentally a rational imposition on the process of textual composition, even if only by virtue of the decision to use it. The Surrealists, by contrast, were drawn to dreams and trance-like states, hypnosis and other modes in which some kind of expression could take place freed from rational demands—of literary form, of social propriety, of conscious subjectivity itself—as an opening of (or at least approach to) the absolute, or the unknown that is suppressed by those restrictions. The Surrealist evaluation of chance—and specifically Breton's concept of *hasard objectif*, along with automatism—as the determination by that which is rationally unaccountable, is in this sense a particularly strong point of contention for the Oulipo, although it is also subject to some equivocation, as I will describe below. Furthermore the explicitly theorised programme and political engagement of the Surrealists in the 1920s and 1930s also contrasts with the Oulipo's reticence, after the war, to produce a total theory of their work, and certainly not a literary or political theory of the form typical of Surrealist or other avant-garde manifestos.

Nevertheless, there are points of similarity, both implicit and explicit, between the

Surrealists and the Oulipo that are worth acknowledging. In formal terms, questions of game-playing, particularly with language and even certain aspects of technique are evident in both practices. While the Surrealist project was explicitly a reaction against social norms, rational stasis and domination, Oulipian work, in its way, is also concerned with subverting certain norms—of literary composition explicitly, but implicitly, as may be interpreted critically, the role of rationality in social domination more broadly. In this sense, both groups are understandable as a product of modernity, of the progressive rationalisation of all aspects of life in accordance with abstracted rational norms and the dominance of the commodity form, that is, of mathematised scientific understanding, and the attendant economic rationalisation that pretends to objectivity. Where the two groups differ primarily then is in their consideration of the relations between the sources (of writing) and rationality, whether the rational is to be rejected as a restriction of the true source of images, in the case of the Surrealists, or, as I will argue, subverted by itself by its own excess in an activity that is critically interesting in itself, in the case of the Oulipo.

André Breton's famous definition from his 1924 *Manifesto of Surrealism* gives a statement of the group's ambitions:

> SURREALISM, *n*. Psychic automatism in its pure state, by which one proposes to express—verbally, by means of the written word, or in any other manner—the actual functioning of thought. Dictated by thought, in the absence of any control exercised by reason, exempt from any aesthetic or moral concern.[6]

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[6]André Breton, 'Manifesto of Surrealism,' in *Manifestoes of Surrealism*, trans. Richard Seaver and Helen R. Lane (Ann Arbor: University of Michigan Press, 1972), p.26.

Great weight is put here on the revelation of essential thought, for which the written word is here considered a 'means'. Elsewhere Breton talks of the primacy of language (which does not much accord with determinations of language which insist on a more socially constituted discursive aspect). I will return to the status of language for Surrealist explorations later on, but initially it is useful to consider the relation to certain discursive forms and games that were used by the Surrealists as a means to the end of the expression of the unconscious. In games, procedures and linguistic structures, triggers were found for such exploration. It is in this way that a current of linguistic play can undoubtedly be traced from the Surrealists to the Oulipo.

There is perhaps no intrinsic significance of the game that is appealed to here in Surrealist practice, but the sense of the game—or *play*, which in this context I take as closely related—as a free activity, separated in some sense from 'reality', as unproductive, and yet as having its own structural rules—these characteristics are among those identified by Surrealist fellow-traveller, Roger Caillois[7]—is important, and important also to the understanding of the Oulipo's implicit debt to Surrealism. That is, the Surrealist game does not respect the conventional demands of 'reality', but that does not make it less serious in itself, in its own structures and in its own transgressive, rather than socially useful, productivity. This accords with Freud's assertion that, in childhood play, 'the opposite of play is not what is serious but what is real.'[8] But where Freud sees children's play as the work of the imagination in the aspiration to attain the adult, 'real' world—and its adult development then as the phantasy that recalls that

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[7]Caillois identifies the following characteristics: free, separate, uncertain, unproductive, rule-governed, and make-believe. Roger Caillois, *Man, Play and Games*, trans. Meyer Barash (Urbana: University of Illinois Press, 2001), pp.9–10

[8]Sigmud Freud, 'Creative Writers and Day-dreaming,' in *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume IX (1906–1908): Jensen's 'Gravida' and Other Works*, ed. James Strachey, trans. James Strachey and Anna Freud (London: Vintage, 2001), p.144.

childhood desire, which is Freud's more major interest—for the Surrealists, games are a means of breaking with the conventional in the fostering of a greater reality.

A exemplary case of the Surrealist game is *cadavre exquis*, now better known as a drawing game, but which originated as a textual device circa 1925. A text is written piecemeal in such a way that no player sees the entire text until it is complete. The production of a text in this way limits the rational determination of its purport by any one of its writers as well as any conscious collaborative determination.[9] The collectivity of its composition is then taken to work at an unconscious level, to draw out what could not be expressed, or indeed what would be suppressed, by individual subjective intention.

Given the similarities in the two groups' relations to games, it is perhaps unsurprising that *Cadavre exquis* is a game to which Gérard Genette compares Oulipian devices, writing that the Oulipo's 'confidence in the "poetic" (semantic) productivity of chance clearly belongs to the Surrealist tradition, and Oulipism is a variant of the cadavre exquis,'[10] This assessment has (equally unsurprisingly) sparked indignation on the part of the Oulipians themselves: for example, Arnaud reaffirms the Oulipo's distinctions from the unconscious of Surrealist automatism and their objection to chance.[11] Yet it has also been noted that *cadavre exquis* can be considered as a form of combinatorial phrase-construction exercise; combinatorics being one of the key mathematical domains of Oulipian research, if the following schematisation is considered: a pre-

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[9] See Alastair Brotchie and Mel Gooding, eds., *A Book of Surrealist Games*, trans. Jennifer Batchelor Alexis Lykiard (Boston: Shambhala, 1991), p.25.

[10] Gérard Genette, *Palimpsests: Literature in the Second Degree*, trans. Channa Newman and Claude Doubinsky (Lincoln: University of Nebraska Press, 1997), p.40.

[11] See Noël Arnaud, 'Gérard Genette et l'Oulipo,' in *La Bibliothèque Oulipienne, Volume 5* (Bordeaux: Le Castor Astral, 2000). See also Le Tellier, *Esthétique de L'Oulipo*, p.28.

determined number of players (the number must match the number of syntactic units)
each take on a text-generative role defined by a particular lexical element in a gram-
matically prescribed structure. The roles rotate around the players and again, their
order is pre-determined and can be considered as a permutational device. Regarded in
this way, the Surrealist game, Caroline Lebrec argues, is comparable in formal terms to
the Oulipian use of the *sestina*, a medieval verse pattern often adopted by Oulipians.[12]
However, while a permutational structure can be ascribed to it, the device—if it can
be called that—does not function in the same way as a constraint, that is, it does not
place a formal imposition on the imagination that would demand some kind of work-
ing process. The Surrealist game is rather meant to 'spark' unanticipated images: the
image as the clash of incongruous elements is a key Surrealist concept, its value, as
Breton writes, 'a function of the difference of potential between the two conductors'.[13]
Simone Collinet, Breton's first wife, recalled the experience in 1968: 'violent surprises
prompted admiration, laughter and stirred an unquenchable craving for new images—
images inconceivable to one brain alone—born from the involuntary, unconscious and
unpredictable mixing of three or four heterogeneous minds.'[14] The device functions,
in other words, as a structure in which the unconscious is channeled or provoked to
expression, but here the demand is more towards some kind of 'pure' productivity. In-
deed it is precisely any kind of rational accountability that is to be avoided in favour of
'violent surprises'. The Oulipian form, by contrast, has to be worked with in order to
meet its demand. Where the Surrealist device simply says 'write', Oulipian uses of the
sestina, to use Lebrec's comparison, as an arbitrary constraining form would say 'write

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[12]This comparison is made by Caroline Lebrec, 'Contrainte formelles et jeux d'écriture: le "cadavre
exquis" surréaliste et la "n-ine" oulipienne,' *Formules: revue de créations formelles*, no. 11 (May 2007).
The sestina is described in more detail on p.214, chapter 4.

[13]Breton, 'Manifesto of Surrealism,' p.85.

[14]Simone Collinet cited in Brotchie and Gooding, *A Book of Surrealist Games*, p.144.

with this formal material', where the material (which would not comprise the entirety of the resources) would typically make the writing considerably more difficult, though not pre-determined, and require a degree of *rational* deliberation.

This is not to say that the Oulipo undervalue the unexpected of course, but that they do not presume to encounter it unmediated. That is, there is no recourse to a 'pure' expression of mystical or quasi-mystical source. Rather, what is produced is unpredictable, but not constitutively *counter* to rationality; there is always a mediated relationship of expression and construction in the production of the new. In the Oulipian case, the resource is not so much unconscious spontaneity or chance combinations, but something more akin, as I suggested in my introduction, to a 'craft' in accordance with a challenge whose difficulty is an arbitrary imposition, not driven by any literary or subjective necessity. This then tends toward a rather different conception of 'inspiration', not so much in a crudely 'romantic' mode (which Surrealism tends towards) of unconstrained free expression, but rather in the sense of a skilled engagement that works with the resistant properties of artistic materials.

In many ways, in fact, the Surrealists are the foremost early twentieth-century representatives of a dominant strain of Romanticism, who, in their pursuit of an imagination freed form rational-social constraint, mirror the early German Romantics' own response to what they considered to be the 'disenchantment of nature', in which mathematical reason takes the place of the authority of nature. This latter authority is what the Romantics saw as the governing spirit of antiquity in which 'subject and object simply are, and not just partially, united, such that no separation can take place without injuring the nature of that which is to be divided,' as Hölderlin puts it in 1795. The division, the act of judgement, has developed and reached its fruition in Kant's

placing of the absolute as a *focus imaginarius*, a regulative idea of reason rather than something directly experienceable. In Hölderlin's case this leads to a nostalgia for a lost unity. For Friedrich Schlegel, albeit not entirely consistently, the reverse is the case, and it is here that the Romantic idea of (modern) art really takes hold; that is, for Schlegel, rather than rediscovering the lost unity of antiquity, freedom—and specifically free poetry—will *make* a new synthesis of subject and object, a 'second nature'. As Novalis similarly puts it, 'nature shall become art, and art shall become second nature.'[15] What is at stake here, and what is so influential on the spirit of Surrealism, is an affirmation of the power of the imagination to recreate a utopian vision of the new, in a way that is prototypical of the modernism that would follow: a *futurity*.

As Schlegel writes in what is probably his most famous fragment, 'Romantic poetry is a progressive, universal poetry.'[16] The 'progressive' here is indicative of the change brought in by Romanticism, indicative of the distinctly modern valorisation of the *new* as such, and with it the modern concept of art defined by that new, rather than by the the requirements of generic types; that is, the art that is defined as such by its *exceeding* such genres. Such art inscribes its own meaning because it *creates* its own meaning, rather than aspiring to the pregiven. As Jay Bernstein describes Schlegel's conception of the Romantic *novel* (similar, though not identical, to that of poetry), 'the novel as "new and unique" is constitutive of what it is to be a novel; it must exceed genre requirements—as emblems of traditional authority—as a condition for it being an artwork.'[17] Rather than classical archetypes that speak of a lost universality, what is

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[15]Novalis, 'On Goethe,' in *Classic and Romantic German Aesthetics*, ed. J. M. Bernstein, trans. Joyce P. Crick (Cambridge: Cambridge University Press, 2003), §468.

[16]Friedrich Schlegel, 'Athenaeum Fragments,' in *Philosophical Fragments*, trans. Peter Firchow (Minneapolis: University of Minnesota Press, 1971), §116.

[17]J. M. Bernstein, 'Introduction,' in *Classic and Romantic German Aesthetics*, ed. J. M. Bernstein (Cambridge: Cambridge University Press, 2003), p.xxx.

sought is a *new* universal, engendered by the 'pure' art of poetry.

The role of poetry here, for Schlegel, is central, because, of all expressive forms, it is only poetry, he asserts, that approaches a *pure* art and thus absolute freedom. Considering the relative freedoms in the arts, Schlegel asks, 'how much less can such a limit be set for poetry, which is limited by no particular material in either compass or in strength? whose tool, an arbitrary sign-language, is the work of man, and is endlessly perfectible and corruptible?'[18] If this is a freedom that is, similarly, the spirit conjured by the Surrealist vision of language, it is also a consideration of the linguistic 'medium' that is quite counter to Oulipian methodology. This then is what is at stake in Oulipian *craft*: that it rejects the concept of an unmediated freedom, and instead, in poetry (or writing more generally), models the *form* of language as a resistant, rather than intrinsically free (or indeed ideologically transparent) *material.*

Another ostensible similarity between Surrealism and the Oulipo, in the use of pre-formed devices, can be found in the comparison of Surrealist 'proverbs' to Oulipian 'perverbs'. For neither the Surrealists nor the Oulipians could these be said to be among their more significant works, but they do again indicate a difference in thinking of 'sources' with regard to textual production. In 1925, Paul Éluard and Benjamin Péret produced a pamphlet of 152 'new' proverbs. For example:

> Avant le déluge, désarmez les cerveaux
>
> Sommeil qui chante fait trembler les ombres
>
> Un albinos ne fait pas le beau temps[19]

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[18]Friedrich Schlegel, *On the Study of Greek Poetry*, ed. and trans. Stuart Barnett (Albany: State University of New York Press, 2001), p.59.

[19]Paul Éluard and Benjamin Péret, *152 proverbes mis au goût du jour* (Toronto: Oasis, 1977).

[*Before the flood, disarm brains*

Sleep that sings makes shadows tremble

One albino does not make for good weather]

Here the formal characteristics of the typical proverb are reproduced—the form of causation, logical consequence or subsumption that imply prescription or caution—but the aspect of comforting received wisdom in its signification is disrupted: the conjunction of the thematic elements is more of a Surrealist image-clash than a conventionally meaningful combination. The Oulipian *perverb* is, by contrast, more systematic in its construction—a splicing of two existing proverbs in such a way that the logical structure of the sentence is maintained while the meaning takes an unexpected diversion.

There is no great technical challenge in these constructions, but they are typically considered by the Oulipians less as final forms than as devices for further use—narrative structures, say, as in the case of Harry Mathews's *Selected Declarations of Dependence*, which engages in exhaustive permutational exercises of proverb splicing that are then used to structure short narrative paraphrases (linking the derived text to the source perverb is left as an exercise for the reader). For example:

All roads get the worm

Mighty oaks spoil the broth

Too many cooks bury their dead[20]

Both approaches play on the recognition of the form of the proverb (pithy, formulaic, expressive of some time-worn 'common sense'), and it is precisely this familiarity

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[20]Harry Mathews, *Selected Declarations of Dependence* (Los Angeles: Sun & Moon Press, 1996).

that gives subversive potential, which is exploited in both cases. But while the Surrealist proverb characteristically uses this form as a container for strange new comparisons or relations—as a vehicle for the unconscious to produce sparking images, the opening into the otherness of the Surreal—the Oulipian *perverb's* use of existing proverbs tries to uncover a latent strangeness in the text itself, brought to light through reordering and juxtaposition. There is arguably an image-clash of sorts—and it is not implausible to see the continuity of a certain disruptive spirit with regard to social norms—but it is not as a result of unconscious expression. It is true, as Warren Motte says, that some shift is thereby achieved: 'something that was banal, secure and familiar has been rendered strange and somehow disquieting.'[21] But this effect is achieved through the manipulation at the structural level of existing language, rather than mining the unconscious or appealing to another level of reality as its source. In both cases, the re-rendering of the proverb form results in a defamiliarising effect. Certainly that one may, in encountering such forms, in Shklovsky's terms, 'recover the sensation of life',[22] would likely be very amenable to the Surrealists' own intentions, and similarly not too far from Mathews's either, but it is significant in the latter case that the perverb also becomes material for further *compositional* work. In this sense the proverb/perverb form is a formal principle from which literary or poetic work is to be developed. The contrast then is between the Surrealist use of the proverb form as a means, a provocation for the free expression of the repressed mind, and the Oulipian perverb as a restriction that demands more ingenious narrative constructions to meet it.

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[21] Warren Motte, *Playtexts: Ludics in Contemporary Literature* (Lincoln: University of Nebraska Press, 1995), p.135.

[22] Viktor Shklovsky, 'Art as Technique,' in *Russian Formalist Criticism: Four Essays*, 2nd ed., trans. Lee T. Lemon and Marion J. Reis (Lincoln: University of Nebraska Press, 2012), p.12.

Chance, Automatism and Freedom

The claimed antipathy of the Oulipo to Surrealism can be traced back to Raymond Queneau's split with Breton in 1929,[23] and evidence is found in his 1930s writings (both fiction and essays) that he had a strong reaction during this period against avant-garde movements in general, and Surrealism in particular. No overall thesis is explicitly proposed by Queneau to unite these writings except for an apparent dislike of dogmatic or reductive universalism, mystification and intellectual posturing. It is possible however to see certain intellectual preoccupations that are contrary to the Surrealist spirit, and which in turn would be influential for the development of the Oulipo. Queneau hopes 'to show what a conscious technique of the novel might be,'[24] in one essay from this period, reflecting on his own use of mathematical structures in the composition of novels. He states, for example, that 'the distribution of the characters can't be left up to chance, for a considerable part of their meaning depends on it.'[25] Queneau evidently rejects here the idea that writing should be dependent on sources that are accidental, irrational or constitutively unknowable. He objects to the celebration of the 'brilliance' of fragments over well-crafted artworks,[26] and what he sees as a modish valuing of spontaneous work or the passivity of authorship that hopes for

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[23]Queneau was of course hardly unique in falling out with Breton, and he claims in 1950 that the split was 'for strictly personal reasons, not ideological.' Raymond Queneau, 'Conversation with Georges Ribemont-Dessaignes,' in *Letters, Numbers, Forms: Essays, 1928-1970*, trans. Jordan Stump (Urbana: University of Illinois Press, 2007), p.175.

[24]Raymond Queneau, 'Technique of the Novel,' in *Letters, Numbers, Forms: Essays, 1928-1970*, trans. Jordan Stump (Urbana: University of Illinois Press, 2007), pp.26.

[25]Ibid., pp.28.

[26]'Yes, there are flashes of brilliance to be found there, as there are in Leibniz's unfinished writings, but what does this mean? That the amorphous is always an in every way preferable? No: only that its *better than nothing*.' Raymond Queneau, 'Plus and Minus,' in *Letters, Numbers, Forms: Essays, 1928-1970*, trans. Jordan Stump (Urbana: University of Illinois Press, 2007), p.39.

'inspiration' to be visited upon it:

> The poet is never inspired because he is the master of what others assume
>
> to be inspiration. He doesn't wait for inspiration to drop from the heavens
>
> like roasted ortolans. He *knows how to hunt*, and puts into action the
>
> irrefutable proverb 'heaven helps those who help themselves.' He's never
>
> inspired because he's always inspired, because the powers of poetry are
>
> always at his disposal, obedient to his will, receptive to his guidance. He
>
> doesn't have to seek the source of his genius in soporifics. He is in no way
>
> dependent on surprises, happy accidents, or flights of fancy.[27]

What Queneau sets out, broadly, is an alternative sense of 'inspiration': rather
than the visiting 'muse' of romantic cliché—and he rejects its isolated product, *l'art
pour l'art*—Queneau's inspiration is willed, rational and in accord with technique:
something closer, indeed to a pre-romantic idea of artisanship. Indeed, as Queneau
states elsewhere, 'the litterateur has a craft, and the artist is an artisan.'[28] This is also
the assessment of Queneau, made by Michel Leiris, as practicing a 'demystification'
of literature. He continues: 'it was most certainly not a question of ridiculing literature
but, with complete artisanal honesty, of putting it back in its proper place—one of the
sturdiest places, incidentally, when one no longer has any romantic illusions about it.'[29]
The picture of literature and/as art that Queneau indicates here should not be strictly
aligned with the position of the Oulipo, not least because there is no theoretical dogma

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[27]Ibid., p.40.

[28]Raymond Queneau, 'What is Art?' In *Letters, Numbers, Forms: Essays, 1928-1970*, trans. Jordan Stump (Urbana: University of Illinois Press, 2007), p.36.

[29]Michel Leiris, 'Preface,' in *Stories & Remarks*, trans. Marc Lowenthal (Lincoln: University of Nebraska Press, 2000), pp.xxii–xxiii.

of the Oulipo that demands what the literary work should be. Certainly, in *What is Art?*, Queneau declares art's independence from science—'it has better things to do'[30]— although in his later writings (and indeed those of other Oulipians) this is complicated by a consideration of scientific or quasi-scientific method in literary composition: take for example his 1967 article in the *TLS*, 'Science and Literature', in which he states: 'if there is a renewal of the contact between science and literature, it is because "science" has now incorporated the social sciences. Literature, if it survives, cannot ignore this fact; even less can it remain indifferent to it.'[31] There is also, in the earlier essay, more of a willingness to characterise literature as such, albeit in very vague terms (he is in fact more voluble in refusing other established doctrines) than is the case in the later Oulipo. There is, though, no worked out theory of literature that goes much further than an alignment with hat-making, and this again points to artisanal concerns: thus, the hat he considers valuable is well-made, he writes, 'a sturdy, beautiful hat', and yet one that 'fits every head, each according to its capacities, and it gives strength and valour to everyone who puts it on.'[32] The artwork, for Queneau, is non-gratuitous, in other words, it has a use, and while he is rather general about what constitutes this, it is, broadly speaking, to do with art's relation to life: 'art, poetry and literature ... occupy the entire affective realm from knowledge to action, rooted in the former, flowering in the latter.'[33] The Oulipians are far more circumspect in this regard. What continues from these anti-Surrealist writings of the 1930s, however, is the focus on volition and craft. Whatever the *use* of art, for Queneau, here and later in the Oulipo, it is a thing to be done well, something to be achieved with skill and effort. The major shift in the

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[30]Queneau, 'What is Art?' p.36.
[31]Queneau, 'Science and Literature,' p.864.
[32]Queneau, 'What is Art?' p.37.
[33]Ibid., p.36.

Oulipian perspective is that this process of making, of technique and the preparation of materials, becomes itself the point at issue, rather than what is ultimately made.

The rejection of *l'art pour l'art* is clearly continuous with Surrealism in some senses, as one might expect, although the terms in which the Surrealists conceived this, as one of political exigency, is also antithetical to Queneau. What Queneau is most opposed to in the Surrealist position, however, and what is thus indicated most clearly with his focus on craft and volition, is his mistrust of the unreliability or accidental nature of inspiration or some kind of expressive force. 'Discontinuous inspiration', for Queneau, is not a thing to be celebrated: 'the fact that modern poets have been reduced to a discontinuous inspiration doesn't mean we must console them by calling the minus that afflicts them a plus, their failing a sign of genius, their weakness a strength.'[34]

These early essays from Queneau precede the Oulipo by some twenty to thirty years, and thus cannot be taken too strongly as avowing Oulipian attitudes. It is also of course not only Surrealism itself that Queneau takes issue with; it is perhaps more strongly the reception of it, or other avant-gardes, as intellectual 'fashion'.[35] In any case, as Queneau himself acknowledged, some of his writing of this period comes from a reaction that, on later reflection, did not have the same strength for him. Thus, in an interview in 1950 he states, 'I did experience a violent reaction at the beginning, a passionate loathing. ... Since then I've come to recognise Surrealism's importance, for others as for myself, the importance of its influence, both in depth and in breadth.'[36]

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[34]Queneau, 'Plus and Minus,' pp.40–1.
[35]See Raymond Queneau, 'Intellectual Fashion,' in *Letters, Numbers, Forms: Essays, 1928-1970*, trans. Jordan Stump (Urbana: University of Illinois Press, 2007).
[36]Queneau, 'Conversation,' p.175.

Nevertheless there are some striking points of continuity between the reactions of Queneau in the thirties and the Oulipian project, perhaps most evidently in the quote from *What is Art?* that is frequently used in characterisations of the Oulipo:

> Another perfectly false idea, also widespread nowadays, is the equivalence of inspiration, exploration of the subconscious, and liberation—of chance, automatism, and freedom. But the *sort of inspiration* that consists in blindly obeying every impulse is in reality a kind of slavery. The classic writer who composes his tragedy by observing a certain number of rules that he knows is freer than the poet who writes whatever comes into his head, and who is a slave to other rules that he doesn't see.[37]

It will be useful then to draw out this likening of 'chance, automatism and freedom' that Queneau sees in Surrealism in order to address what they mean both for Surrealism and, whether or not in negative form, for Oulipism.

That the Oulipo are 'anti-chance' is often stated bluntly and tends to be taken as definitive. For example, Jacques Roubaud offers '*Proposition 13*: The Oulipo's work is anti-chance.'[38] And from Noël Arnaud, whose own history of Surrealist connections gives the statement some weight: 'the Oulipo thinks of itself as "anti-chance".'[39] Indeed, it is one of the key distinguishing claims against Surrealism, contra the claims of critics such as Genette that liken Oulipian and Surrealist 'procedures' to one an-

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[37]Queneau, 'What is Art?' p.36.

[38]Jacques Roubaud, 'Mathematics in the Method of Raymond Queneau,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.87.

[39]Noël Arnaud, 'Twenty Questions for Noël Arnaud (Interview by Warren Motte),' trans. Warren Motte, *Studies in 20th Century Literature* 10, no. 2 (1986): p.300.

other.[40] And yet, in Queneau's famous quote, an opposition to chance is not exactly what is declared: his complaint concerns the *false equivalence* of 'inspiration, exploration of the subconscious, and liberation—of chance, automatism, and freedom.' It is thus a conflation of certain modes of thought in an idea of freedom which proves to be antithetical to Queneau's pursuit of 'voluntary literature'—'il n'y a de littérature que voluntaire', as he declared[41] ['*There is only voluntary literature.*']—rather than simply a rejection of any or all of the individual terms. Whereas for the Surrealists, chance is the opening of and thus the escape from the rational, for Queneau, it is, rather, a submission to an unaccountable authority—he refuses the essentiality in writing of something constitutively unknowable.

There is a further indication of an important ambivalence regarding chance in the minutes of the Oulipo session of 12 April 1962:

> BERGE: [...] nous sommes essentiallement *anti-hasard*.
>
> QUENEAU: Nous ne sommes peut-être pas tellement 'anti'. Je préférais dire que nous manifestons une certaine méfiance à l'égard du hasard.
>
> BERGE: N'aimeriez-vous pas: 'Nous lançons un défi au hasard?'
>
> *(Approbations générales.)*[42]
>
> [*BERGE: [...] we are essentially anti-chance.*
>
> *QUENEAU: Perhaps we are not so 'anti'. I would prefer to say that we show a certain mistrust towards chance.*
>
> *BERGE: Would you not like: 'we throw down a challenge to chance?'*

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[40]Genette writes: 'Chance is no stranger to the [Oulipian] endeavour.' Genette, *Palimpsests*, p.40. He adds that 'the word "potential" evidently means *fortuitous...*' Ibid., p.44.

[41]Bens, *Genèse de L'Oulipo*, p.42.

[42]Ibid., p.146.

(General approval.)]

This exchange took place in response to a suggestion by Jean Queval that the group should define a collection of certain key terms in order to clarify future discussions. A comment follows about the dangers of automatism, but the discussion quickly moves on to questions of structure, and no rigorous definition of 'chance' is developed.

It seems then that the declarations of antithesis are not quite straightforward. Chance is rejected where it is taken as an unaccountable resource, but if it is considered not as a source, but as an openness in a process, its lack of full determinability and the unknown nature of its outcome, then in some sense it cannot be entirely dispensed with, short of the mechanical automatism in writing that the Oulipo also disdain. It is in this sense that Berge's approved remark that the Oulipo *challenge* (rather than simply reject) chance, acknowledges that in some sense, something not entirely mechanical must enter into the writing programme that they propose, not as its essence, but as an aspect of the total material. The relation to chance then needs some clarification, since it functions at several levels and it is not simply the case that any kind of non-predictability is excluded in Oulipian writing. Alison James in fact asserts that chance is both incorporated and resisted in Oulipian work: 'the Oulipo's originality lies in the systematic use of constraints that simultaneously incorporate, produce, and control chance.' The incorporation of chance for James is the arbitrary aspect of constraint, its lack of immanent necessity in the productive situation. This then leads, she continues, to the generation of 'the accidental and the unexpected ... while at the same time pointing the way to order and aesthetic closure.'[43]

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[43]James, *Constraining Chance*, p.131.

But since chance can have various meanings or suggestions, it is useful to step back a little and consider the various modalities of 'chance' that are at work in artistic production. Of course it is the French term *hasard* that is at stake in the original declarations: Oulipian *anti-hasard*—and, if Surrealism is considered the counterpoint, *hasard objectif*. The word is rendered closely enough in translation by the English *chance*, though, as Alison James points out, the latter has a positive, and perhaps active, connotation of opportunity that is not present in the French.[44] James offers a useful typology of chance as it is found in the production of artworks in general: (a) the generation of randomness through coin tosses, etc. (ultimately leading to patterns amenable to probabilistic analysis); (b) the suspension of conscious control in the manner of 'pure psychic automatism'; (c) the non-subjective determination by mechanical (rather than psychological) automatism; and (d) work whose final form is not closed, but depends on reception. Clearly, in this categorisation, the Surrealist engagement with chance is most strongly identified with case (b), although the active engagement of case (a) is also documented in their activities. As for the Oulipo, their work can be characterised in accordance with senses (c) and (d), while their 'anti-chance' declarations can be seen to have targets in both (a) and (b) and particularly in the sense in which these are deemed valuable.[45] It is the latter tendency, which is central to the Surrealist conception of chance, that it is originary, subversive or revelatory in some sense. It is thus not so much chance considered as unpredictability—in Oulipian procedures also, full pre-determination is avoided—but the valorisation of this as a manifestation of freedom, in line with Queneau's earlier statement, that is objected to by the Oulipo. Such chance, in defiance of the rational, cannot be freedom, from an Oulipian perspec-

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[44] Ibid., p.5.
[45] Ibid., p.117.

tive. Yet it is the characterisation of chance as the determination by another order (a somewhat paradoxical formulation) that is central to the Surrealist concept of *hasard objectif*.

The Surrealist concept of 'objective chance' is an experiential engagement with events that refuse rational comprehension: here subjectivity takes on a certain passivity before a more profound, irrational causality. There is clearly more at stake here than the application (for poetic or other ends) of chance procedures, though this is not to say that the Surrealists did not take deliberate steps to provoke chance: Breton talks of 'slip[ping] a thin blade into a book chosen at random' to inform him about a woman who may or may not have been about to visit him,[46] and similarly of consulting his cards to obtain from them 'a clear view of my fortune and my misfortune.'[47] But in these cases it is in the manner of a consultation—an attempt to draw a response from a situation beyond rational accountability or control as a response to an underlying desire. This latter condition is the more significant aspect of Surrealist chance—that it describes surprise or a *fortuitous* coincidence of apparently disparate events or objects, rather than *randomness* in a strictly mathematical sense. Chance is thus written into Surrealist experience as a tendency towards mysticism, or, as Walter Benjamin puts it, not wholly approvingly, their occasional visits to the 'humid backroom of spiritualism.'[48]

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[46] André Breton, *Mad Love*, trans. Mary Ann Caws (Lincoln: University of Nebraska Press, 1987), p.15.

[47] Ibid., p.16.

[48] Walter Benjamin, 'Surrealism: The Last Snapshot of the European Intelligentsia,' in *Selected Writings: Volume 2, Part 1: 1927-1930*, ed. Michael W. Jennings, Howard Eiland, and Gary Smith, trans. Edmund Jephcott (Cambridge: Belknap Press, 2005), p.209.

The opening to this experience of chance is indicated earlier in Surrealists texts
than its theorisation: in the first section of *Nadja*, for example, Breton talks of the
observation of 'facts ... which permit me to enjoy unlikely complicities' and more
strongly, 'certain juxtapositions, certain combinations of circumstances which greatly
surpass our understanding.' The distance between these and the more rationally ac-
countable experiences, he relates to the distance between the Surrealist text and the text
that is 'fully weighed and measured.'[49] He goes on to give accounts of some of these
'privileged sensations' that often involve a sense of the felicitous coincidence of ratio-
nally unconnected events, while also suggesting a deeper continuity running beneath,
and he relates attempts to open himself to such experiences—for example, by enter-
ing the cinema with no prior awareness of what is playing, or visiting the flea market
in the hope of happening upon 'incomprehensible' objects. The encounters continue
with Nadja herself, and she becomes for Breton, in some sense, the embodiment of
this unaccountability or irreducibility that he holds so dear. A similar submission to
chance is manifested in Aragon's writings of the same period: 'I am the bottle-imp
of my senses and of chance: I am like a gambler seated at the roulette table. ... My
body is the roulette wheel and I am betting on red.'[50] In fact Aragon maintained serious
reservations about the poetic value of automatism in itself, yet his musings on chance
indicate the same recourse to a hidden source.

In Breton's 1937 work *Mad Love (L'Amour Fou)* these encounters are given a more
theoretical framework in the concept of 'objective chance'. Here chance, as a phe-
nomenon of conscious experience, is theorised as a concept that goes beyond the ques-
tion of causal unaccountability, or the mismatch between different orders of causality

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[49]André Breton, *Nadja*, trans. Richard Howard (Harmondsworth: Penguin, 1999), p.20.

[50]Louis Aragon, *Paris Peasant*, trans. Simon Watson Taylor (Boston: Exact Change, 1994), p.7.

('internal' vs 'external'). Breton acknowledges these prior characterisations, in their 'sluggish evolution'—from Aristotle to Poincaré—before settling on one he ascribes to 'the modern materialists': 'chance is the form making manifest the exterior necessity which traces its path in the human unconscious.'[51] The logic of these orders of experience is still relevant, but significantly, it is now the unconscious that transgresses the boundaries of their separation. Perceived at the level of conscious experience this formulation risks appearing as a kind of clairvoyance, but Breton's re-figuring of experience is both more profound and more challenging than straight prophecy, in that it refigures the temporal separation of unconscious intent and resolution. Jacqueline Chenieux-Gendron calls this a 'diversion of the system of causality.'[52] For Breton, what appears as chance is really the convergence of the human and the natural—the form of a necessity of which conscious perception, unmediated by desire, is unaware. A circumvention of categorial experience—of causality, subjectivity, even perhaps the propriety of temporal succession—this is for Breton the realm of Surrealist experience. It has the perhaps paradoxical consequence—paradoxical to the notion of chance that sees it as an absence of causation—that this form of experience appeals to another causation, a higher, non-rational causation. Thus it is a resistance to the enlightenment ideal of total rationality, 'the system from which everything and anything follows,' as Horkheimer and Adorno put it.[53] But where the latter conceive of this as an inescapable dialectic of rational modernity, Breton seeks to uncover a state that lies beneath rationality, one with its own *irrational* necessity. Breton writes: 'it is as if suddenly, the deepest night of human existence were to be penetrated, natural and logical necessity

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[51] Breton, *Mad Love*, p.23.

[52] Chénieux-Gendron, *Surrealism*, p.81.

[53] Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment*, ed. Gunzelin Schmid Noerr, trans. Edmund Jephcott (Stanford: Stanford University Press, 2002), p.4.

coinciding.'[54]

Looking at this space of Surrealist experience, Chénieux-Gendron describes objective chance in terms of 'a gap between the foreseen and the given ... experienced as an excess.'[55] But she also points out that it is only through linguistic form that it is accessible—thus the gap is extended across the space of signification:

> The combination sign/event called 'objective chance' thus decomposes
> into a sign without signification, chronologically prior, followed by an
> event called 'random' which sustains a privileged relationship with the
> prior sign. The event 'gives meaning' to the sign; it responds to certain
> characteristics evoked by the words or pictorial signs in what they signify
> as well as in their signifiers. This system in its entirety may be called ...
> an 'event margin'.[56]

This 'event margin' identifies an operation of rational uncertainty within the frame of language—the process of signification itself opened to the unknown, where meaning is not simply the determined usage by a subject, but instead follows a prior unconscious determination of linguistic matter. This accords with a much earlier romantic conception of language, found in Novalis's 1798 *Monologue*, in which language only speaks truly when its subject's will is subordinated:

> But what if I were compelled to speak? What if this urge to speak were the
> mark of the inspiration of language, the working of language within me?

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[54]Breton, *Mad Love*, p.40.
[55]Chénieux-Gendron, *Surrealism*, p.81.
[56]Ibid., p.82.

And my will only wanted to do what I had to do? Could this in the end,

without my knowing or believing, be poetry? Could it make a mystery

comprehensible to language?[57]

This of course apparently presents the most stark contrast with Oulipian composi-

tional practices, the opposition of consciousness versus unconsciousness—subjective

volition versus submission—in the production of poetic or literary work, a profoundly

different understanding of how linguistic production relates to its source(s): the passive

wait for roasted ortolans to drop from the heavens versus the hunt, to use Queneau's

image.

The second term of the triad, 'chance, automatism and freedom,' also bears the ac-

cusation, in Queneau's conception, of a kind of submission. Automatism—primarily

automatic writing—is one of the defining practices of Surrealism, given as the main

prescription in Breton's famous definition in the first manifesto and presented before

this in works such as Breton and Soupault's 1919 text, *Les Champs magnétiques.* How-

ever, the 'purity' of automatism comes into question where it meets the inevitably con-

scious aspects of language. Louis Aragon, for example, maintains that the Surrealist

'incipit' carries through from the unconscious to the conscious. As Chénieux-Gendron

states, for Aragon, 'the first automatic phrase proposes a rhythm, makes an image or

makes sense: this image or this sense is then assumed as such, and developed in a

combination in which consciousness takes its full place.'[58] There remains, however,

the question of *style*: 'I demand that the dreams I am forced to read be written in

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[57] Novalis, 'Monologue,' in *Classic and Romantic German Aesthetics*, ed. J. M. Bernstein, trans.
Joyce P. Crick (Cambridge: Cambridge University Press, 2003), p.215.

[58] Chénieux-Gendron, *Surrealism*, p.50.

good French,'[59] Aragon writes, not without a certain irony, since this is not quite a question of consciously well-crafted sentences. Rather it is a question of being true to the originary sources of language as Aragon sees it, in terms reminiscent of Novalis's *Monologue*: 'it is when you write a letter *because* you have something to say that you are writing any old thing. ... The meaning is formed outside of you.'[60]

Breton similarly, is aware of the centrality of language to the Surrealist project. He writes:

> Whoever speaks of expression speaks of language first and foremost. It should therefore come as no surprise to anyone to see Surrealism almost exclusively concerned with the question of language at first, nor should it surprise anyone to see it return to language, after some foray into another area, as though for the pleasure of travelling in conquered territory.[61]

Indeed, the verbal form, for Breton, has a more originary link with the (visual) imagination than visual perception itself. He states: 'I have always thought that in poetry verbo-aural automatism was a creative stimulus to reading the most exhilarating visual images, but never that verbo-visual automatism was a creative stimulus to reading visual images which could be distantly compared with its results.'[62] In Surrealism then, language retains a primordial status, an insistence on an expressive essence that would be prior to its social mediation. In fact the demolition of language itself is

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[59]Louis Aragon, *Treatise on Style*, trans. Alyson Waters (Lincoln: University of Nebraska Press, 1991), p.92.

[60]Ibid., p.94.

[61]André Breton, 'Second Manifesto of Surrealism,' in *Manifestoes of Surrealism*, trans. Richard Seaver and Helen R. Lane (Ann Arbor: University of Michigan Press, 1972), pp.151–152.

[62]André Breton, 'The Automatic Message,' in *The Automatic Message*, trans. Antony Melville (London: Atlas Press, 1997), p.29.

more associated with the nihilism of Dada than with Surrealism's utopian programme. Breton states that there was 'no dismemberment of syntax nor disintegration of vocabulary. ... We knew where to stop and it goes without saying that there was no point in reproducing it to a point of satiation; these remarks are intended for those who are astonished that among us the practice of automatic writing was so quickly abandoned.'[63] That is, there was no expression that could be retrieved prior to language that automatism could uncover; automatism, it seems, stopped at the *primary substance* of language.

The profound connection between thought and word, is, for Breton, one of 'rhythmic equivalence', as Chénieux-Gendron states.[64] It is not clear, however, whether, from Breton's perspective, this rules out the idea of a substrate of pre-linguistic thought and the psychological or metaphysical questions that this would raise. The situation is more decisively stated by Aragon, for whom Surrealism was conditioned on the *identity* of thought and word: 'we reduced each sensation, each thought we wished to analyse, to a single word. *Absolute nominalism* was dazzlingly exemplified in Surrealism and it gradually dawned on us that the mental substance ... was, in fact, vocabulary itself. *There is no thought outside words*: the whole Surrealist experience evidences this proposition.'[65] That there is no shape of thought without the signifying plane is, of course, relatable to Saussurean linguistics, but where the latter differs is in the arbitrary nature of signified and signifier. The sign is not the 'speech' of unconscious forms. This of course gives a greater latitude for the formal manipulation language's

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[63]Breton, cited in Anna Balakian, *Surrealism: The Road to the Absolute* (Chicago: The University of Chicago Press, 1986), pp.5–6.

[64]Chénieux-Gendron, *Surrealism*, p.57.

[65]Louis Aragon, 'A Wave of Dreams,' trans. Susan de Muth, *Papers of Surrealism* Winter, no. 1 (2003): p.5.

signifying plane without the implicit necessity for an undercurrent of unconscious significance. It is, in certain respects what fosters a scientific or mathematical approach to language, where its forms can be relationally abstracted from an essential meaning.

The appeal to a 'primary substance' of language is problematic from the perspective of its social constitution. Aragon states that the 'mental substance' is 'vocabulary itself', but this neglects the inherent conventionality of linguistic form. There is, it seems, a refusal of the dialectic in language of its discursive and expressive poles. That is, in the Surrealist primacy of language, expression is all. Adorno, by contrast, states that 'no thought can entrust itself as absolutely and blindly to language as the notion of a primordial utterance would lead us to believe.'[66] What is at stake here is the idea of language as neither the transparent 'medium' supposed by scientific representation, nor the pure expressivity inherited from Romanticism—the language that itself 'speaks' despite one's representational intentions. It is not insignificant that, for Adorno, this model of language also characterises the artwork in general, that it is ineliminably both discursive and mimetic inasmuch as it is both intentionally *made* and yet mimetically expressive in ways that exceed its discursive intention. What language cannot have, however, is some kind of *pure* mimesis, to be revealed by automatism.

It might seem then, that the Oulipian perspective is one of polar opposition to Surrealist expressivity, inasmuch as it invokes the *rational* pole of language, but I want also to suggest that this rationality is not total for Oulipian procedure: this is why, I suggest, there is ambivalence with regard to structuralist analyses, as I will develop in chapter 3. It is also why the Oulipo's imposition of excess rationality—making use

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[66]Theodor W. Adorno, 'The Essay as Form,' in *Notes to Literature, Vol. I*, trans. Shierry Weber Nicholsen (New York: Columbia University Press, 1993), p.7.

of precisely those dominating forms that Surrealism rejects—may arguably be, with regard to the social aspect of language, a richer ground for a critique of rationality than its refusal, at least, that is, given the declining viability of the Surrealist project during the period when the Oulipo emerged. In fact Queneau is already wary of this in the thirties: 'every literary revue of the sort currently called "avant-garde," stuffed full of images, is in reality only an advertisement for art dealers and canvas pushers, a billboard for one painter or another promoted by one patron or another.'[67] Surrealism's decline marks the need for a different characterisation of freedom: freedom, in a social sense, presumes that constraining circumstances can be resisted, and in a historical sense that any territory it has won can be retained. But if freedom is passive, these resistances surely cannot hold. It is in this context then that an Oulipian mediated praxis—mediated, that is, with material constraint—becomes an alternative vision of freedom, a more responsive engagement than simple resistance.

In fact, Breton in the manifesto gives a statement of freedom that can be broken into two aspects—'dictated by thought, in the absence of any control exercised by reason, exempt from any aesthetic or moral concerns'[68]—the *dictation* by thought and the *absence* of control. Broadly speaking, characterisations of this division of 'positive' and 'negative' freedoms have been prevalent in western thought—from the Kantian conception of autonomy, as opposed to the servitude of heteronomous desire, to Hegel's distinction of 'abstract' and 'positive' liberty, to Isaiah Berlin's 'two concepts'. Thus, with Breton, there is offered the 'negative' freedom of a lack of rational constraint, and the 'positive' one of that thought's own determination, which is thereby implicitly *non-rational* or *irrational*. This latter though is hardly the self-governance implied in

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[67]Queneau, 'What is Art?' p.34.
[68]Breton, 'Manifesto of Surrealism,' p.26.

the most concepts of positive freedom: 'thought' here covers an expanded and transgressive conceptual apparatus that is not consciously willed; it is thus more an opening to an alternate determination than the freedom of *self*-determination. Breton similarly addresses the distinction in *Arcane 17*, where he asserts that while 'freedom is defined very well by opposition to all forms of servitude and *constraint*,' the weakness of this negative characterisation is that it represents freedom as a 'state' rather than what it needs to be to maintain its resistance, a 'living force'.[69] He thus contrasts freedom with what he calls 'liberation', in the sense of 'liberation of territory', a 'negative idea'. Freedom, on the other hand, is 'a constant regenerator of energy.'[70] The piece was written in 1944 and thus the context is acute with regard to wartime oppression, but it also maintains that, in addition to the overthrow of objective condition of Nazism, true freedom—freedom of thought—still demands a revolution in consciousness. What Breton again does not affirm though is the sense in which freedom may be associated with *rational* self-determination. For all that a post-romantic liberation from oppression is sought, without a deeper engagement in the means of that oppression, not just beyond the liberation of territory, but beyond the opening to the unaccountable, the risk remains that aspects of what restricts thought remain unaddressed.

Revolution, Utopia and the Unknown

That Surrealism may have missed a deeper critique of empirical reality by abstracting its concept of experience is a cause of complaint for some commentators. Maurice

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[69] André Breton, 'Arcane 17 (excerpts),' in *What is Surrealism? Selected Writings*, ed. Franklin Rosemont, trans. Stephen Schwartz Simon Watson Taylor (New York: Pathfinder, 1978), p.330. My emphasis.

[70] Ibid., p.330.

Nadeau in his *History of Surrealism* acknowledges that the Surrealist submission to objective chance is 'to hold cheap, it will be said, the social conditions which more than any other determine the vicissitudes of our life, and for this reason some have censured Breton for not having completely closed the door to "mysticism".'[71] Nadeau does however go on to offer a defence of Breton in terms of the pursuit of a 'state of grace which unites the possible and the impossible.' One of the best-known—albeit somewhat reactionary—critiques comes from Sartre in 1947, where he sees Surrealism as failing to engage critically with the 'reality' that it resists, thus having no redeeming political efficacy. Breton's attempts to ride through the incompatibility between material and spiritual revolution ultimately fail for Sartre: he characterises the Surrealists as being only tinkerers with superstructural forms that pose no real threat to bourgeois dominance. The supposed unification of dream and reality is, Sartre asserts, only a 'mixing', such that the conceptual value of each is maintained in this 'merry go-round of fairies whirling around a pumpkin,' where 'the *real* pumpkin supported by the entire real world contests these fading fairies which run about its rind; and vice-versa the fairies contest the gourd.'[72] There is for Sartre no mediation in Surrealism—and more specifically no *instrument* of mediation, as he puts it, which is in this case the 'free arbiter' of conscious subjectivity—that would develop the tensions it evokes from contradictories to make effective political address.

For Sartre then there is a failure of critical engagement in Surrealism. He writes: 'their rejection of the subjective has transformed man into a plain haunted house: in that vague atrium of consciousness there appear and disappear self-destructive objects

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[71]Maurice Nadeau, *The History of Surrealism*, trans. Richard Howard (Harmondsworth: Penguin, 1973), p.224.

[72]Jean-Paul Sartre, *What is Literature?* Trans. Bernard Frechtman (New York: Philosophical Library, 1949), p.195.

which are exactly similar to things.'[73] Of course, Sartre's position here refuses a modernist transformative role for language itself, instead relegating it to the status of a utilitarian bearer of (committed) subjective, intended meaning in the 'reality' of the world; the problem, thus, for Sartre is that Surrealism is not adequately engaging with that world in a direct way. This criticism does bear a similarity to Queneau's denigration of automatic writing, as merely reproducing the world as it is: 'the poet who claims to "plunge" into his unconscious in search of the wonders and new worlds foretold by Apollinaire is not an experimenter, but an empiricist.' Surrealism here, for Queneau, remains passive before the empirical. He continues, in perhaps his clearest indication of a critique of Surrealism in terms of its political inadequacy: 'if . . . the poet attempts to provoke his inspiration by automatic means, then he's engaged not in science but in industry, falling in with the rear guard as they meekly follow a certain tendency of their age.'[74] But where Queneau's critique (and his later Oulipian position) is more radical than Sartre's in its consideration of language is that he rejects passivity not just in the face of the world 'as it is', but in language's own capacity to undergo a transformation, one prompted by refusing to see it, on the one hand, as unaccountably given, or on the other, as merely a tool. Instead its very structures are to be actively questioned and triggered in their productivity.

This sense of the reproduction of the existing, rather than its critical transformation, is also central to Adorno's critique of Surrealist montage. For Adorno, the dream, in which Surrealism invests itself so heavily, 'always leaves reality untouched.' Yet Surrealism is not even as spontaneously disruptive of its material as the dream: 'Surrealist constructions are merely analogous to dreams, not more.' That is, while certain

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[73] Ibid., p.195.
[74] Queneau, 'What is Art?' p.35.

rules and logic are suspended and contexts changed, their contents come 'closer to the form of the object. There is a shattering and a regrouping, but no dissolution.'[75] Surrealism then, for Adorno, is typified by its principle of montage, whose objects are represented rather than transformed: the maintenance of a certain kind of objectivity, rather than its critical penetration. Thus 'Surrealism must be understood not as a language of immediacy but as witness to abstract freedom's reversion to the supremacy of objects and thus to mere nature. The montages of Surrealism are the true still lives. In making compositions out of what is out of date, they create *nature morte*.'[76] The result of this is therefore far from a revolution against the rational order of capitalism and the commodity form, but rather the reproduction of its 'objects'. Indeed, Adorno describes the Surrealist images whose value depends on a recognition of childhood fixation as commodity fetishes.

Oulipian Post-Surrealism

Where then, given their resistance to the Surrealist conception of 'freedom', do the Oulipo figure in this anticipation of futurity? If the Surrealist embrace of the irrational is its own constitutive relation to the new—the unknown—as the attempt to break with the dominant forms of capitalist society without being reabsorbed by the latter in its own progressive homogenisation, have the Oulipians abandoned this modernist or avant-garde will to the unknown in their own re-embrace of the rational? As regards the condition of modernity, the Oulipo are certainly not overtly *resistant* to its dominant rational formations in the manner of the Surrealists, at least in the latter's

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[75] Adorno, 'Looking Back on Surrealism,' p.87.
[76] Ibid., p.89.

declarations. Is this, however, in some sense demanded by modern rationality's development, such that the gestures of Surrealism as resistance are no longer adequate? Clearly the Oulipo do not propose a transformation of life in the manner of the Surrealists, but in their working through of certain of the forms of rational domination, it is possible that their approach offers a *critical* response in a way that is now impossible for more overtly resistant strategies. In the three or four decades between Surrealism's flourishing and dominance over French avant-garde culture, and the Oulipo's founding, partly in reaction to this, the extent of rational domination into life arguably is even more abstracted: for example Adorno asserts in 1958/59 that 'in the last forty years ... both the awareness of a principle that gives meaning to life in an absolute sense and the concrete hope that people will thus gain control of themselves have faded.'[77] The emergence of cybernetics in the 1950s can also be seen to connect to computational models in the human sciences—and of course the question of the significance of computers capable of producing coherent utterances had already been broached by Alan Turing. All of this also ties to the strand of structuralist thinking that was moving, in often overtly 'anti-Surrealist' ways, towards a 'science' of literature.[78] The Oulipian position should not however be considered simply as an adoption of these changes. What I want to propose is that, through an ironic distancing from the role of scientific rationality, the Oulipo promise (or promised) a critique of these forms in a way that Surrealist expression could no longer achieve, if only because, as Adorno notes, expressionism, broadly conceived—and automatic writing is a form of this, striving for 'the ideal of pure immediacy'[79]—cannot help but 'produce something like cer-

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[77]Theodor W. Adorno, *Aesthetics: 1958/59*, ed. Eberhard Ortland, trans. Wieland Hoban (Cambridge: Polity, 2018), p.76.

[78]For more on this, see chapter 3.

[79]Adorno, *Aesthetics: 1958/59*, p.60.

tain conventions from within itself.'[80] It is thus that Oulipian method re-purposes the forms of dominant rationality—its mathematised structures—to the point of excess in the method of their employment in a way that demands that they be worked with in a deliberative contract rather than falling back on what Adorno calls a 'complaisant irrationalism'. In this adoption of formal material—take for example Perec's use of *Graeco-Latin bi-squares*, or the verse constraints of Jacques Bens's 'Irrational Son- nets'[81]—it still has the character of something 'delivered ready-made from outside the work,' in the words of Adorno's complaint,[82] but it is *chosen* as a component of the material and worked through in that sense that is both artisanal and yet unnecessary.

The simplest way to put the antithesis of Surrealism and the Oulipo is in terms of constraint: in the case of the Surrealists, the idea of freedom as the rejection of con- straint; in that of the Oulipians, freedom as the self-determined *adoption* of constraint in response to the self-dissolution of freedom as *autonomy*. The 'infinite'—as that which is beyond all 'constraint'—is explicitly targeted as Surrealism's vanishing point in Aragon's *Une Vague de Rêves*, published shortly before Breton's First Manifesto in 1924. The text finishes with the paradoxical formulation, 'who is there? Ah good: let in the infinite.'[83] It places Surrealism itself as something formed by its relation with the unknown—thus Aragon writes of 'the horizon which continually flees before the walker, for like the horizon this concept exists between the mind and what it knows it will never reach.'[84] This opening up to the truly new, such that Aragon states, 'I am no

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[80]Ibid., p.61.

[81]See Georges Perec, 'Quatre figures pour *La Vie mode d'emploi*,' in *Atlas de littérature potentielle* (Paris: Gallimard, folio essais, 1981) and Jacques Bens, 'Le Sonnet Irrationel,' in *Atlas de littérature potentielle* (Paris: Gallimard, folio essais, 1981). The 'irrationality' in question relates, of course, to the mathematical concept of irrational numbers.

[82]Adorno, *Aesthetic Theory*, p.77.

[83]Aragon, 'A Wave of Dreams,' p.11.

[84]Ibid., p.5.

longer the bicycle of my senses, a grindstone honing memories and encounters,' contrasts with the mechanistic 'peace of mind' of philosophers who 'shackle their own imaginations with foreign rings, robbed in famous graves.'[85]

The comparison of Surrealism and the Oulipo is not simply a difference of responses, but is due also to the objective conditions to which these responses are made. It is closely tied to the conditions of the productive period of each group: for the Surrealists, there was perhaps still some optimism that the rational-scientific worldview could be broken in its dominance and something seen beyond it. For the Oulipo this appears not to be the case, and instead, precisely those forms of domination must thus be re-purposed, worked with or played with.

The College of 'Pataphysics

While the foregoing has addressed Surrealism as the Oulipo's claimed antithesis, there are certain other currents of twentieth-century—particularly French—culture that feed into the Oulipian mindset in less antagonistic, though still ambiguous, ways. I will look at the significance of the axiomatic mathematical model of Nicolas Bourbaki in chapter 2 and the Oulipo's ambivalent (overtly circumspect) relationship with structuralism in chapter 3, but a few words should be offered regarding the College of 'Pataphysics, not least because it is as a sub-comission of the College that the Oulipo first took shape.

In the *First Manifesto of Surrealism*, Breton lists, aside from his immediate cir-

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[85]Ibid., pp.2–3. This disdain for the timid pace of intellectual culture is also shown at the start of Paris Peasant, where he complains of a fear of 'genius itself, pure invention, revelation.' Aragon, *Paris Peasant*, p.5.

cle who have 'performed acts of ABSOLUTE SURREALISM', a number of writers, stretching back to Dante and Shakespeare, who he considers 'could pass for Surrealists'. Among these is Alfred Jarry, who Breton claims as 'Surrealist in absinthe.'[86] Jarry also holds a place in Oulipian pre-history, as the inventor of 'pataphysics.[87] The College of 'Pataphysics was founded in 1948, 41 years after Jarry's death.

With that mention in the *First Manifesto*, Breton assimilates Jarry with the Surrealists' own consciousness-altering efforts: the implication of intoxication as the transcending of rationality—in this case associated with Jarry's propensity for alcoholic excess and eccentricity. In the introduction to a few Jarry excerpts in his *Anthology of Black Humour*, Breton uses a quasi-Freudian analysis to affirm Jarry—and his most famous creation, Ubu, who Breton merges here with Jarry—as a proto-Surrealist explorer of an expanded reality, collapsing the boundary between art and life: for example, celebrating Jarry's propensity for shooting in public, he writes 'the pistol serves here as the paradoxical hyphen between the outer and inner worlds.'[88] The transgressive aspects of Jarry's Ubu plays certainly appear as a precursor to Dada and Surrealism, and accord with the 'exceptional' of 'pataphysics inasmuch as established order is rejected. It is notable, however, that Breton does not, in the *Anthology*, mention 'pataphysics, Jarry's other lasting creation, the 'science of imaginary solutions.' Breton's rather partial reading is significant because 'pataphysics, whatever its subversive

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[86]Breton, 'Manifesto of Surrealism,' pp.26–7.

[87]The term *'pataphysics* is, Jarry writes mysteriously, 'preceded by an apostrophe so as to avoid a simple pun.' Alfred Jarry, *Exploits and Opinions of Doctor Faustroll, Pataphysician: A Neo-Scientific Novel*, ed. Alastair Brotchie and Paul Edwards, trans. Simon Watson Taylor, Collected Works of Alfred Jarry, Volume II: Three Early Novels (London: Atlas Press, 2006), p.145. I have here followed the College's own prescription that the apostrophe only properly belongs to Jarry's concept of the imaginary science and never to its adjectival form. Orthography in citations is not consistent, and I have left these as they appear in their originals.

[88]André Breton, *Anthology of Black Humour*, trans. Mark Polizzotti (London: Telegram, 2009), p.258.

potential, is primarily a reaction to science (rather than art), not as its antithesis, but rather as its absurd excess. It is transgressive of rationality's restrictions, but maintains something of its logical form. 'Pataphysics, it is claimed, is not anti-science; instead, as Jarry states 'pataphysics is the science.'[89] Both Surrealism and 'pataphysics can be seen as responses to a general social condition, quite overtly as a negative reaction in the case of Surrealism, more ambiguously in the case of 'pataphysics: the *First Manifesto of the College of 'Pataphysics* of 1950[90] states that 'the culture of 'Pataphysics answers ... a deep need of the present times.'[91] But it is the hyper-extension of rationality, rather than the affirmation of its antithesis, found in 'pataphysics, that can be seen to inform the Oulipian approach to the production of texts. The linkage here must remain somewhat loose, not least because both 'pataphysians and Oulipians are resistant to any kind of definitive containment of their work, but also because Oulipism deviates in certain respects from its pataphysical heritage. But while this pataphysical condition is far from diagnostic, it is revealing of certain conditions of thought that are shared by the two groups.

The College of 'Pataphysics, as I noted above, are resistant to a full definition of 'pataphysics, and furthermore, while clearly drawing a great deal from Jarry, do not hold him essential to the science, claiming they are not his 'epigoni, his progeny or his caryatids. ... Even if Jarry had not been born 99 years ago, and even were he never to have been born, BEING 'PATAPHYSICIANS WE WOULD HAVE INVENTED

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[89]Jarry, *Faustroll*, p.218.

[90]The College of 'Pataphysics institutes its own calendar: 22 Décervelage, 77 P.E. (Pataphysical Era) corresponds to 19 January 1950 (vulg.). I will continue to use the 'vulgar' calendar here for the sake of consistency.

[91]Irénée Louis Sandomir, 'First Manifesto of The College of 'Pataphysics addressed to several people likely to be interested in participating in its Works,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995), p.55.

'PATAPHYSICS ANYWAY.'[92] Nevertheless, it is in Jarry's *Exploits and Opinions of Doctor Faustroll, Pataphysician* that 'pataphysics is given its most oft-repeated characterisation:

> Pataphysics … is the science of that which is superinduced upon metaphysics, whether within or beyond the latter's limitations, extending as far beyond metaphysics as the latter extends beyond physics. … Pataphysics will be … the science of the particular, despite the common opinion that the only science is that of the general. Pataphysics will examine the laws governing exceptions, and will explain the universe supplementary to this one. … Pataphysics is the science of imaginary solutions.[93]

Although Jarry posits his description as a 'definition', it can hardly be called definitive, and nor should or could it be, since, as implied by Jarry's account above, and as developed by the College, it is held to be beyond anything that could be defined. Sandomir, the first Vice-Curator of the College, asserts that 'there is no role for the College of 'Pataphysics in the World, there is not even a College of 'Pataphysics, nor a world. There is only Pataphysics. And we write it weighing up all the insufficiency of this "there is only."'[94] The 'world' then is a fiction and 'what we say about it is the fiction of a fiction.'[95] The idea of the world as a fiction has clear resonances with recent 'postmodern' theses, such as Baudrillard's 'hyperreality'. Baudrillard, an avowed 'pat-

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[92] Opach, 'Tintype,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995), p.107 Emphasis in the original.

[93] Jarry, *Faustroll*, p.145.

[94] Irénée Louis Sandomir, 'The Last Will & Testament of His Late Magnificence Doctor I. L. Sandomir, in his lifetime Vice-Curator-Founder of the College of 'Pataphysics,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995), p.79.

[95] Ibid., p.80.

aphysician himself (he was a *Satrap* of the College), theorises the loss of the real as the dissolution of centres of gravity: 'running counter to the old physics of meaning would be a new gravitation—the true, the only gravitation: attraction by the void.'[96] Baudrillard here draws on an image from Jarry's *Faustroll*, but on this narrow point at least, it appears to be something of a misreading.[97] Jarry speculates on an explanation of gravitational phenomena as resulting from a vacuum ('a unit of non-density') being attracted to the periphery, rather than solid bodies attracted to the core: Jarry's alternative principle is thus not 'counter to the old physics', as Baudrillard claims, but rather an equivocation of physical 'laws'. Jarry's positing of 'pataphysics as beyond metaphysics is also taken up by Deleuze, who aligns 'pataphysics with Heideggerian phenomenology, 'the overcoming of metaphysics.'[98] Others have claimed 'pataphysics as proto-deconstructive.[99]

What is more relevant from an Oulipian point of view, however, is the sense in which science in 'pataphysics is not simply rejected, but rather *reframed*: 'pataphysics as a science of the imaginary, or an imaginary science. A number of the founding members of the Oulipo had for some time been members of the College, most notably Queneau as a *Satrap*, but also Arnaud, Latis and others.[100] A couple of Queneau's pataphysical works can be found in the volume, *Stories and Remarks*: 'When the Mind …' offers a series of pataphysical speculations on alternative physics, and another short piece considers the aerodynamic properties of numbers (the play on the physical-

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[96]Jean Baudrillard, *The Illusion of the End*, trans. Chris Turner (Cambridge: Polity, 1994), p.18.

[97]Jarry, *Faustroll*, p.145.

[98]Gilles Deleuze, 'An Unrecognised Precursor to Heidegger: Alfred Jarry,' in *Essays Critical and Clinical*, trans. Daniel W. Smith and Michael A. Greco (Minneapolis: University of Minnesota Press, 1997), p.91.

[99]See Christian Bök, *'Pataphysics: The Poetics of an Imaginary Science* (Evanston: Northwestern University Press, 2002), pp.31–4.

[100]For a full list, see Oulipo, *Oulipo Compendium*, p.128.

ity of mathematical signs prefigures certain more *lettrist* tendencies of the Oulipo).[101]
Furthermore, as I mentioned above, the Oulipo began as a sub-commission of the College of 'Pataphysics, with their first publication in the College's *Dossier 17* in 1961. In this report, the Oulipo affirm the 'triple invocation of Potential Literature, Pataphysics, and thus Ethernity,'[102] acknowledging the inherent potential of words, but aiming to bring science to bear upon them. This is not, however, a declaration of intent to automate literary production. They state: 'one can easily believe that Potential Literature is not a recipe for "making masterpieces": its aim is infinitely lower, its efforts are directed toward recovering the same generative faculty that lies beyond, but in the far more elementary and scientific order of the structure of language.'[103]

It is not hard to draw a line of assimilation here between the Oulipo and the contemporaneous structuralist sympathies, and not *wholly* incorrect—I address this point more fully in chapter 3—but there is something else at stake here, which the pataphysical context helps to make clearer. That is, that the crossing (one might call it syzygy, to use pataphysical parlance) of literature and science (more specifically, as it turns out, mathematics) is itself already in the realm of imaginary solutions. To bring a scientific logic into the generation of texts, in the service of a 'problem' with dubious grounding in the target domain, is to offer an incongruous perspective: a literary text has no inherent need to be deduced mathematically. What is more, its intention—

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[101] Raymond Queneau, 'When the Mind ...,' in *Stories & Remarks*, trans. Marc Lowenthal (Lincoln: University of Nebraska Press, 2000). Raymond Queneau, 'Some Brief Remarks Relative to the Aerodynamic Properties of Addition,' in *Stories & Remarks*, trans. Marc Lowenthal (Lincoln: University of Nebraska Press, 2000).

[102] Oulipo, 'The Collège de Pataphysique and the Oulipo: Presentation of the Subcommittee's work in Dossier 17 of the Collège de Pataphysique,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.48. The term 'ethernity' is Jarry's coinage, combining 'ether' and 'eternity'.

[103] Ibid., p.49.

indeed the foundation of its problem as *imaginary*—is strictly *inutilious*. Note that, for the College, 'the initial GOAL was ... to FOUND A SOCIETY COMMITTED TO LEARNED AND INUTILIOUS RESEARCH.'[104]

'The science of imaginary solutions' concerns itself with the imaginary, that is, with theoretical explanations that are acknowledgedly invented in a way that is not exactly counter to standard scientific explanations, but rather highlights the non-essentiality of any science as itself a form of fiction: 'pataphysics here pursues the 'as if' that escapes from the 'as is', as Christian Bök puts it.[105] Imaginary solutions are, in certain respects, drawn from the material of established science, that is, these structures and positions are not rejected, but rather re-framed or alternatively explained. 'Pataphysics, rather than pursuing the universal rule, valorises its exceptions, or more strongly, posits the primacy of exceptions as the substance of the world. As the College has it, 'there are only exceptions in the world, and ... a "rule" is merely an exception to an exception; as for the universe, Faustroll defined it as "that which is the exception to itself".'[106] 'Pataphysics then is presented as the scientific imagination of alternative explanations. But if it is a science of the imaginary, it is also important to note that it is itself, or at least begins as, an imaginary discipline. This at least is its presentation in Jarry's *Faustroll*: the 'pataphysician and his 'pataphysics are the works of Jarry's imagination. In this imaginary science there is no hierarchy of scientific truth. 'Pataphysics does not reject the manifestations of conventional science or indeed certain

[104]The College of 'Pataphysics, 'Second Manifesto of the College of 'Pataphysics,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995), p.77. Emphasis in the original. Paul Edwards here uses 'inutilious' to translate the French *inutile*, for which, he notes, ' "useless" does not have the negative force.'

[105]Bök, *'Pataphysics*, p.25ff.

[106]Sylvain d'Y, 'What is The College of 'Pataphysics,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995), p.101.

figures from its established history: in Sandomir's 1952 'Digression', he cites Kepler, Newton, Einstein, Reimann. But these are here synthesised with ideas from Aristotle, the Bible and the Zohar,[107] the equivalence of all solutions persisting since there is no standard of truth to be found in the established material of science by which any notion of historical progression could be valorised. Indeed, even time itself is considered as a pataphysical invention rather than a 'true' substructure or conditioning form, such that the usual chronological succession need not be respected. Jarry writes: 'if we could *remain immobile in absolute space* while time elapses, all future and past instances could be explored successively',[108] a contention that accords quite well with the Oulipian concept of 'anticipatory plagiarism'. 'Pataphysics refuses the claims to explanatory regularity that constitute science as such: there is thus a contradiction in the maintenance of scientific activity at the same time as that which constitutes it is refused in a principle of total explanatory equivalence (no theory is universal, none more valid any other). This is of course only one of many apparent contradictions of 'pataphysics: consider also that it is the science for which there is no role in the world, and yet it is 'the very substance of the world.'[109] The 'pataphysician, Sandomir asserts, 'denies nothing, he exsuperates. In this, as in everything. He has not come to abolish, but to adimplete.'[110] Indeed *antinomy* is something of a pataphysical principle. A consequence of this is that the (apparently) mutually incompatible must be held simultaneously. Again this kind of attitude of thought is quite sympathetic for

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[107]Irénée Louis Sandomir, 'Digression Pronounced 1st Phalle LXXIX P.E. by the Vice-Curator-Founder of The College of 'Pataphysics Before Himself,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995).

[108]Cited in Andrew Hugill, *'Pataphysics: A Useless Guide* (Cambridge, Mass: MIT Press, 2015), p.20.

[109]Sandomir, 'Testament,' p.79. d'Y, 'What is The College of 'Pataphysics,' p.101.

[110]Sandomir, 'Testament,' p.81. The use of obscure words and neologisms is common in pataphysical discourse.

the Oulipo in their pursuit of something incongruous, if not constitutively impossible, the crossing of science and literature (here not at the level of scientific description but of mathematical deduction in composition). The introduction of something arbitrarily scientific or mathematical, that is, a *mechanism*, into what must remain constitutively *unmechanical*, follows a futile or 'inutilious' logic.

I will not pursue the metaphysical or post-metaphysical implications further here, but only note that the gesture is reflective of more than mere game-playing. That is, while 'pataphysics is responsive to science, it is so in a way which intends to address its problems (that is, the problems of total rationality), rather than to counter it by recourse to its other: irrationality. This is reflected in the Oulipo's reaction against Surrealism. The 'pataphysians claim that their work is not satire (even if this seems hard to credit entirely), and that 'there was never any question of affecting a mocking pessimism or a corrosive nihilism.'[111] Some, they admit, may find it humorous—and indeed, elsewhere it is noted that seriousness is anti-pataphysical[112]—but, it is insisted, 'pataphysics is 'beyond laughter and even smiles.'

The status of seriousness mirrors the status of science in 'pataphysics. The intention appears not to be humorous in a light-hearted way, but rather to transgress the boundaries of what constitutes the serious without opposing it as such (in this there are also resonances with Surrealist games, as I mentioned earlier). Such an appeal, from *within* the boundaries of conventional seriousness almost inevitably appears unserious, in the way that conventional physics can likely only think 'pataphysics unscientific.

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[111]d'Y, 'What is The College of 'Pataphysics,' pp.101–2.

[112]Irénée Louis Sandomir, 'Inaugural Harangue Pronounced on the 1st Décervelage of the Year LXXVI P.E. by his Magnificence the Vice-Curator-Founder of the College of 'Pataphysics,' in *A True History of the College of 'Pataphysics*, ed. Alastair Brotchie, trans. Paul Edwards (London: Atlas Press, 1995), p.34.

But 'pataphysics, if anything, reverses this, such that the seriousness of the subset of *the* science that is conventional 'science' is itself rendered unserious, or as unserious as 'pataphysics might be accused of being. If there is a re-figuring of seriousness here, it is one that at once holds all science as both serious and humorous at once.

This question of seriousness is often asked of the Oulipo, since their methods, at least in their initial outline, seem more akin to games than to the weightiness of literary writing. There is, certainly, something of an ethos of play in the Oulipo's methods, and the more conventionally understood literary aspects that are held to be serious come only in certain finished works, such as the themes of memory and loss in Perec's novels and Roubaud's *Great Fire of London* series. This, however, is to allow a received dichotomy to set the terms of the debate. Le Lionnais states at the end of the *First Manifesto*:

> A word at the end for the benefit of those particularly grave people who condemn without consideration and without appeal all work wherein is manifested a propensity for pleasantry.

> When they are the work of poets, entertainments, pranks and hoaxes still fall within the domain of poetry. Potential literature remains thus the most serious thing in the world. Q.E.D.[113]

Similarly Queneau states, in the group's meeting in April 1961, 'nous ne sommes pas des petits plaisantins. C'est *très sérieusement* que nous nous livrons à nos travaux.' This meets with 'murmures approbateurs.'[114] ['*We are not little jokers. We take our*

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[113] François Le Lionnais, 'Lipo (First Manifesto),' in *Oulipo Laboratory: Texts from the Bibliothèque Oulipienne*, trans. Harry Mathews and Iain White (London: Atlas Press, 1995), pp.xx–xxi.

[114] Bens, *Genèse de L'Oulipo*, p.57.

work very seriously. … *Murmurs of approval.*'] And Noël Arnaud, in his scathing response to the characterisations of the Oulipo in Gérard Genette's *Palimpsests*, objects to his conventional division of the ludic and the serious, where Genette finds the latter only in great works, rather than potential methods:

> Gérard Genette ne semble pas prendre au 'sérieux' les oulipiens. Ce n'est pas tant la qualification de 'ludiques' accolée à nos exercices qui nous le laisse croire (chez nous, aucune hostilité envers les 'jeux') que son insistance ultérieure à juger 'sérieuses' quantité d'oeuvres qui, à notre sentiment, ne le sont pas plus, et à vrai dire beaucoup moins que La Vie mode d'emploi de Perec ou Si par une nuit d'hiver un voyageur… d'Italo Calvino. Doit-on comprendre que Genette confond l'exercice oulipien, court exemple en général, destiné à montrer la via- ou fiabilité d'une contrainte et qu'on s'efforce de rendre plaisant (drôle pourquoi pas? et en quoi la contrainte serait-elle alors moins 'sérieuse'?) et l'œuvre—roman ou poème ou pièce de théâtre—écrite sous contrainte et qui peut atteindre les dimensions de La Vie mode d'emploi et sa très réelle gravité?[115]
>
> [*Gérard Genette does not seem to take the Oulipians 'seriously'. It is not so much the qualification 'ludic' which we are led to believe is attached to our exercises (for us, there is no hostility towards 'games') than his subsequent insistence on judging 'serious' the number of works which, we feel, are not more, and indeed much less so, than Perec's Life a User's Manual or Calvino's If On a Winter's Night a Traveller. Must one understand that Genette confounds Oulipian exercises, in general short examples, destined*

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[115]Arnaud, 'Gérard Genette,' pp.13–14.

> *to show the via- or reliability of a constraint and that one tries to make*
>
> *amusing (funny, why not? and in what respect would the constraint then*
>
> *be less 'serious'?), and the work—novel or poem or play—written under*
>
> *constraint and which can reach the dimensions of Life a User's Manual*
>
> *and its very real gravity?*]

Arnaud here does not deny the playful aspects of their work, but rather demands a reconsideration of the standard categories of literary seriousness. There are indeed 'serious' Oulipian novels, but that is not the primary work of the Oulipo and any aspect of the latter, even in its ludic tendency is not thereby rendered worthless. It is to open up an area of exploration in which the humorous is not simply disdained as unserious, a direct inheritance, it would seem, from the spirit of 'pataphysics. It is also important to distance the wider critical seriousness of the import of a particular artistic practice from its narrowly-defined apparent, or self-conceived seriousness. In his recently published book on the Oulipo's intellectual context, Dennis Duncan asks, 'how then to write an intellectual account of these *farceurs*? Will it not be, at best, a fundamental misunderstanding, at worst, an act of bad faith?'[116] Duncan goes on to affirm the Oulipo's value as lying in a certain *lightness*, drawing on a statement by Calvino: 'were I to choose an auspicious image for the new millennium, I would choose . . . the sudden agile leap of the poet-philosopher who raises himself above the weight of the world, showing that with all his gravity he has the secret of lightness.'[117] Yet it does not betray this 'lightness' or agility to take the Oulipo's work seriously in a *critical* sense. What is at stake here is their work's significance precisely in its socio-historical context; that is, both how it responds to the rational conditions of the

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[116]Duncan, *The Oulipo*, p.8.
[117]Cited in Ibid., p.10.

time, by a kind of inappropriate absorption of mathematical method into literary composition, and how it finds something new from that unlikely crossing. It might even, in that sense, be that unseriousness is the necessary characterisation of an artistic activity that both works with the formal conditions that it opposes, and yet whose purposive agenda it nevertheless attempts to make futile.

Consider Queneau's observation that 'topology and the theory of numbers sprang in part from what used to be called "mathematical entertainments," "recreational mathematics".'[118] Reflecting on this, Roubaud notes: 'Oulipian work is regarded as fundamentally innovative, as being situated on the cutting-edge, that it cannot avail itself of any so-called serious finality of any of the criteria serving today in scientific domains to eliminate research that unduly jostles accepted perspectives.'[119] It is possible then to extend this assessment to an aesthetic-critical perspective, in particular with the question of mathematics. In breaking with what *should* be done with deductive form, that is, in arbitrarily applying it outside its 'legitimate' domain, Oulipian practice both takes it wholly seriously in the rigour of its formal integrity (which is something that Surrealism is more inclined to attempt to dissolve), but not so much in its methodological propriety. This recourse to mathematical rigour owes a lot to the axiomatic project of Nicolas Bourbaki, which will be the subject of the next chapter.

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[118]Queneau, 'Potential Literature,' p.52.
[119]Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.85.

2. Bourbaki and Mathematical Method

The Oulipo has never been simply a *literary* group. Indeed, its founding members came with a diverse range of specialisms, spanning scientific or mathematical backgrounds as well as literary or poetic. As Raymond Queneau tells it, the foundation of the group stemmed from a discussion with his friend and Oulipian co-founder François Le Lionnais regarding difficulties in formulating 'naturally' his *Cent mille milliards de poèmes*.[1] Le Lionnais and Queneau were keen amateur mathematicians, and its seems that the combinatory structure of the *CMMP*, as a specifically mathematical problem, was the concretisation of a possibility that had been in the minds of both figures since youth: Le Lionnais recounts, 'we discovered that our routes had been rather similar, and that the idea of injecting original mathematical notions into novelistic or poetic creation had come to us at about the same time, after secondary school, during our

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[1] 'J'avais écrit cinq ou six des *Cent mille milliards de poèmes,* et j'hésitais un peu à continuer, enfin je n'avais pas beaucoup le courage de continuer, plus cela allait, plus c'était difficile à faire naturellement, quand j'ai rencontré Le Lionnais, qui est un ami, et il m'a proposé de faire une sorte de groupe de recherches de littérature expérimentale. Cela m'a encouragé à continuer mes sonnets; ce recueil de poèmes est, en quelque sorte, la première manifestation concrète de ce Groupe de recherches.' Queneau, *Entretiens avec Georges Charbonnier*, p.116. ['*I had written five or six of the* Cent mille milliards de poèmes, *and I was hesitating a little to go on, that is, I had not much spirit to continue, the more it went on, the harder it was to do naturally, when I met Le Lionnais, who is a friend, and who suggested a sort of research group of experimental literature. That encouraged me to continue my sonnets; the collection of poems is, in some way, the first concrete manifestation of the research group.*']

university studies.'[2] It thus seems reasonable to use the words from the title of Le Lionnais's essay describing these events as a description of the Oulipo itself, as the 'amalgam of mathematics and literature'. While the seemingly unlikely combination of these two fields may not adequately characterise the entirety of the Oulipo's work, it was clearly a distinctive feature in the early years—even eleven years after the group's founding, Queneau is reported by Le Lionnais as proposing, for a definition of the Oulipo 'le critère suivant: que le structure utilisée soit mathématique (pas nécessairement numérique).'[3] This 'amalgam' retains a strangeness because it is not so much that mathematics that is being 'poeticised'—by appeals to the beauty of structural proportions or relations for example—as that literature, or more specifically its constructive process, is being mathematised. In fact, I will argue, it is the apparent perversity of this crossing of disciplines, critically interpreted, that gives the key to the Oulipo's significance in modernity. Inasmuch as modern art is still problematised in terms of its autonomous status, it would appear that the mathematisation of art's construction would be a foremost territory in which that status is contested.

There are Oulipian forms that are explicitly mathematical: the *Eodermdrome*, a structure in graph theory and introduced to the Oulipo by Claude Berge, is a prime example of such a device. The structure is represented as five nodes at the vertices of a pentagon; these nodes may then be traversed with a single line in such a way that the line between any two given nodes is traced only once, a demand which offers 123 different permutations for its fulfilment. The name 'Eodermdrome' is itself the

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[2]François Le Lionnais, 'Raymond Queneau and the Amalgam of Mathematics and Literature,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.77.

[3]*Fonds Oulipo. Dossiers mensuels de réunion (1960–2010). 1971. Août 1971*, `https://gallica.bnf.fr/ark:/12148/btv1b100101296/` (accessed August 20, 2019). ['...*the following criterion: that the structure used be mathematical (not necessarily numerical).*']

result of the letters EODRM, placed at the vertices and processed accordingly (see figure 2.1). The form was originally posed as a challenge to choose five letters that can be arranged such that a meaningful (or at least lexically legitimate) expression or expressions result: for example 'SCARE' will yield 'SCARCER SEAS'.[4] But in Oulipian terms, the device also functions at higher levels to order words, sentences, themes and so on as constraining forms for literary composition.
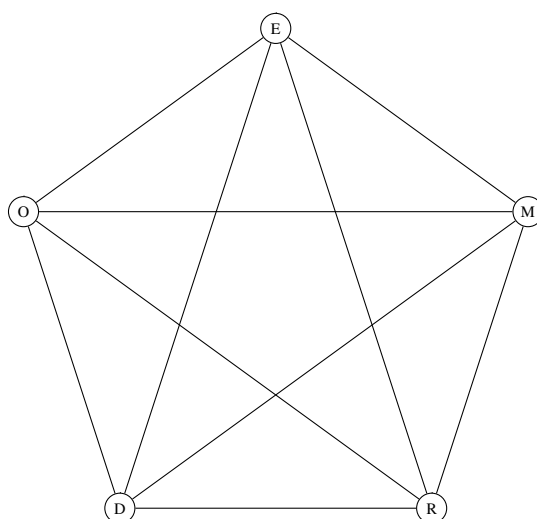
Figure 2.1: An Eodermdrome

Mathematically derived forms are also at the heart of what is probably the most famous novel to emerge from the Oulipo's members, Georges Perec's *La Vie mode d'emploi* (*Life a Users Manual*). The work is of course a highly significant piece of literature in its own right (and is also thematically rich regarding the question of futility, the completion or non-completion of puzzles and the totality of forms), but it is only really with description of the work's constructive process, which was revealed after

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[4]Oulipo, *Oulipo Compendium*, p.144.

publication, that the richness of Perec's processual adoption of mathematical form is revealed.[5] The major structuring devices in the work are the *Knight's Tour*, a mathematical problem where each square of a chess board must be visited once and only once using only the knight's moves; and the 10x10 *Graeco-Latin bi-square*, a mathematical structure where two sets of elements are ordered in a matrix pattern such that no pair of elements is repeated in any one row or column.[6] Perec used the bi-square to distribute lists of elements in order to determine the narrative and descriptive elements in the book (the 'schedule of obligations') for each of the rooms of a Parisian apartment block, arrayed as a 10x10 grid. The ordering of the chapters was then determined by the Knight's Tour.[7] Also testament to the optimism of their amalgamating project, François Le Lionnais, in the group's first collective publication, offers a 'Boîte à idées', a large list of more or less developed mathematical structures that, he proposes, may be used in literary composition. He notes at the end that 'all that remains is to get to work. The Oulipo has taken this to heart. At the rate of just one notion per monthly meeting, the above list, which is in no way intended as restrictive, could provide material for the agendas of at least a hundred meetings to come.'[8]

Many other constraints, including the lipogram (perhaps their best known, though not actually invented by the Oulipo),[9] are describable in accordance with the operations

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[5]See Perec, 'Quatre figures.'

[6]The bi-square had been contemplated in the Oulipo since 1967. See Claude Berge, 'Letter to Jacques Roubaud & Georges Perec,' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Daniel Levin Becker (San Francisco: McSweeney's, 2018).

[7]This is, of course, only a very simplified overview of the structures. An extensive analysis is provided in David Bellos, *Georges Perec: A Life in Words* (London: The Harvill Press, 1993).

[8]Le Lionnais, 'Boîte à idées.' A new translation has recently been published as François Le Lionnais, 'Idea Box,' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Daniel Levin Becker (San Francisco: McSweeney's, 2018).

[9]According to Perec, the earliest recorded lipogram dates back to the sixth century BCE. Perec, 'History of the Lipogram.'

of set theory—unions, intersections, differences, products of sets, and it is with these terms of description that the incongruousness becomes clearer. Jacques Roubaud calls this kind of intervention '"structure transport": a set, armed with a given structure, is "interpreted" in a text; the elements of the set become the data of the text; the structures existing in the set are converted into procedures for composing the text, with constraints.'[10]

Given the technological shifts of the twentieth century, and in particular the emergent digital revolution, it would be reasonable to expect that the Oulipo had explored computational aspects of writing—indeed, it is sometimes thought that the Oulipo, by virtue of their engagement with logical and algorithmic structures, were forerunners of the various forms of algorithmic text generation that are common today. Yet this kind of automation is not really the intention. Certainly, in the early years, there was an acknowledgement of a possible value for computers in their researches. Queneau himself noted that 'we regret having no access to machines: this is a constant *lamento* during our meetings.'[11] But despite an offshoot group set up to research this area (ALAMO),[12] the Oulipo itself never pursued it with any great seriousness. Indeed, as already mentioned, in the minutes for the group's early meetings, a wariness of 'mechanical automatism' is indicated, as much as that of the 'psychic automatism' of the Surrealists.[13] Whatever the methods used, the Oulipian project was not directed towards automating the writing process. Thus there is no attempt to replace the figure of

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[10]Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.94.

[11]Queneau, 'Potential Literature,' p.51. See also Paul Fournel, 'Computer and Writer: The Centre Pompidou Experiment,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998).

[12]The *Atelier de Littérature Assistée par la Mathématique et les Ordinateurs* (Workshop for literature assisted by mathematics and computers) was set up in 1980. See Oulipo, *Oulipo Compendium*, p.46. Note that even here the relation is primarily one of 'assistance'.

[13]See Bens, *Genèse de L'Oulipo*, p.146.

the authorial subject with technology—and thus no pretence of computational lyricism as in *Racter's* dubious 1984 text *The Policeman's Beard is Half Constructed*[14]—but rather to finds new forms and configurations that can be worked with. Recall Queneau's statement that the Oulipo's aim is to find 'new forms and structures—to use this slightly learned word—that may be used by writers in any way they see fit.'[15] Take, too, for example, Claude Berge's assertion of the Oulipo's (third) vocation as 'the *transposition* of concepts existing in different branches of mathematics into the realm of words,'[16] and François Le Lionnais's description of Oulipian work as 'injecting original mathematical notions into novelistic or poetic creation.'[17] Significantly, 'novelistic or poetic creation' in itself is not undermined or replaced here, but with the notion of *transposing* or *injecting* mathematics, we see something new, something external brought into it. The basic sense of the separation of these two domains, such that it is a decision that brings them together, rather than (as we have seen Adorno affirm) an immanent development, is one of the key features of the Oulipian project. The extrinsic character of mathematics in literary production is acknowledged.

In this crossing of mathematics and literature, the Oulipo follow, above all, the model of Nicolas Bourbaki—a mathematical collective established in the mid-thirties, but waning by the seventies—whose own project developed from an attempt to ground

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[14]The cover promises 'A Bizarre and Fantastic Journey into the Mind of a Machine'. It is dubious (though not uninteresting) in the sense that it claims to have been 'written' by computer—structuralist analyses not withstanding—rather the pseudo-randomised assemblage of fragments and templates written by another—an identifiable non-computer, that is, the programmer. The full source code and resources behind the book were never made public. Racter, *The Policeman's Beard is Half Constructed* (New York: Warner Books, 1984).

[15]Queneau in conversation with Georges Charbonnier, cited in Jean Lescure, 'Brief History of the Oulipo,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.38.

[16]Claude Berge, 'For a Potential Analysis of Combinatory Literature,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.116.

[17]Le Lionnais, 'Raymond Queneau and the Amalgam of Mathematics and Literature,' p.77.

the totality of mathematics not on anything intuitive, but rather on a small number of highly abstracted, formal axioms. Oulipism then can be seen, in some sense, as the transposition of a Bourbakist approach into literature. However, the following excerpt, from 1991, indicates Jacques Roubaud's acknowledgement of this not entirely straightforward line of methodological adoption:

13. *When the Oulipo was conceived, Bourbaki provided a counter-model to the Surrealist group*.

14. We can also say that the Oulipo is an homage to Bourbaki and an imitation of Bourbaki.

15. At the same time, it is no less obviously a parody of Bourbaki, even a profanation of Bourbaki.

16. Bourbaki's initial plan—to rewrite mathematics in its entirety and provide it with solid foundations using a single source, set theory, and a rigorous system, the axiomatic method—is at once serious, admirable, imperialistic, sectarian, megalomaniac and pretentious. (Humour has not been one of its prime characteristics.)

17. The Oulipo's plan, which 'translates' Bourbaki's objectives into the domain of the arts of language, is no less serious and ambitious, but it is non-sectarian and not convinced of the validity of its proceedings to the exclusion of all other approaches.

18. I shall not pursue the comparison of the two groups any further.[18]

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[18]Roubaud, 'The Oulipo and Combinatorial Art,' p.38.

A homage, imitation, parody and even profanation of Bourbaki[19]—as stated above, Roubaud does not develop the comparison, but what is clear from this is an ambivalence in the meaning of the transference of mathematical form. The Oulipo aims to reproduce, in literary method, the rigour of structuring a field to its core relations, its axioms and deductive procedures. Clearly literary writing is not generally thought to work from axioms and while deduction may feature in the genre of the detective story—and indeed, in certain cases, be quite rigorously formal—here the logic is inherent to the genre and the determination of final content, rather than an abstracted mathematical ground in the process of composition. In the Oulipian formulation, writing under constraint is not the determination of structures that should be manifest in the end work, but rather the methodology of writing in accordance mathematical deduction. Roubaud continues: 'constraints are presented in explicit and systematic form and can be notated in the language of mathematical logic. Oulipian texts thus become the literary consequences of these axioms, according to the rules of deduction.'[20]

These bold declarations draw out the differences between literary and mathematical procedure. Literary process would not typically be seen as a form of deduction, based on axioms and formal relationships, and yet this is the model of mathematics that is the key provocation in the Oulipian project. With this introduction of mathematics to the literary work, the basic incongruity of the initial juxtaposition is, crucially, maintained, rather than synthesised in accordance with the values of one or the other of its aspects—this is why it appears perverse, playful or even futile. The question then arises: what is the critical import of this move? Mathematics has, arguably, the highest

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[19]Roubaud gives a similar statement in another text, and gives his source: 'to take up Octavio Paz's axiom: Homage and Profanation are the two breasts of literature.' Jacques Roubaud, *Poetry, etcetera: Cleaning House*, trans. Guy Bennett (København: Green Integer, 2006), p.209.

[20]Roubaud, 'The Oulipo and Combinatorial Art,' p.41.

status, in terms of rigour and self-sufficiency, in the scientific thought of modernity: it proceeds—apparently—in abstraction from its possible applications, and yet the range of those applications has expanded greatly during this period. Whatever the ultimate truth of mathematics, its role in society is not an eternal necessity of 'nature', nor of human rationality, but is in fact development of the historical contingency of rationality. If it is possible to shed light on this contingency, then mathematics as a structure of human necessity comes into question. It is in this context that Oulipian methods, in their incorporation of the image of logical rigour and abstraction, take on a particular relevance in the attempt to reveal and comment on these contingent conditions of rationality, conditions that in turn give the possibility of the Oulipo's own development.

Specifically in an aesthetic context, the question of such methods is only rendered more acute where they operate in a domain where mathematics and the logic of deduction would seem to be repressive rather than provocative of any critically valuable artistic production. It is not that there is nothing mathematical in the artwork of course; even Adorno admits that 'the aesthetic of pleasure, once free of crude materiality, coincides with mathematical relations in the artistic object, the most famous in the plastic arts being the golden mean, which has its musical correlative in the overtone relations of musical consonance.'[21] But what Adorno objects to—where, for example, he states that 'there is absolutely no reducing the concept of form to mathematical relations'[22]—and what is at stake in the Oulipian use of mathematics, is the 'pregiven' nature of the mathematical relations, the extent to which they are determining, a priori, the constructive conditions of the work. The question therefore is: how is mathematics being adopted here in a way that is still critically interesting rather than nullifying? For this,

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[21] Adorno, *Aesthetic Theory*, p.66.
[22] Ibid., p.195.

it is necessary first to consider the condition of mathematics in the twentieth century more broadly, and more particularly the kind of mathematical approach adopted by the Oulipo.

Modern Mathematics

The nineteenth and early twentieth century saw an increasing abstraction and autonomy of mathematics as a discipline, or rather *disciplines*—a key characteristic of the mathematics of this period was in fact the separation into increasingly distinct fields, each with its own system of terminology and methodology.[23] As these branches had become disparate from the horizon of mathematical unity, they had also gained a greater autonomy and abstraction from empirical or intuitive foundations. The nineteenth century saw decisive moves away from the intellectual safety of intuitive self-evidence in mathematics, with the emergence of non-Euclidean geometry, higher-dimensional spaces and perhaps most challengingly, Georg Cantor's work on transfinite numbers. Such developments seemed to have no direct 'meaning' that could be grounded in experience of the world or established logical structures. Mathematical formulations could not then be seen as the 'ideal form of physical happenings and objects',[24] as previously conceived. Indeed, because of such abstraction, these developments were not universally accepted, even in the mathematical establishment. With the 'truth' of mathematics no longer secured by immediate self-evidence, if indeed the question of truth was any longer even relevant, the question of the foundations of

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[23]For this historical development I draw largely on Morris Kline, *Mathematical Thought from Ancient to Modern Times* (Oxford: Oxford University Press, 1972), particularly chapters 43 and 51.

[24]Ibid., p.1028.

mathematics presented itself with greater urgency.

The project of securing the consistency of mathematics was pursued with renewed vigour from the end of the nineteenth century onwards (albeit, it should be added, without extending to the unification of *all* branches under the same axioms and principles that would later be attempted by Nicolas Bourbaki). In the early twentieth century, three dominant 'schools' of mathematical foundations arose. The 'logistic' school, drawing on the work of Gottlob Frege, and then pioneered primarily by Russell and Whitehead, attempted to ground mathematical reasoning in principles of formal logic and set theory. Meanwhile, the 'intuitionists' retained the insistence that mathematics should be directly comprehensible and intuitively grounded in the structures of human thought, thus rejecting the legitimacy of the more challenging developments of the period. For this reason, Leopold Kronecker rejected any analysis not reducible to integer relations, even dismissing irrational numbers as 'non-existent', while certain antinomies of set theory were seen by Herman Weyl as a 'punishment' for the 'sin' of an overextension of logical principles.[25] In direct opposition to the intuitionists, and most directly influential on Bourbakist thought, David Hilbert's 'formalist' school maintained a simultaneous treatment of logic and mathematics whereby the only objects of mathematical reasoning are its symbols, which have no independent 'meaning', with mathematics thus proceeding solely from axioms, by deductive principles. The axioms themselves however still remain arbitrary. Thus through the 1920s Hilbert and his students attempted a system of 'metamathematics', an attempt to found an 'indubitable' logic (which in doing so came rather close, ironically, to falling back on intellectual intuitions for their source). Although this project was effectively killed off by Gödel

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[25]Ibid., p.1201.

in 1931, whose 'incompleteness' theorems stated that no axiomatic system can prove its own consistency, formalism would be taken up again by Nicolas Bourbaki in the 1930s.

For some mathematicians, the autonomy of their discipline(s) from directly empirical or intuitive constraints brought a new freedom to their enquiries. Cantor, for example, saw mathematics as bound only by its own immanent conceptual reality (rather than any empirical demands), writing in 1883 that 'mathematics is entirely free in its development and its concepts are restricted only by the necessity of being noncontradictory and co-ordinated to concepts previously introduced by precise definitions. ... The essence of mathematics lies in its freedom.'[26] Similarly (though some four decades later), Hilbert affirmed his axiomatic method as 'logically unassailable and at the same time fruitful; it guarantees thereby complete freedom of investigation.'[27]

The assertion in these statements of freedom in a conceptual domain of deductive rigour, resonates of course with a core theme of early twentieth-century avant-gardes—social, political and individual freedom, and particularly, the possibility of emancipatory novelty. Cantor's 'precise definitions' and Hilbert's 'logical unassailability' might seem, however, not to allow much scope for the 'new' in such terms. Hilbert—his statement is from a 1922 article—runs counter, in particular, to the concurrent Surrealist rejection of conscious, deductive rationality as the *closure* of the emancipatory imagination. Inasmuch as the Oulipo reacted against the *irrationalism* of the Surrealists, as I described in chapter 1, it is thus easy to see why Roubaud talks of Bourbaki (who inherits this formalist mathematical tradition) as the 'counter-model

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[26]Cantor, cited in ibid., p.1031
[27]Hilbert, cited in ibid., p.1027.

to the surrealist group' for the Oulipo. But 'logical unassailability' here must take on a slightly different flavour.

Evidence of the influence of Hilbert's formalism on their thinking is found Raymond Queneau's parodic, and perhaps pataphysical, 'Foundations of Literature'. Drawing on Hilbert's alleged reflection that 'instead of points, straight lines and planes, it would be perfectly possible to use the words tables, chairs and tankards,'[28] Queneau thus chooses to replace the terms 'points', 'lines' and 'planes', respectively by 'words', 'sentences' and 'paragraphs' and explore the deductive necessities that emerge for language and its constructions. The work itself (or its axiomatic grounds) might be described as a variety of the Oulipian method of 'homosyntaxism'; that is, the prescribed use of an arbitrary text's syntactic structure in the construction of a new one—and in this case, since the source text is itself mathematical, the transposition of mathematical methods works at two levels.[29] It at once demonstrates the absurdity of arbitrary formalist constructions applied in a semantic domain, while also suggesting provocative conceptions of linguistic construction in the contortions that thought must go through in the attempt to justify these axioms. For example: 'II, 2—*If two words are present in a sentence, there exists at least one other word so situated that the second word appears between it and the first word,*' which Queneau acknowledges, 'may occasion surprise.' He goes on to posit, 'following the example of projective geometry, "imaginary words" and "infinitesimal words."'[30] Clearly, mathematicians' willingness to con-

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[28] Hilbert, quoted (without written source) in Raymond Queneau, 'The Foundations of Literature,' in *Oulipo Laboratory: Texts from the Bibliothèque Oulipienne*, trans. Harry Mathews (London: Atlas Press, 1995), p.3. The statement is often attributed to Hilbert, but was most likely spoken rather than written, as it does not appear to be in any of his published works; other citations do however support the general idea.

[29] See Oulipo, *Oulipo Compendium*, pp.159–60. Here it is described as a 'method of translation'.

[30] Queneau, 'The Foundations of Literature,' p.13.

sider as legitimate objects of analysis the imaginary and infinitesimal (we might also think of imaginary numbers and calculus) is here the object of 'parody and homage', to recall Roubaud's words. The adaptation here confronts linguistic proprieties and the implicit demands of theoretical 'good sense', and, by introducing a deductive schema that is not language or literature's own, with a straight-face, gives an indication of the peculiar consequences of arbitrary structures that claim universality being taken at their word.

While the preceding discussion of mathematics has presented the discipline in its own terms as if it were a largely autonomous development, it is also undoubtedly the case that mathematical thought has had far-reaching social involvements in modernity. This is, paradoxically, not unrelated to its claim to self-sufficiency and rigour, which internal coherence bolsters its role as the privileged language of a scientifically under- stood modern world. But if mathematics is only considered as a self-contained study of eternally necessary and consistent forms, this also needs to be questioned more broadly in terms of the socio-historical and material contingencies of its developmen- tal context, contingencies which the mathematised understanding may then be seen to regularise as if its own structures were original rather than derived. The apparently occluded inversion in this process requires critical interrogation if, as Adorno states, 'the metaphysics of numbers exemplarily effects the hypostasis of order with which spirit so thoroughly weaves a cover over dominated things, until it seems as though the fabric were itself what is concealed.'[31] I do not intend to make any positive assertions about a social determination here for mathematics as such, or any other address to the fundamental 'being' of mathematics: even to take on the question in these latter terms

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[31]Theodor W. Adorno, *Against Epistemology: A Metacritique (Studies in Husserl and the Phe-nomenological Antinomies)*, trans. Willis Domingo (Cambridge: Polity, 2013), p.9.

would be an implicit reinforcement of the uncritical acceptance of a mathematical reality whose essence is somehow to be discovered. It is important instead to see how mathematics—or rather a certain image of mathematics, or mathematised thought—figures, in the critical framework of thinkers such as Adorno, as a socio-historically contingent structure that presents itself as one of eternal veracity. For Adorno, this thinking has its origins in Greek philosophy, but more recent developments can be interpreted to follow the same priority of method over matter. The entanglements of the modern idea of science with capitalist social formation, and with the commodity form in particular, are also notable. Thus, for examples, Georg Lukács argues that the ideal of natural science, 'when it is applied to society … turns out to be an ideological weapon of the bourgeoisie. … It must think of capitalism as being predestined to eternal survival by the eternal laws of nature and reason.'[32] It is from within these conditions of thought that any subversive conception or application of mathematical reason must respond critically.

In Horkheimer and Adorno's *Dialectic of Enlightenment*, whose dual thesis famously states that myth is already enlightenment and that enlightenment reverts to myth, mathematical rationality is the model form of the kind of abstract, instrumentalised thought that has come to dominate society. Enlightenment is totalitarian, they write, because it refuses anything that its own system has not formally pre-figured. The system of equivalences which, for Horkheimer and Adorno, characterises mathematised thought, as it does commodity exchange, is thus the *rule* of this system of domination. They write:

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[32]Georg Lukács, *History and Class Consciousness: Studies in Marxist Dialectics*, trans. Rodney Livingstone (London: Merlin, 1971), pp.10–11.

> When in mathematics the unknown becomes the unknown quantity in an
> equation, it is made into something long familiar before any value has
> been assigned. Nature ... is what can be registered mathematically; even
> what cannot be assimilated, the insoluble and irrational, is fenced in by
> mathematical theorems. In the preemptive identification of the thoroughly
> mathematised world with truth, enlightenment believes itself safe from the
> return of the mythical. It equates thought with mathematics. The latter is
> thereby cut loose, as it were, turned into an absolute authority.[33]

Doubtless this seems a rather narrow conception of mathematics, but at stake here
is not a *positing* of mathematics itself as having any particular determination, but rather
a development of thought that is mathematised. (This is, in any case, presented in an
account that is itself something of a mythic narrative.) It is thus reasonable to con-
sider this an image of mathematical thought that is prevalent in modernity's own self
conception, or more precisely a critical diagnosis of modern thought's own mistaken
self-conception. What is at stake here is that mathematised thought has itself become
myth, in the terms of Horkheimer and Adorno's broader thesis: 'mathematical pro-
cedure became a kind of ritual of thought. Despite its axiomatic self-limitation, it
installed itself as necessary and objective: mathematics made thought into a thing—a
tool, to use its own term.'[34] It is arguable in fact that what is subjected to instrumental-
isation here is not just the administration of society, but even a restricted conception of
mathematical activity as pursued by mathematicians—and the latter's own diversity of
self-conceptions is certainly not uniformly in accord with an idea of mathematics as a

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[33]Horkheimer and Adorno, *Dialectic of Enlightenment*, p.18.
[34]Ibid., p.19.

tool of enlightenment.[35]

Although Horkheimer and Adorno's 'enlightenment' is an ongoing process—and they trace it back to Greek thought—a revealing stage in this is associated with the more common epochal use of the term. That is, in the shift in scientific reasoning brought about by Galileo, and specifically, in the openings of the mathematisation of 'nature'. This shift is significant because it marks something of a conceptual revolution such that it is now virtually impossible to see beyond the framework of thought that it inaugurated. For Husserl, while ancient Greek thought had idealised mathematical forms, it is only with Descartes that mathematics was addressed to 'universal tasks'. Mathematical geometry thus becomes the analytical access to an 'ideal space', to which belongs

> ... a universal, systematically coherent a priori, an infinite, and yet—in spite of its infinity—self-enclosed, coherent systematic theory which, proceeding from axiomatic concepts and propositions, permits the deductively univocal construction of any conceivable shape which can be drawn in space.[36]

With Galileo this mathematisation took on the role of the underlying 'language' of the natural world. The universal mathematical formulation of the world allows a regularity of prediction: as Husserl observes, prefiguring Horkheimer and Adorno's

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[35]Leopold Kronecker, for instance, grounds mathematics in the intuition of integer forms which he considers 'the work of God', rather countering the idea of mathematics as the keystone of enlightenment's self-narrative of desacralisation. Cited in Kline, *Mathematical Thought from Ancient to Modern Times*, p.1197.

[36]Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, trans. David Carr (Evanston: Northwestern University Press, 1970), p.22.

thesis, because the underlying form has already been determined, 'one can "calculate"
with compelling necessity, on the basis of given and measured events involving shapes,
events which are unknown and were never accessible to direct measurement.'[37]

The method that Galileo pioneered is now the dominant conception of scientific
understanding, but his mathematisation of nature was, in his own period, a remark-
able step. Husserl notes the '*strangeness* of his basic conception in the situation of his
time … The whole of infinite nature, taken as a concrete universe of causality—for
this was inherent in that strange conception—became [the object of] a *peculiarly ap-
plied mathematics*.'[38] Husserl recognises here an aspect of modern science, and with
it the modern world-view: the (historical) contingency of this particular form of ra-
tional apprehension. The *peculiarity* of the *application* of a mathematical conception
has indeed become second nature and thus no longer peculiar, that is to say it is 'the
surreptitious substitution of the mathematically substructed world of idealities for the
only real world,'[39] but it is, again, a conception that has lost its 'original' meaning.[40] I
stress the terms 'peculiar' and 'application' because there is here an intimation of the
critical import of the similarly *peculiar* application of mathematics to literary process
with the Oulipo, the difference of course being that in the latter case it is visible as
such, with the potential critically to indicate a wider strangeness whose perception has
been lost.

The latter day result of this revolution is, for Husserl, writing of the mathematical
sciences of the later nineteenth century, a 'positivistic reduction' and 'loss of meaning

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[37]Ibid., p.33.
[38]Ibid., p.37.
[39]Ibid., pp.48–9.
[40]'Here the original thinking that genuinely gives meaning to this technical process and truth to the
correct results … is excluded.' Ibid., p.46.

for life', even while he concedes that scientific disciplines are 'unimpeachable within the legitimacy of their methodic accomplishments.'[41] The *crisis*, for Husserl is that positivist science, or rather *sciences*, have become fragmented and abstracted from more fundamental or meaningful questions and human values—a 'world understood as the universe of mere facts.'[42] What are given up are 'precisely the questions which man, given over in our unhappy times to the most portentous upheavals, finds the most burning: questions of the meaning or meaninglessness of the whole of this human existence.'[43] This is to say that the science that is given over to such a mechanistic conception of 'facts' has no awareness of its own development from experiential 'life-world' to 'second' nature, and offers no direction for action.

This move towards an instrumentalised worldview, one in which, beyond its practical and technological achievements, science cannot answer for its own meaning represents what Max Weber calls the 'disenchantment of the world', where tools are used in ignorance of what they are[44] and more fundamental questions of meaning are not addressed.[45] From a sociological perspective, for Weber, this provides the conditions for capitalist expansion which is 'essentially dependent on the calculability of the most important technical factors.' This may in turn mean that such sciences receive 'important stimulation from these capitalistic interests,' but for Weber, 'the origin of Western

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[41] Ibid., p.5.

[42] Ibid., p.9.

[43] Ibid., p.6.

[44] 'It is enough for us to know that we can "count on" the behaviour of the streetcar. We can base our own behaviour on it. But we have no idea how to build the streetcar so that it will move. The savage has an incomparably greater knowledge of his tools.' Max Weber, 'Science as a Vocation,' in *The Vocation Lectures*, ed. David Owen and Tracy B. Strong, trans. Rodney Livingstone (Indianapolis: Hackett, 2004), p.12.

[45] Weber here draws on Tolstoy: 'Science is meaningless because it has no answer to the only questions that matter to us: "What should we do? How shall we live?"' Ibid., p.17.

science cannot be attributed to such interests.'[46] That capitalism itself is more funda-
mental to (rather than contingent upon) this condition of modern rationality is proposed
by Lukács. He holds that it is precisely the conditions of capitalist domination, and
most specifically the universality of the commodity form, that have led, since the late
eighteenth century, to an abstraction of thought from material reality. For Lukács, the
fetishisation of the commodity form is the central determinant in this condition, hidden
behind the 'veil of reification.'[47] Lukács here draws on Marx's concept of fetishisation,
but dates the crisis back to the origins of bourgeois science with Kant's postulation of
the inaccessible thing-in-itself, an abstraction of the intellectual from material. The
concept of reification—the making of a social relation into an apparently real *thing* or
attribute—also draws on the work of Georg Simmel, although Lukács complains that
the latter's account is divorced from the 'real capitalist foundations.'[48] What is dom-
inating here is the levelling influence of a calculative rationality, one comprehending
only quantitative rather than qualitative relations, thus:

> The distinction between a worker faced with a particular machine, the en-
> trepreneur faced with a given type of mechanical development, the tech-
> nologist face with the state of science and the profitability of its application
> to technology is purely quantitative; it does not directly entail *any quali-*
> *tative difference in the structure of consciousness.*[49]

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[46] Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. Talcott Parsons (London: Unwin University Books, 1930), p.24.

[47] Lukács, *History and Class Consciousness*, p.86.

[48] Ibid., p.95. Simmel describes the money form as 'the purest reification of means, a concrete instrument which is absolutely identical with its abstract concept; it is a pure instrument.' It fosters intellectual abstraction and quantitative, 'calculative functions' of thought, such that the 'cognitive ideal is to conceive of the world as a huge arithmetical problem, to conceive events and the qualitative distinction of things as a system of numbers.' Georg Simmel, *The Philosophy of Money*, trans. Tom Bottomore and David Frisby (London: Routledge, 2011), pp.211,481.

[49] Lukács, *History and Class Consciousness*, p.98.

Adorno notes, with regard to Weber's descriptive sociology, that such abstraction did not 'come into being in the head of a sociological theoretician' but is 'really the specific form of the exchange process itself, the underlying social fact through which socialisation first comes about.'[50] This concept of 'real abstraction', first systematically developed by Alfred Sohn-Rethel in the early twentieth century, offers probably the most strongly materialist derivation of the crisis of modern rationality. Where Kant sees the 'fact' of reason as eternal and necessary (and in the same way the classical economists, such as Adam Smith, regard the system of bourgeois economics as descriptive of real and necessary human relations), Sohn-Rethel pursues an epistemological critique of modern intellectuality and the separation of intellectual and manual labour.

Sohn-Rethel contends that the 'exchange relation' is the primary social fact upon which the conceptual apparatus of modern society rests. It is the activity of exchange itself which is the source of the conceptual abstractions of the intellect. This 'real abstraction' in exchange is, following Marx, precisely opposed to use, since the two are mutually exclusive at their point of operation: 'wherever commodity exchange takes place, it does so in effective "abstraction" from use. This is an abstraction not in mind, but in fact.'[51] Sohn-Rethel here reverses the more usual understanding of abstraction as a cognitive activity with regard to concrete objects: here the action is abstract, even while the engaged parties are in fact ignorant, since they are, rather, 'supposed to be

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[50]'The abstraction we are concerned with is not one that first came into being in the head of a sociological theoretician who then offered the somewhat flimsy definition of society which states that everything relates to everything else. The abstraction in question here is really the specific form of the exchange process itself, the underlying social fact through which socialisation first comes about.' Theodor W. Adorno, *Introduction to Sociology*, ed. Christoph Gödde, trans. Edmund Jephcott (Stanford: Stanford University Press, 2000), p.31.

[51]Alfred Sohn-Rethel, *Intellectual and Manual Labour: A Critique of Epistemology*, trans. Martin Sohn-Rethel (London: Macmillan, 1978), p.25.

occupied with the use of the commodities they see, but occupied in their imaginations only.'[52] As a result of the suspension of any qualitative change in the object that exchange presumes, 'time and space rendered abstract under the impact of commodity exchange are marked by homogeneity, continuity and emptiness of all natural and material content, visible or invisible.'[53] Along with this the concepts of motion and matter become abstract, in abstract time and abstract space. Similarly, the exchange process mandates the identity of the exchanged entity in a singular world. These conceptual abstractions derived from the real abstraction of exchange—'abstract time and abstract space, abstract matter, quantity as a mathematical abstraction, abstract motion, etc.'— become the 'categories of intellectual labour', the formal conditions of thought, such that any natural event conforms: 'all observable phenomena are bound to fit.'[54]

What is at stake here then, for our critical reading of the Oulipian use of mathematical forms in literary production, is whether the totalising frame of rationality that militates against the contemplation of its own conditions of possibility can be critically revealed in its contingency. The mathematical in this is the underlying form of this calculative reason, the demand for formal equivalence without regard to particularity of content. Mathematics considered in this sense, that is one of deductive reason, of pre-formed patterns, is thus the antithesis of any *art* that claims autonomy in modern society. Such rational determination would seem to need to be avoided in the production of the artwork if it is, on the one hand, to produce anything other than the ever-same, and on the other, to offer any insight into the limitations of this social condition rather than be yet another product of it.

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[52]Ibid., p.26.
[53]Ibid., p.48.
[54]Ibid., p.73.

Mathematics and Artistic Production

Is there any relationship then that mathematical form can have critically with artistic production? Is there any mode of artistic production that is mathematically informed but not dominated? Certainly the loss of meaning engendered by rationalisation and the attendant domination had, at least by Adorno's diagnosis in 1958/59, become even more acute. He writes that 'both the awareness of a principle that gives meaning to life in an absolute sense and the concrete hope that people will thus gain control of themselves have faded to such a degree that substantiality no longer has the power to carry art as something objectively binding.' Adorno's reference point here is the period of Expressionism, an era in which 'the horizon of experience was incomparably more open to the assumption of an aspect of meaning' than Adorno's time of writing here (the late 1950s), such that any similar Expressionistic attempts at this time would be 'powerless'.[55] Could there therefore be an artistic production that uses dominating form in such a way as to undermine it? These questions are pertinent for Oulipian method because the Oulipo are, on the face of it, in their practice, adopting forms in the 1960s that are more usually associated with the instruments of a neutralising rational order that would seem incompatible with a critically free art. Avant-garde movements have of course attempted to resist this order, and with it, indeed, the status of art itself in its claimed social autonomy—Dada and Surrealism most obviously, as I have described in chapter 1—while other movements or groups such as the Bauhaus instead pursued an artistic model that, rather than refusing the technological means of the era, attempted to repurpose them in socially progressive ways. Walter Gropius, for

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[55] Adorno, *Aesthetics: 1958/59*, pp.75–6.

example, declared that the school's students should be 'conscious of the age they were living in' and trained to design 'type-forms which would be the direct expression of that consciousness.'[56]

In Adorno's aesthetic theory however, while the social domination of rational form is to be critically resisted, it is not the case that rational forms are simply the antithesis of art. Since art bears relations to its conditions of production, those of the abstractions of modernity will find their manifestation in the modern art work. 'New art', Adorno writes, 'is as abstract as social relations have in truth become. … The spell of external reality over its subjects and their reactions has become absolute, the artwork can only oppose this spell by assimilating itself to it.'[57] The modern artwork, for Adorno, bears a mimetic relation to the abstractions of society, that is to say, in the respect that it breaks down the subject-object relation to the world by a non-conceptual 'affinity', aspects of that world are incorporated into the work in a way that could not be discursively conveyed. But the artwork, as a construction, is also the product of rational construction, that is, something whose end is determined. It thus bears a tension between its mimetic and rational poles, that which escapes discursive accountability, and that which can only be discursively accountable since it is the subjective determination of the work. The danger, from Adorno's perspective, in overtly mathematising the work is that this constitutive tension of the artwork, between mimesis and rationality, is obliterated in the latter's favour. By this means, the work would have conformed to the dominant social model of rationality, instrumentalised: in other words, it takes the

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[56]'The Bauhaus felt it had a double moral responsibility: to make its pupils fully conscious of the age they were living in; and to train them to turn their native intelligence, and the knowledge they received, to practical account in the design of type-forms which would be the direct expression of that consciousness.' Walter Gropius, *The New Architecture and the Bauhaus*, trans. P. Morton Shand (Cambridge, Mass: MIT Press, 1965), p.89.

[57]Adorno, *Aesthetic Theory*, p.42.

form of a commodity therefore, the status of which is the obliteration of the work's own *telos* by its total determination from without.

Whatever the potential 'beauty' of mathematical form in a work (harmonious proportions for example are a commonplace), for Adorno, any analytically identifiable mathematical form in the artwork, if it is to retain any hope regarding its autonomous status, would need to emerge immanently from the material in question (in Adorno's terms, a very broad designation[58] rather than being 'pre-given'). To return to a passage already cited:

> ... on the basis of its formalism, mathematics is itself aconceptual; its signs are not signs of something, and it no more formulates existential judgments than does art; its aesthetic quality has often been noted. Of course, art deceives itself when, encouraged or intimidated by science, it hypostatises its dimension of logical consistency and directly equates its own forms with those of mathematics, unconcerned that its forms are always opposed to those of the latter.'[59]

By virtue of this mathematisation, all of the questions that the work embodies in its constitutive tension would be deductively answerable, the work reduced to mere mechanism. Yet, for Adorno:

> The autonomous law of form of artworks protests against logicality even though logicality itself defines form as a principle. If art had absolutely

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[58] See chapter 4

[59] Adorno, *Aesthetic Theory*, p.188.

nothing to do with logicality and causality, it would forfeit any relation to

its other and would be an a priori empty activity; if art took them literally,

it would succumb to the spell; only by its double character, which pro-

vokes permanent conflict, does art succeed at escaping the spell by even

the slightest degree.[60]

It is against this background that, I am arguing, the Oulipo's adoption of mathemat-

ical structures can usefully be interrogated. How are, for example, the pre-determination

of mathematical functions ('affine transformations, projective transformations, inverse

transformations', to take just three from a list of dozens of mathematical structures

proposed by François Le Lionnais[61]) as productive elements in literary compositional

methods to be understood? Is it the case that the Oulipo's methods are in some sense

a submission to mechanism, a closure of critical-aesthetic potential, or is it possible

that in some sense this mathematical engagement could itself 'convict the status quo

of its irrationality and absurdity'?[62]   And is there an opening onto the possibility of

the new which the formalist conceptions of mathematics, applied to literary method,

might, paradoxically, bring?

To understand what is at stake here, it is necessary to interrogate what kind of math-

ematical model is used by the Oulipo. This is crucial because it is precisely in the fact

of its arbitrariness as a principle, rather than the determination of a desired form that

the work must take as its *end*, that the introduction of mathematics in Oulipian method

gains its critical significance. To uncover the Oulipo's mathematical understanding, it

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[60]Ibid., p.190.

[61]Le Lionnais, 'Idea Box,' p.37.

[62]'Capitalist society hides and disavows this irrationality [of its aims], and in contrast to this, art rep-
resents truth in a double sense; it maintains the image of its aim, which has been obscured by rationality,
and it convicts the status quo of its irrationality and absurdity.' Adorno, *Aesthetic Theory*, p.73.

is important then to look at the work of the pseudonymous collective, Nicolas Bour-baki, an undertaking of formidable mathematical rather than literary formalism that, nevertheless, is one of the Oulipo's most important influences.

Nicolas Bourbaki

The *Association des collaborateurs de Nicolas Bourbaki* were among the most impor-tant figures in French mathematics of the forties and fifties, the period immediately prior to the founding of the Oulipo. Both Queneau and Le Lionnais had direct connec-tions with members of Bourbaki and wrote on their work. Le Lionnais also edited *The Great Currents of Mathematical Thought,* originally published in 1948, which con-tains a number of articles by Bourbaki members and Nicolas Bourbaki 'himself', and is characterised by an 'implicit Bourbakism', in the words of Jacques Roubaud.[63] Al-though the Oulipo do not theorise themselves in overtly Bourbakist terms, Roubaud does note in his autobiographical writings that 'there can be no doubt that, when they founded the Oulipo, Queneau and Le Lionnais, amateur mathematicians that they were, had this group in mind.'[64] Le Lionnais's description of Bourbaki in the introduc-tion to the *Great Currents* serves as a useful initial description of the project, which he describes as 'the vanguard of present-day mathematics':

> In order to disentangle the meaning of the totality of mathematics, we
>
> addressed ourselves to Nicolas Bourbaki, that many-headed mathemati-

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[63]François Le Lionnais, ed., *Great Currents of Mathematical Thought (2 Volumes)*, trans. Charles Pinter R. A. Hall Howard G. Bergmann and Helen Kline (Mineola: Dover Publications, 1971). Jacques Roubaud, *Mathematics: (a novel)*, trans. Ian Monk (Champaign: Dalkey Archive Press, 2012), p.146.

[64]Roubaud, 'The Oulipo and Combinatorial Art,' p.38. Roubaud also gives a few summary remarks about the nature of this relationship, to which I will return below.

cian who has undertaken the reformulation of the exposition of mathematics from its origins—not historical but logical—and endeavours to reconstruct it in all its complexity with materials passed through the sieve of axiomatic critique. Understood thus, mathematics reduces to the study of very general laws that apply to collections of elements which are no longer necessarily numbers or points.[65]

The group was founded in 1934, giving themselves the pseudonym 'Bourbaki' (after a French general of the Franco-Prussian war with no apparent mathematical connection) as an academic hoax, thus inscribing in their name a certain playfulness and a willingness to posit rather than discover foundations, mirroring their axiomatic approach: they 'resolved to establish Bourbaki's existence irrefutably by publishing a note under his name.'[66] A group of young mathematicians in Paris met to begin a new project, 'to define for 25 years the syllabus for the certificate in differential and integral calculus by writing, collectively, a treatise on analysis. Of course, this treatise will be as modern as possible.'[67] They were initially motivated by their dissatisfaction with the teaching of mathematics in France at the time, and its reliance on textbooks

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[65] François Le Lionnais, 'Introduction and Commentary,' in *Great Currents of Mathematical Thought, Volume I: Mathematics: Concepts and Development*, ed. François Le Lionnais, trans. R. A. Hall (Mineola: Dover Publications, 1971), p.10.

[66] André Weil describes a lecture given at the *École normale supérieure* in 1923 by Raoul Husson, 'a gentle prankster,' in which he presented an outlandish piece of mathematics as 'Bourbaki's theorem'. Weil and his associates then 'resolved to establish Bourbaki's existence irrefutably by publishing a note under his name in the *Comptes-Rendus* of the French Academy of Sciences'. André Weil, *The Apprenticeship of a Mathematician*, trans. Jennifer Gage (Basel: Birkhäuser, 1992), p.101. Claude Chevalley gives a variant on this story in which Weil uses the name to concoct a citable source for an unidentified theorem for one of his students. Claude Chevalley, 'Nicolas Bourbaki, Collective Mathematician: An Interview with Claude Chevalley by Denis Guedj,' trans. Jeremy Gray, *The Mathematical Intelligencer* 7, no. 2 (1985): p.19.

[67] André Weil, cited in Liliane Beaulieu, 'A Parisian Café and Ten Proto-Bourbaki Meetings (1934–1935),' trans. Liliane Beaulieu, *The Mathematical Intelligencer* 15, no. 1 (1993): p.28. The initial six were Henri Cartan, Claude Chevalley, Jean Delsarte, Jean Dieudonné, René de Possel and André Weil.

that they saw as insufficiently rigorous, insufficiently *modern*. In comparison with the dynamism of mathematics in Germany, Russia and other places post-World War I, French mathematics, was, according to Dieudonné, somewhat staid and insular, a situation due at least in part to the loss of a (young) generation of French mathematicians in the recent war.[68] The Bourbaki project then quickly developed from the rewriting of the university syllabus to something larger and more general, 'a collection of tools, which should be as powerful and universal as possible.'[69] There is, then, an acute awareness of a need for some kind of mathematical *progress* in their endeavour. The claimed intent was to start 'from scratch', but their material was necessarily historical, thus they attempted to lay out the abstract structuring principles that would reformulate mathematics in its totality, giving a new deductive 'ground' to existing mathematics.

In the attempt to establish foundations of the *new* of mathematics, Bourbaki in some ways mirrored the avant-garde movements of the same era, a comparison not in fact alien to Bourbaki (or at least some of the members). Pierre Cartier, one of Bourbaki's 'third generation', states:

> If you put the manifesto of the Surrealists and the introduction of Bourbaki side by side, as well as other manifestos of the time, they look very similar. … In science, in art, in literature, in politics, economics, social affairs, there was the same spirit. The stated goal of Bourbaki was to create a new mathematics. He didn't cite any other mathematical texts. Bourbaki is self-sufficient.[70]

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[68] Jean Dieudonné, 'The Work of Nicolas Bourbaki,' trans. Linda Bennison, *The American Mathematical Monthly* 77, no. 2 (1970): pp.134–5.

[69] Beaulieu, 'A Parisian Café,' p.33.

[70] Pierre Cartier, 'The Continuing Silence of Bourbaki: An Interview with Pierre Cartier, June 18, 1997, by Marjorie Senechal,' *The Mathematical Intelligencer* 20, no. 1 (1998): p.27.

This 'time' is, Cartier notes, broadly similar to that of other transformative movements and developments of the twentieth century, or, perhaps the so-called 'short twentieth century', from the First World War to the fall of the Soviet Union, which Cartier affirms as 'a century of ideology, the ideological age.'[71] However, the explicit political impetus typical of such movements is not a part of their self-theorisation. This—to take up the concerns of my first chapter—is in contrast to the sometimes tortuous attempts at a political synthesis in Surrealism by Breton. For example, in 1934, he affirms that the 'liberation of man' is coterminous with the 'liberation of the mind', with the latter the '*sine qua non*' of the former, even while he maintains the 'essential distinction' of these two spheres of emancipation.[72] Thus, ultimately, Breton was not willing to subordinate imaginative autonomy to the demands of the Communist party, even while holding on to a vision of their being united. There was, as Jacqueline Chenieux-Gendron states, an 'immense confidence placed by Surrealism in the power of the imagination ... already working as if in a classless society.'[73]

Although clearly there is a fundamental opposition between the rational structures of Bourbakist thought and the a-rationality of Surrealist exploration, Breton's ambivalences regarding the 'purity' of the endeavour are comparable to Bourbaki's relationship with the 'applications' of their axiomatics (in their case most explicitly physics,[74]

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[71] 'André Weil was fond of speaking of the Zeitgeist, the spirit of the times. It is no accident that Bourbaki lasted from the beginning of the thirties to the eighties, while the Soviet system lasted from 1917 to 1989. André Weil does not like this comparison. He says repeatedly, "I've never been a communist!" There is a joke that the twentieth century lasted from Sarajevo 1914 to Sarajevo 1989. The twentieth century, from 1917 to 1989, has been a century of ideology, the ideological age.' Ibid., pp.26–7.

[72] André Breton, 'What is Surrealism?' In *What is Surrealism? Selected Writings*, ed. Franklin Rosemont (New York: Pathfinder, 1978), p.172.

[73] Chénieux-Gendron, *Surrealism*, p.158.

[74] Pierre Cartier describes a 'bias against physics' in Bourbaki, reporting a conversation with André Weil in which the latter professes complete ignorance about the presentation of quantum mechanics in 1926. Cartier, 'The Continuing Silence of Bourbaki,' pp.25–6.

but we can see this as part of a wider social context of wilful isolation). Yet one of the aims for their project, according to Dieudonné at least, is that it should be useful, that it should 'gather from the diverse processes used by mathematicians whatever can be shaped into a coherent theory, logically arranged, easily set forth and easily used.'[75] A tension thus emerges here, of demands best served by developments isolated from those demands. As previously stated, Dieudonné's comments are somewhat distant from the 'ideals' of the earlier Bourbaki, but it is possible, in this ambivalence regarding the fundamentals of thought and their practical application, to see why Jacques Roubaud calls Bourbaki 'a sort of mathematical surrealism.'[76]

Another issue of early twentieth-century avant-gardes is their collectivity, the extent to which the ideology of individual subjectivity is subverted. An obvious feature of the Bourbaki's mode of presentation is that it has a singular pseudonym that fronts a group endeavour, although again this is not *overtly* political. Their working methods were rigorously collective, without hierarchies or organisational structures, a context where mathematics would be worked through—something akin to artisanship—rather than 'given' by a kind of mathematical inspiration, a position which in itself is disruptive of a powerful and well-established preconception about how mathematics is done. Roubaud states:

> Mathematics, more than art in general and especially the arts of language,
> is shot through with the doctrine of inspiration. . . . There is still a general
> notion that the great ideas and demonstrations that have marked the disci-

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[75]Dieudonné, 'The Work of Nicolas Bourbaki,' p.141.

[76]Roubaud notes that Bourbaki's treatise, 'after an enigmatic first publication in 1939, became a real model for young French mathematicians only at the end of the 1940s: a sort of mathematical surrealism, but altogether foreign to literature.' Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.80.

pline's history were not the fruit of labour, but of an indefinable gift and quality of mind that distinguish such discoverers from we mortals, raising them to the status of inexplicable phenomena.[77]

For all that this collective approach was aimed towards a rational re-ordering of mathematics, however, it does not appear that the working collective itself was particularly orderly. Take, for example, Dieudonné's description: 'certain foreigners, invited as spectators to Bourbaki meetings, always come out with the impression that it is gathering of madmen. They could not imagine how these people, shouting—sometimes three or four at the same time—about mathematics, could ever come up with something intelligent.'[78] Collectivity is, similarly, a feature of Oulipian work, that is the work on methods as such, as opposed to the individual end-works of their particular members or whoever chooses to use their devices; however, the impression given by their *comptes rendus* suggests something rather more convivial than Dieudonné's description of Bourbaki meetings.[79]

Over the course of four decades Bourbaki released seven books of the *Elements of Mathematics*,[80] developing from the core axioms their deductive derivations: *Set Theory; Algebra; Topology; Functions of One Real Variable; Topological Vector Spaces;* and *Integration*. Each volume contains the same prefatory remarks with the promise to 'take up mathematics at the beginning and give complete proofs.' They go on to outline their generalising intent:

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[77] Roubaud, *Mathematics*, pp.120–1.

[78] Dieudonné, 'The Work of Nicolas Bourbaki,' pp.141–2.

[79] See Bens, *Genèse de L'Oulipo*.

[80] In fact, the original French title is *Éléments de mathématique* (rather than *mathématiques*). This singularity of the term is obviously intentional given the unifying aim. See Armand Borel, 'Twenty-Five Years with Nicolas Bourbaki, 1949–1973,' *Notices of the American Mathematical Society* 45, no. 3 (1998): p.374

> The method of exposition we have chosen is axiomatic and abstract, and normally proceeds from the general to the particular. This choice has been dictated by the main purpose of the treatise, which is to provide a solid foundation for the whole body of modern mathematics.[81]

Axiomatic thinking in mathematics was hardly new at that time, and foundation-alist moves were already well-established, especially with Hilbert's formalist school. Where Bourbaki innovated (or perhaps better, consolidated) was the development of a greater generality across the different branches which they would attempt to unify under the notion of 'mathematical structure'.

By 'mathematical structure' Bourbaki intended a set of basic axiomatic and deduc-tive rules, and a standard system of notation, that would apply across *all* branches of existing mathematics. These rules would not therefore be grounded in (or rendered im-mediately meaningful by) the elements of any one of the particular branches—numbers for arithmetic; points, lines or planes in geometry, and so on:

> . . . the axiomatic method allows us, when we are concerned with complex mathematical objects, to separate their properties and regroup them around a small number of concepts: that is to say . . . to classify them according to the *structures* to which they belong.[82]

Structure here does bear a resemblance to the 'deep structures' of structuralism (which I discuss in the next chapter), but it is not the same in its genesis—and indeed,

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[81]Nicolas Bourbaki, *Elements of Mathematics: Theory of Sets* (Paris: Hermann, 1968), p.v.
[82]Ibid., p.9.

not the same in its *structure*, as I will describe below. It is, for Bourbaki, what underlies any mathematical thought, more deeply than the surface level appearances of it. The idea is fundamental to mathematical generality, even in its simplest form; for example that arithmetic is not bound by particular discrete objects, but by an abstract concept of quantitative equivalence.[83] There is thus an efficiency—an elegance, as mathematicians would consider it—to thinking in structures, and typically mathematical analysis or deduction aims to reduce things to the simplest terms possible. Bourbaki's 'innovation' was to universalise such structures in mathematics, to find, or rather, to posit its irreducible forms.[84]

Bourbaki's structures are inevitably very abstract, and in the manner of the formalist school, are constructed without any regard for the 'meaning' of their terms. Such thinking proceeds with 'pure symbols', having no inherent significance. The only guarantor of the correctness of reasoning in this way is in accordance with the deductive principles that relate the terms, rather than any inherent comprehensibility. There are, as Queneau points out, certain gains in such thought: 'Ce qu'on perd en "intuition" on le gagne en efficacité.'[85] ['*What is lost in "intuition" is gained in effectiveness.*'.] It is in this way that, for example, the difficulty of conceptualising calculations with

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[83]Dieudonné notes, 'we do not (fortunately!) have to learn a special arithmetic for thermometers and another for books.' Cited in J. Fang, *Bourbaki: Towards a Philosophy of Modern Mathematics I* (Hauppauge, N.Y: Paideia, 1970), p.77.

[84]This 'simplification' does not render the work easy. Queneau notes, 'La lecture des *Eléments*, dit le prospectus, "ne suppose (...) en principle, aucune connaissance mathématique particulière, mais seulement une certaine habitude du raisonnement mathématique et un certain pouvoir d'abstraction". Naturellement, il ne faut pas prendre cette phrase trop au pied de la lettre; et le "certain" peut être qualifié de litote.' Raymond Queneau, 'Bourbaki et les mathématiques de demain,' in *Bords* (Paris: Hermann, 1963), p.14. ['*The reading of the* Elements, *says the prospectus, "does not assume ... in principle, any particular mathematical knowledge, but only a certain familiarity with mathematical reasoning and a certain capacity for abstraction". Naturally, one should not take this sentence too literally; and the "certain" can be considered an understatement.*']

[85]Ibid., p.22.

infinity vanishes if, as Jean Dieudonné states, 'it is needless for a proposition to evoke any other mental image than the perception of the symbols used to write it.'[86] Bourbaki tells us:

> It is now possible to indicate in a general way what should be understood by a *mathematical structure*. The common trait of the various notions designated by this generic name is that they apply to sets of elements whose nature *is not specified*; in order to define a structure one or several relations involving these elements are given (in the case of groups it is the relation $z = x \, \tau \, y$ involving any three elements); it is then postulated that the given relations satisfy certain conditions (which are enumerated) and which are the *axioms* of the structure envisaged. To study the axiomatic theory of a given structure is to deduce the logical consequences of the axioms of the structure, *while excluding all other hypotheses* about the elements considered (in particular, any hypothesis concerning their special 'nature').[87]

Clearly this positing of constitutively *meaningless* structure is the very epitome of the malady identified by Husserl and other theorists, as set out earlier in this chapter. That there should be an underlying structure indifferent to its application, one whose posited universality makes it impossible to discard on the grounds of the shortfall of any inherent meaning rather than coherence, is just the kind of totalising vision that

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[86]Jean Dieudonné, 'Modern Axiomatic Methods and the Foundations of Mathematics,' in *Great Currents of Mathematical Thought, Volume II: Mathematics in the Arts and Sciences*, ed. François Le Lionnais, trans. Helen Kline (Mineola: Dover Publications, 1971), p.260.

[87]Nicolas Bourbaki, 'The Architecture of Mathematics,' in *Great Currents of Mathematical Thought, Volume I: Mathematics: Concepts and Development*, ed. François Le Lionnais, trans. R. A. Hall (Mineola: Dover Publications, 1971), pp.28–9.

reduces the world to mechanism, albeit one that its *effective*. This tendency is also present in the scientific aspirations of structuralism, but there is perhaps nothing quite so abstractly formal as the pure quantitative equivalence of this highly refined mathematics, and thus—from the perspective of the Oulipo's adoption of it as a model— nothing quite so antithetical to socially critical art.

Despite the term then, and conflations in some accounts of Bourbaki, these 'structures' do not appear to have a genetic link with structuralism as it is commonly understood in the 'human sciences', the origins of which are generally traced back to Saussure and the Russian formalists. Structural linguistics relies on the assertion that language could be explained functionally as a synchronic system of internal relations, divorced from its historical development and with only an arbitrary relation between its conceptual and signifying planes, thereby freed from the messiness of actual socio-historical relations. The description of language as a system—*la langue*—independent of its practice—*la parole*—moves to formulate it as a rigorously structured and formally definable object of science. In this sense, it is not hard to see parallels with the formalist tendencies in the mathematics of the same period. But beyond asserting some kind of *Zeitgeist*,[88] it would remain for those who wish to assert *positively* a direct connection between linguistic and mathematical structuralism to justify such a notion.

The two 'structuralisms', in their immanent development, have no identifiable shared source, and while linguistic structuralism spread across the humanities and

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[88] As, broadly speaking, does David Aubin in his essay, David Aubin, 'The Withering Immortality of Nicolas Bourbaki: A Cultural Connection at the Confluence of Mathematics, Structuralism, and the Oulipo in France,' *Science in Context* 10, no. 2 (1997): 297–342. He coins the term 'cultural connector' to describe the role of Bourbaki in this.

social sciences, if anything this may be seen as a tendential attempt at mathematical rigour in these domains, a 'small door' opened to the 'world of the natural and exact sciences as a kind of paradise', as Lévi-Strauss puts it, fostered primarily by linguistics, rather than a *direct* source in mathematics or its own notion of structure.[89] Nor do mathematical structures appear in any way to be an offshoot of the Saussurean paradigm or its developments. Indeed, the notion of mathematical structure can be traced back to the eighteenth and nineteenth centuries with the development of 'algebraic structures'.[90] The idea expands to other areas of mathematics but, prior to Bourbaki, as Leo Corry observes, it 'belongs to the corpus of tacit knowledge shared by mathematicians in their day-to-day work without, however, being part of any specific formal mathematical theory.'[91] Bourbaki's project then makes mathematics more *scientific*, by means of its own tools, which is, similarly, an Oulipian intention—as Le Lionnais states, 'that which certain writers have introduced with talent ... the Oulipo intends to do systematically'[92]—although in the latter case, were its end reached it would be its dissolution.

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[89] 'For centuries the humanities and the social sciences have resigned themselves to contemplating the world of the natural and exact sciences as a kind of paradise which they will never enter. And all of a sudden there is a small door which is being opened between the two fields, and it is linguistics which has done it.' Claude Lévi-Strauss, *Structural Anthropology*, trans. Claire Jacobson and Brooke Grundfest Schoepf (New York: Basic Books, 1963), p.70. Also, the mathematician Jean-Michel Kantor reports that Lévi-Strauss stated in a letter to him: 'ne croyez pas un instant que Bourbaki m'ait emprunté le terme "structure" ou le contraire, il me vient de la linguistique et plus précisément de l'Ecole de Prague.' Jean-Michel Kantor, 'Letter to the Editor,' *The Mathematical Intelligencer* 33, no. 1 (2011): p.1. ['*Do not believe for one minute that Bourbaki borrowed the word "structure" from me, or the contrary; it came to me from linguistics, more precisely, from the School of Prague.*']. The term 'structuralism' is generally agreed to have been coined by Roman Jakobson in 1929.

[90] This received a comprehensive treatment in 1930 by B. L. van der Waerden (*Modern Algebra*), though without an explicit definition of 'structure'.

[91] Leo Corry, 'Nicolas Bourbaki and the Concept of Mathematical Structure,' *Synthese* 92, no. 3 (1992): pp.316–7.

[92] Le Lionnais, 'Lipo (First Manifesto),' p.xix.

One rare instance of the confluence of these two structuralisms however is found in the Bourbakist André Weil's mathematical appendix to Lévi-Strauss's *Elementary Structures of Kinship*, in which the former proposes 'to show how a certain type of marriage laws can be interpreted algebraically, and how algebra and the theory of groups of substitutions can facilitate its study and classification.'[93] It was Lévi-Strauss who requested this particular algebraic interpretation of his system, believing that the structural complexity mandated a mathematical treatment, and Weil was happy to engage with this, not on the understanding that marriage had any inherent mathematical significance, but precisely on the understanding that it was best considered in purely relational terms—in this case the question being the relations *between* marriages rather than marriages as *relationships*. Thus the substantive 'object' drops out of the analysis.[94]

But while there may have been agreement between Lévi-Strauss and Weil on this point, the nature of their respective 'structuralisms' was not thereby rendered identical. As Aubin states, 'while Bourbaki imposed systemic structures onto sets of unspecified elements Lévi-Strauss emphasized the irreducible relations linking elements together.'[95] Any 'elements' of structures in the linguistic tradition are always related

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[93] André Weil, 'On the Algebraic Study of Certain Types of Marriage Laws (Murngin System),' in *The Elementary Structures of Kinship*, ed. Rodney Needham, trans. James Harle Bell and John Richard von Sturmer (Boston: The Beacon Press, 1969), p.221.

[94] Lévi-Strauss recalls: 'I was working on problems of Australian kinship so complex that I thought it would take a mathematician to solve them. I looked up Hadamard, who was also a refugee in the United states—he was already quite old, but a famous mathematician. I posed the problem to him, and … he said that mathematicians know only the four operations and marriage could not be included among any of them. Still pursuing the matter I met André Weil, another refugee. I told him about my visit to Hadamard. His reaction was completely different. There is no need, he said to define marriage from a mathematical standpoint. Only relations between marriages are of interest. I gave him the data for the problem and he produced the analysis.' Claude Lévi-Strauss, *Conversations with Claude Lévi-Strauss by Didier Eribon*, trans. Paula Wissing (Chicago: The University of Chicago Press, 1991), pp.52–3.

[95] Aubin, 'The Withering Immortality of Nicolas Bourbaki,' p.311.

to the totality of the relations of the system, and determined by those relations, such that 'any modification of one of them entails a modification of all others.'[96] Bourbakist structures on the other hand begin with axioms, defined abstractly, which are then supposed to be universally applicable in deductive terms. In linguistic structuralism (and its derivations), structures are interpreted from manifest content of the domain, whereas in mathematical structuralism, given the posited axioms, the totality of its possible manifestations is logically derived from the structures. Bourbakist *structuring* is a one-way operation then, its structures are more akin to a set of tools, and its operation is not so much a descriptive science aiming at the 'truth' of mathematics, but a productive framework for mathematical innovation.

In addition to the difference in the nature of relationality, is also worth noting that mathematical structuralism does not face many of the complexities that are found in structuralist thought in the linguistic mould, precisely because mathematics is not a language in the same way as a so-called 'natural language'. There is no inherent ambiguity, no polysemy, no metaphor in the mathematical sign (not, at least, in its strictly mathematical adoption)—this, after all, is why it is the aspirational form of scientific rigour more generally. It is also, in part at least, why mathematics is not generally considered *literary*. As Art Berman puts it, 'mathematics is to be a language (or, more precisely, is to be used as a language) with no errors of correspondence to real relations, errors with which ordinary language is replete. ... Mathematics presumably can eliminate this confusion between the lexicon of things and the lexicon of desires. This is the confusion that makes art and literature possible.'[97] The standard Saussurean separation of synchronic linguistics from diachronic, in order to promote its formal

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[96]Lévi-Strauss, cited in ibid., p.310.
[97]Art Berman, *Preface to Modernism* (Urbana: University of Illinois Press, 1994), pp.134–5.

rigour, is wholly uncontroversial in mathematical practice—mathematics could, perhaps should, be considered historically, but its functioning is not primarily described in such terms. Indeed its standard of 'truth' is effectively synchronic, that is, a question of systemic coherence. Similarly the mathematical sign is not obviously separable into *signifié* and *signifiant*. All of which would seem to suggest that mathematics is not so readily described semiologically.

For all the formalism of his approach, and the tendential development of semiology as in some sense a mathematisation of language, Saussure does not explicitly seem to have addressed the question of mathematics itself as semiological.[98] Louis Hjelmslev, in his even more strongly formalistic account of structural linguistics, proposes that the particular science of linguistics should be 'an algebra of language.'[99] He notes that language and mathematics are similarly analysable, but the question of whether mathematics is semiological would be answered by determining if it is 'biplanar' in the way that language is; that is to say, an 'exhaustive description' of language in fact 'necessitates operating with two planes.'[100] Hjelmslev stops short, however, of making a substantive declaration regarding the semiological status of mathematics, and considers the possibility that it may be better described as a symbolic system (and here, contrary to Saussure, he does not restrict 'symbolic' to non-arbitrary entities). That is to say its content and expression plane (or signified and signifier in Saussurean

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[98]Saussure writes in his notes for the *Cours*, 'Eventually, and we are quite aware of the implications of this statement, it will be accepted that it is in the intrinsic nature of language that its elements and the relationships between them can, as a matter of course, be expressed by mathematical formulae.' Ferdinand de Saussure, *Writings in General Linguistics*, ed. Simon Bouquet and Rudolf Engler, trans. Carol Sanders and Matthew Pires (Oxford: Oxford University Press, 2006), 143.

[99]'Such a science [linguistics] would be an algebra of language, operating with unnamed entities, i.e. arbitrarily named entities without natural designation, which would receive a motivated designation only on being confronted with the substance.' Louis Hjelmslev, *Prolegomena to a Theory of Language*, trans. Francis J. Whitfield (Madison: University of Wisconsin Press, 1961), p.79.

[100]Ibid., p.112.

terminology) are one, or that there is no analytic requirement to distinguish them. Following Hjelmslev's logic, it seems entirely plausible to state that mathematical entities are 'isomorphic with their interpretation,'[101] not least because this unambiguousness of mathematics is precisely the feature for which it is valued as an exact science. The upshot of this, for an Oulipian adoption of mathematical rather than linguistic structuralism, is that the structure in question stems from a domain where the content plane definitively is not at issue, and thus further divorced from forms that might conventionally be proper to language and literary composition.

For all that it is named as the central concept of the Bourbakist approach, it is, however, not clear that 'structure' in its fully formal definition actually fulfils the claims made for it by Bourbaki (or by its commentators). Bourbaki do give formal definitions of the main 'mother structures' of mathematics in Chapter IV of the *Theory of Sets*, but, as Leo Corry argues, there remains a gap between the 'image' of these as fundamental structures and the way in which they are developed, such that the concept of structure 'has no real mathematical use in the rest of Bourbaki's work.'[102] The structural approach, for Corry, 'fails to simplify proofs and ... ultimately does little more than introduce extraneous terminology.'[103] Bourbaki is not here damned by Corry as irrelevant or fundamentally flawed exactly, but he notes that their influence in the practice of actual mathematics is a little different to the more widely received image of absolute rigour and mathematical totalisation.[104]

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[101] Ibid., p.113.

[102] Corry, 'Nicolas Bourbaki and the Concept of Mathematical Structure,' p.326.

[103] Ibid., p.338.

[104] It is interesting in this regard that the formal rigour attributed to Bourbaki in the few brief remarks in the hyper-structuralist *Cahiers pour l'analyse*, whose authors themselves are aiming at the most rigorous treatment of structure (but whose immediate sources are Lévi-Strauss, Lacan and Althusser), are perhaps ill-founded. In fact there appears to be very little substantive engagement with Bourbakist ideas in the *Cahiers*, though this is hardly damning since their theoretical developments are not made to

Corry argues that the centrality of 'structure' to Bourbaki may be misattributed (and indeed self-misattributed), but this is not necessarily the same as a wider criticism of their lack of an absolute ground for their axioms. Such criticism would itself suggest a reading more insistent on totality (or its possibility) than the intentions of Bourbaki. Later claims from Bourbakists suggest that from the start, they did not aim to reproduce the 'metamathematics' of Hilbert, that is, the attempted logical proof of the system's consistency, the very possibility of which had been fairly conclusively dismissed by Gödel in any case. Dieudonné notes that Bourbaki's methods are not those of Hilbert and that we can 'give no other reason for our belief [in the consistency of mathematics] than the fact that up to now the sun has risen every morning, and the same argument applies to the consistency of mathematics.'[105] Bourbaki thus claims only 'naive' status for their theory: 'we take the "naive" viewpoint and do not approach the troublesome questions, half philosophic, half mathematical, raised by the "nature" of mathematical "entities" or "objects".'[106] The term 'naive' typically refers to set theory that is non-formalised, that is given in natural language (and that is thus not subject to Gödel's aporetic diagnosis). However, despite their claim to avoid 'troublesome questions', Jacques Roubaud observes that, in *The Architecture of Mathematics*, Bourbaki 'wields philosophical bludgeons'. Thus he contends that Bourbaki did better by 'remaining resolutely "technical"' in order to escape 'the most flagrant metaphysical snares.'[107] For Roubaud at least, Bourbaki were better simply to proceed with their project, albeit with great ambition, rather than laying out in advance its *meaning*, in the sense of a metamathematical justification. That is, in other words, to proceed in the manner of

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depend upon such an engagement.

[105] Dieudonné, 'Modern Axiomatic Methods,' p.264.

[106] Bourbaki, 'The Architecture of Mathematics,' p.28.

[107] 'In [*The Architecture of Mathematics*], Bourbaki calmly wields philosophical bludgeons of quite Neanderthal proportions, in contrast with his usual snake-like prudence.' Roubaud, *Mathematics*, p.144.

Diogenes in his 'proof' of motion (which is to say, by walking): 'on these foundations, I state that I can build up the whole of the mathematics of the present day; and, if there is anything original in my procedure, it lies solely in the fact that, instead of being content with such a statement, I proceed to prove it in the same way as Diogenes proved the existence of motion; and my proof will become more and more complete as my treatise grows.'[108]

Bourbaki's 'rigour' then, is not quite as strong as the *idea* of their rigour, which is best sustained—according to Roubaud at least—by their own avoidance of self-theorisation, a situation which bears some obvious relations with the theoretical diffidence of the Oulipo. Compare for example, Queneau's own statement—which picks up on the Diogenes reference—that 'our research is ... *naive*: I use the word "naive" in its perimathematical sense, as one speaks of the naive theory of sets. We forge ahead without undue refinement. We try to prove motion by walking.'[109]

Despite the early ambition of Bourbaki to reinvent mathematics in a culture that was not sufficiently *modern*, a certain ambivalence emerged regarding the new, that is, whether Bourbaki ever really attempted to innovate, if they only sought to prepare the ground or if, even, at some level they actually inhibited the new. Dieudonné states bluntly, in 1968, that 'Bourbaki does not attempt to innovate mathematics,' and even more starkly that 'Bourbaki does not touch living mathematics.'[110] Similarly, Catherine Chevalley, the daughter of Claude, another of the Bourbaki founders, reflected that 'the way my father worked, it seems that ... what counted most [was the] pro-

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[108]Nicolas Bourbaki, 'Foundations of Mathematics for the Working Mathematician,' *The Journal of Symbolic Logic* 14, no. 1 (1949): p.8.

[109]Queneau, 'Potential Literature,' p.51.

[110]Dieudonné, 'The Work of Nicolas Bourbaki,' p.138, 145.

duction of an object which then became inert—dead, really. It was no longer to be altered or transformed.'[111] Yet Dieudonné 'completely fails to understand' the accusation of Bourbaki 'sterilising mathematical research.'[112] Dieudonné thus contends that the accusation is based on a misapprehension of the nature of Bourbaki's activities. For Dieudonné, the work of Bourbaki was always preparatory: 'here is my picture of mathematics now. It is a ball of wool, a tangled hank where all mathematics reacts one upon another in an almost unpredictable way.' The task of Bourbaki is, then, to cut the threads and rearrange them.[113] Bourbaki addresses not the 'ends' of mathematics, not the mathematically 'new' as such, but instead provides a tool for the pursuit of such ends, a universal tool, such that all branches of mathematics would be unified in this structure, but also that it would be *usable* in 'the greatest number of mathematical places.'[114]

This defence of Bourbakist reticence towards innovation is, however, made some time after Bourbaki's main period of activity from the thirties to the fifties—Bourbaki had 'reached his dotage after 1968', as Roubaud notes—and can perhaps thus be taken as a post-facto defence of their failure to fulfil the 'immensity of its ambition (it failed) (it was destined to fail),'[115] in Roubaud's words. He continues to describe how the *Elements of Mathematics*, in its successive volumes aimed to

> ... position the foundations of ... 'fundamental structures', on which are
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> based (will be based, would be based) the sequel, the mythical 'second

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[111] Catherine Chevalley, cited in Cartier, 'The Continuing Silence of Bourbaki,' p.26

[112] Dieudonné, 'The Work of Nicolas Bourbaki,' p.144.

[113] Ibid., p.140. See also Claude Chevalley's remarks on 'bourbakisation' on p.139 below.

[114] 'The idea which soon became dominant is that the work had to be primarily a *tool*. It had to be something usable not only in a small part of mathematics, but also in the greatest number of mathematical places.' Ibid., p.138.

[115] Roubaud, *Mathematics*, p.73.

part', in which genuine mathematics ... would at last reveal itself in all its splendour, illuminated by the author's initial intention. ... After the fact, this can be considered as a cathedral, immediately engulfed, left incomplete and in ruins.[116]

The reasons for this failure are manifested in their 'perpetually rewriting, ceaselessly refashioning chapters that are already finished,' according to Roubaud, but a more fundamental impossibility seems also to be suggested here, that the settling of mathematical grounds that were adequately foundational was, from the start, a somewhat quixotic undertaking. Nonetheless, Roubaud takes Bourbaki, and its failing, as the model for his own seven-volume *Great Fire of London* project, inasmuch as the acknowledgement of its impossibility—as a memory project—is written into its own foundations. It is of course readable in the Oulipian concept of *potential*, as the pursuit of something whose actualisation, by definition of the scope, is held at a distance. What, for Bourbaki, was an unfulfilled ambition, becomes, for the Oulipo, a decided limitation. That is, 'true' foundations are not pursued; instead arbitrary ones are posited (as constraints), but if there is a notion of 'genuine literature', akin to Roubaud's characterisation of Bourbaki's ultimate ambition to reveal 'genuine mathematics', this is for others, Oulipians or otherwise, to pursue.

Bourbaki's work, beyond its own unfulfilled intentions, was ultimately overtaken by developments in wider mathematics; a more organic approach, often drawing on the interfaces with physics, biology and other sciences, was gaining in influence in the 1970s. In particular, catastrophe theory and fractal geometry emerged, drawing

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[116]Jacques Roubaud, *The Great Fire of London: A Story with Interpolations and Bifurcations*, trans. Dominic Di Bernardi (Normal: Dalkey Archive Press, 1992), p.241.

on, and better able to describe, complex patterns in nature that older geometric abstractions struggled with. Even twenty years prior, however, in the early fifties, it was becoming clear that Bourbaki's chosen foundation of set theory would be better replaced by another contender for axiomatic status, category theory, which was simpler and more agile. Bourbaki however was reluctant to acknowledge this, even though certain aspects of category theory had already been developed by them. By this point then, Bourbaki was engaged in a defensive exercise and with the publication of *Theory of Sets* in 1957, they had stopped referring to 'fundamental structures', a key underpinning of the coherence of their whole project. In terms of mathematical innovation, Bourbaki's consolidation of mathematical structures led to their own project's ossification, even while their method was productive outside of it. Yet their *image* of rigour, as Corry puts it, has remained potent. Bourbaki projected a re-invention of mathematics, but a re-invention such that it would not discard the state of mathematics, but rather re-interpret its foundational structures. They maintained, effectively a *faith* in the possibility, 'on the horizon', of the 'complete formalisation' of mathematics.[117] With this method, with the boundary always in sight, the possibility of the radically new, the rationally unthinkable new, is outside the scope of the Bourbaki project itself. Yet in their claim to re-found the field, to revolutionise mathematics, there is something more at stake than simply consolidating the existing. There is the expectation that through a properly mathematical consolidation, something beyond that consolidation might yet be fostered, the mathematical *new* in potential, and in method.

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[117]'Written in accordance with the axiomatic method, and keeping always in view, as it were on the horizon, the possibility of a complete formalisation, our series lays claim to perfect rigour.' Bourbaki, *Theory of Sets*, p.12.

Oulipian Bourbakisation

As Roubaud insists, Bourbaki can be taken as the counter-model to Surrealism for the Oulipo,[118] and the sympathies seem clear enough: the conscious, rational development proposed by Bourbaki as opposed to the unconscious, a-rational exploration of the Surrealists. But, as Roubaud also states, Bourbaki's formalist mathematics is 'altogether foreign to literature.'[119] Admittedly, in Queneau's declaration, the Oulipo is 'not a literary school',[120] but there is undoubtedly a connection to literary production (however undefined its end may be) and thus something intriguing about Roubaud's observation of the incongruousness of the mathematical model.

The Oulipo would appear to take seriously the concept, described by Claude Chevalley, of 'Bourbakisation', a process that aims to take 'a text that one considers screwed up and to arrange it and improve it'[121]—that is, the introduction of mathematically rigorous order into any given domain—and yet it is by no means obvious that the specifically *literary* text would be 'improved' by this (in any case, the 'text' in question in Chevalley's statement I take to be a more general notion of *texte* as a piece of work, a construction). It is the very perversity of this application that renders it interesting, not

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[118] 'It so happened that shortly after the creation of Surrealism, France witnessed the birth—this time in the domain of mathematics—of another avant-garde group called Bourbaki. There can be no doubt that, when they founded the Oulipo, Queneau and Le Lionnais, amateur mathematicians that they were, had this group in mind. ... *When the Oulipo was conceived, Bourbaki provided a counter-model to the Surrealist group*.' Roubaud, 'The Oulipo and Combinatorial Art,' p.38.

[119] Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.80.

[120] Queneau, 'Potential Literature,' p.51.

[121] 'There is a word which was—which still is—in current usage, to *bourbakise* (*bourbachiser*). This means to take a text that one considers screwed up and to arrange it and improve it. It's more than just to improve; it's to treat it according to the norms which Bourbaki wanted to introduce in mathematics, essentially the theory of sets and the notion of structure. It is the notion of structure which is truly bourbakique.' Chevalley, 'Interview,' p.20.

directly in literary terms—that is to say, not in accordance with the values normally attached to literature, poetry, or other 'creative' writing—but precisely in the methods themselves. There is therefore a similarity of method, not of course in the domain of application, but in *the positing of axioms (constraints).* And it is at this point that the amalgamation of mathematics and literature can best be critically interpreted, rather than in directly assessing mathematical structures in literary works—their attendant aesthetic judgements in terms of mathematical proportion (as in classical aesthetics), pattern or form. All of which is not to say that such values or assessments may not be found in Oulipian works, but that this is not the locus of critical interest, as I approach it at least, in the Oulipian *method* as such. In 'modernist' terms, the Oulipo are certainly interested in the new in literature, but in a slightly distanced way: the new in potential, rather than the actual new of literary product. Rather than determining what this new should be in terms of the form, or social responsiveness of works themselves, they instead offer the methodologically new, whose results are kept at arm's length. This mirrors Bourbaki's insistence (and that of mathematics more broadly) on their independence from pragmatic application in their formal genesis. It also mirrors the mathematical interest, in general, in the process rather than the result of calculation: the proof rather than the postulate.

If it is true that, as Jacques Roubaud notes, 'seen from inside literature, nothing looks more artificial than mathematics,'[122] it is primarily in terms of the method of production involved, though of course the place of literature (or art) and mathematics socially is different in substance as well. Thus, to return to Roubaud's own axiomatic descriptions of Oulipian practice given at the start of this chapter, such texts become

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[122]Roubaud, 'The Oulipo and Combinatorial Art,' p.41.

the 'literary consequences of these axioms, according to the rules of deduction.'[123] It is of course not clear that this axiomatic re-structuring is even possible in the field of literary production, as Roubaud also acknowledges: 'undoubtedly this is only an ideal situation.'[124] The reasons for this are twofold: first, that 'the domain of the formulation of constraints'—that is to say language, from the level of letter to paragraph and beyond—and certain of the quasi-mathematical operations of displacement, substitution, addition, subtraction, and so on—which are laid out in Queneau's 'Queneleyev' table[125]—are 'strongly unhomogeneous', which is to say they are not inscribable in a universal structure in the manner of Bourbaki's axiomatics in set theory. Secondly, there is the basic question of deduction. 'What is an Oulipian demonstration?' asks Roubaud. There is, in literary composition, no clear resolution with the same analytic structural coherence as mathematics. Thus, Roubaud admits:

> One may think that a text composed according to a given constraint (or several constraints) will be the equivalent of a theorem. It is a fairly interesting hypothesis. It is nonetheless true that the foreseeable means of passage from the statement of the constraint to its 'consequences,' the texts, remain in a profound metaphorical vagueness.[126]

It is thus an ironic rigour that sees the transportation of mathematical structures to literary composition. Of course the disparity between mathematical structure and

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[123]Ibid., p.41.

[124]Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.89.

[125] Raymond Queneau, 'Classification des travaux de l'OuLiPo,' in *Atlas de littérature potentielle* (Paris: Gallimard, folio essais, 1981). As with 'Mendeleev', alternate spellings also occur, such as 'Quenelejeff'. See also Marcel Bénabou's expanded version of the 'Table of Elementary Linguistic and Literary Operations' in Marcel Bénabou, 'Rule and Constraint,' in *Oulipo: A Primer of Potential Literature*, ed. and trans. Warren Motte (Champaign: Dalkey Archive Press, 1998), pp.44–5.

[126]Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.89.

literary composition, and in particular the deductive form, as I propose it here, is not equally strong or evident in every Oulipian method. But even in Oulipian work that is ostensibly the most amenable to deductive form *within* the work, that of detective fiction—and this is a domain of some interest to the Oulipo, such that there is an offshoot dedicated to the genre, the Oulipopo (*Ouvroir de littérature policière poten-tielle*)—the mathematisation of it tends towards something perverse that might destroy the work. Specifically in the case of detective fiction, this risk would be that if the work could be mathematically deduced it would seem to render a contentful reading of the work redundant. A work that plays with this tension is Claude Berge's *Who Killed the Duke of Densmore?*, a murder mystery in which the solution is 'mathematically accessible'.[127]

The Oulipian adoption of Bourbakist mathematics in 1960 took place at a time when the latter would soon be rendered outdated by its own rigidities, as acknowl-edged by Roubaud: an 'essential trait' of Bourbaki was the attempt 'to build the house of mathematics according to an architecture of "structures". This trait brought with it not only greatness but failure; for its choice of a "foundation"—set theory—became obsolete at the very moment when the undertaking was reaching maturity.'[128] Else-where Roubaud notes the quick decline of Bourbakist vitality from the 'vibrancy' of the mid-fifties, to weariness in the mid-sixties.[129] The Oulipo's Bourbakist enterprise thus has a rising trajectory just as Bourbaki's own is falling. But if Bourbaki's failure was the direct result of the success of its own rigour, the Oulipo, according to Roubaud,

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[127]Claude Berge, 'Who Killed the Duke of Densmore?' In *Oulipo Laboratory: Texts from the Bib-liothèque Oulipienne*, trans. Iain White (London: Atlas Press, 1995).

[128]Roubaud, 'The Oulipo and Combinatorial Art,' p.42.

[129]' "He" was already decidedly weary when I had the opportunity to approach him, albeit in rather a roundabout way, circa 1965. ... But in 1954 he was still vibrant, forceful, conquering, full of ardour and ambition.' Roubaud, *Mathematics*, p.73.

'avoided making this mistake. It never sought to establish an overview of constraints or to organise them according to the hidden parameters of a literary theory.'[130] Thus, again, there is a step back from the full consequences of the non-formalisable aspects of their proposal. Yet, despite Roubaud's confidence in the continuity thereby achieved, the Oulipo cannot avoid the contradictions inherent in this scheme simply by refusing theorisation, and in fact it is these contradictions that are vital to what is critically interesting in their work in any case. The application from outside, the lack of immanence of mathematical method to literature, is a central peculiarity in the Oulipian project. This artificiality or incongruousness is not to be homogenised (or is best when it is not), and it is more than a 'metaphorical vagueness'; it is a methodological perversity.

It is a methodological perversity because mathematics is applied to artistic production, which directly challenges Adorno's (and others') denigration of the mathematisation of the artwork: when art 'hypostatises its dimension of logical consistency' by equating the forms of art and mathematics which are 'always opposed', it loses what distinguishes it as art. The rational aspect entirely takes over the mimetic. It is not that art is without logic—this after all is what the artwork requires to 'gain objectivation', to be 'self-alike'—but, argues Adorno, 'the logic of art, a paradox for extra-aesthetic logic, is a syllogism without concept or judgement,' its 'premises and givens are extralogical'. Thus 'it thwarts every effort to comprehend artworks on the basis of their effect.' This is not simply empirical logic, but a figurative logic. Such logic comes to 'the point of parody in totally determined works deduced from a minimum of basic material.'[131] Take as comparison Adorno's concern for serialism in the tendential risk

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[130]Roubaud, 'The Oulipo and Combinatorial Art,' p.42.
[131]Adorno, *Aesthetic Theory*, pp.187–8.

of 'robot music', the 'extreme of pure factuality' which 'ends by submitting to the spell of what actually exists' (although he also states that this 'is not the inevitable fate of serial practice').[132] Where the mathematisation of art's logic becomes rigidified, the work becomes mechanical, and no longer achieves any social-critical tension. Following such an analysis, it would appear that the application of explicit mathematical form in literature could only serve to nullify its aesthetic import. The totalising aspect of mathematical order is, as Adorno puts it, 'a compositional defect.'[133] The 'second world' that art creates with its immanent logic derives from the empirical world, but its logic is modified in art, and is thus *not* mathematics, whose logic, in Adorno's thought, is always pre-determined. Through this it offers 'the implicit critique of the nature-dominating *ratio*, whose rigid determinations art sets in movement by modifying them.'[134] If the Oulipian use of mathematics brings *unmodified* logic into the work, would it not lose this implicit critique, lose precisely the capacity to indicate that 'the world could be other than it is'?[135] Would it in fact render in Adorno's terms, the 'texts that are the consequences of … axioms, according to the rules of deduction,' non-art, non-literature, merely rational mechanism?[136] This, nevertheless, seems to be what the Oulipo propose.

There is a phrase of Gertrude Stein's quoted both by Jacques Roubaud and Hervé le Tellier—'If it can be done, why do it?'[137]—that expresses the inherent irony in this

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[132] Adorno, 'Vers une musique informelle,' p.304.

[133] 'The idea of complete organisation refers to the content of the organic and not to mathematical necessity. In its pure form the latter is always a compositional defect. … Anything which only seems right everywhere, cannot be right anywhere.' Ibid., p.308.

[134] Adorno, *Aesthetic Theory*, p.191.

[135] Ibid., p.190.

[136] Roubaud, 'The Oulipo and Combinatorial Art,' p.41.

[137] Roubaud calls it 'Stein's axiom', and states it in relation to a mathematician reluctant to complete proofs. Roubaud, *Mathematics*, p.95; Le Tellier as a response to the inclination towards free creative endeavour—'l'ironie est une réponse aux limites du langage.' Le Tellier, *Esthétique de L'Oulipo*, p.288.

endeavour. Neither of them use it in quite the theoretical context I am presenting here, but the raising of this contradictory formulation is nevertheless indicative of a certain spirit in the Oulipo—doing something that cannot, or should not be done. The *form* of this contradiction can be held because it is potential, so the literary consequences (in the 'finished' work), while necessary for the carrying out of the exercise, are not the holders of the value for that exercise. It is an irony of method, a contradictory method, which retains critical interest *as* method, because it is not (yet) synthesised in the end-work.

Far from falling prey to the Adornian proscription of mathematical hypostatisation of artistic form, the Oulipo instead offer, then, a critical opening in the narrowing aesthetic field precisely through that hypostatised mathematical form. Rather than nullifying the artwork's tension, rigid mathematically determined form here draws back the tension into the compositional method, seeking to leave the end-work at once free from total mathematical determination, but also free from the contradictory impulse of the amalgamation of disciplines in its construction.

If, as cited above, Roubaud concedes that the crossing of mathematics and literature is 'only an ideal situation,' the 'unhomogeneous' crossing of the two domains is not a flaw, but rather the seed of the Oulipian provocation as presented here. That is to say, it is this that allows the maintenance of the constraint's arbitrariness, its resistance to being determined as an artistic, rather than logical, end. Compare here Bénabou's distinction between rule and constraint—the rule is established, accepted, natural; the constraint is artificial, excessive:

['*irony is a response to the limits of language.*']

Now it is actually in the passage from the *rule* to the *constraint* that the stumbling block appears: people accept the rule, they tolerate technique, but they refuse constraint. Precisely because it seems like an unnecessary rule, a superfluous redoubling of the exigencies of technique, and consequently no longer belongs—so the argument goes—to the admitted norm but rather to the process, and thus is exaggerative and excessive. It is as if there were a hermetic boundary between two domains: the one wherein the observance of rules is a natural fact, and the one wherein the excess of rules is perceived as shameful artifice.'[138]

The arbitrariness of the constraint is the central distinction from conventional structuring forms (which themselves, particularly in poetry, may have mathematically analysable or formalisable aspects). It draws on the arbitrariness of Bourbaki's axiomatic structures. Since Bourbaki does not engage in a fully formalised metamathematics on the model of Hilbert, they can only acknowledge that their own 'mother structures' are not *necessary* in accordance with the system that they then go on to derive. In fact they can be said to be the products of mathematical history, though this diachronic perspective does not change their synchronic function in the mathematical totality postulated—but the point is that it is thereby acknowledged that this mathematical totality *could* be otherwise. The Oulipian project, at its most innovative, however, takes the arbitrariness of starting points and elevates it to a *principle*, which distinguishes the arbitrary constraint from any traditional literary structure that constitutes a formal demand of the work rather than the method. Even more strongly, it is the case that no literary or linguistic structure exists that would or could justify such axioms of

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[138]Bénabou, 'Rule and Constraint,' p.41.

composition, or even the validity of axioms in literary construction in the first place. This is the 'heterogeneity' of the field that Roubaud states; and similarly the deductive procedures themselves have no pre-existing structural coherence that justifies their identification as literary procedures.

Bourbakist structures are 'justified' by their development, that is, having reduced mathematics to core axioms, these axioms become *useful*—it is proposed—within mathematics as a foundation upon which to develop, or at least they did until Bourbaki was overtaken. Oulipian structures, in terms of a critique of method as such, cannot be so justified by a literary work: this is definitive of the arbitrariness of the constraint. Thus the presentation of full 'rigour' in literary deduction remains external to literature itself inasmuch as Oulipian rigour only extends to the working through of the constrained form. The method is, unlike Bourbaki, ironic—it deploys a rigour in a domain in which, if it had an intrinsic relation to it, would destroy the literary specificity of that domain.

For this reason, Oulipian method is not a *synthesis* of mathematics and literature, it is not the attempted systematisation of literary production as a mechanism (and thus not, for example, 'computer writing'—recalling the group's concern to avoid 'mechanical automatism'). Rather it is the impossible maintenance of the conditioning of literary material by mathematical means—impossible that is, for each strand of this crossing to maintain itself in the crossing when fully worked through. The tension of instrumentality is only maintainable in the method and this is why a critique of Oulipian mathematical method remains at the level of *potential* literature. This pre-forming of mathematical material, maintains a position of externality against that which it meets—literary material. The method presents something of the form of ex-

pediency without having a literary purpose, since it has been deliberately suspended from that, a situation which is, of course, unsustainable in the actuality of the total work's process.

It is this, I want to argue, that enables us to locate in the Oulipo a resistance to instrumentalisation. The constraint itself is instrumental in form: it is given from outside the literary material and gives a partially dominating formal demand. But how that demand is met is *not* in literary terms specified: as Roubaud says, 'constraint is a principle not a means.'[139] This means that the form of instrumentality is admitted at the same time as it is denied: that the work maintains an irreducibly rational and determined element—in fact an excess of this element in relation to the kind of immanence of the artwork's development that Adorno would prescribe—held in momentary suspension together with some unspecified literary purport. The constraint has effects here, clearly, but these are not simply mechanical since they are a negotiation between subjective constructive work and resistant material.[140] This particular tension dissolves with the completed work. Of course it may or may not be the case in the individual Oulipian work that other, perhaps related, tensions emerge that wold render it critically interesting, but again, this is a different question.

This situation offers an ironic reflection on the attempted totalisation of mathematics in Bourbaki, but also more widely on the condition of modern rationality from which this stems. The condition of instrumental reason, that knows means but not ends, is here mirrored in the artwork, but refracted through a prior structure of determined irrelevance. Bourbaki's project was a 'making orderly' of mathematics. The Oulipo's

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[139] Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.87.
[140] I address the question of material more fully in chapter 4.

deployment of this ordering scheme, rather than showing the benefits of making literature orderly, plays with the impossibility of it, thus reflecting back on the value of the total order of the Bourbakist scheme, and more widely the occlusion of the 'ends' of order in modern rationality.

The move here is in some respects similar to the interpretation of the role of mathematical form that Rosalind Krauss finds exemplary in Sol LeWitt's geometrical structures of the 1960s and 1970s (although with this comparison I resist any implication that the Oulipo's work itself thus constitutes some sort of conceptual art, which would undermine that critical focus on method as such[141]). Krauss argues, in a 1978 essay, that such work is usually taken to represent the transcendent ideals of mathematical form, 'the demonstration of rationalism itself.'[142] By this analysis it is the art suitable for the 'cognitive moment.' But Krauss sees LeWitt's pieces as obsessional rather than strictly purposive in a rational sense, 'meticulous' but 'meaningless', 'the demonstration of a kind of mad obstinacy.'[143] Where logic and mathematics are typically reductive, aiming to simplify expressions to their basic terms or structures, 'the babble of a LeWitt serial expansion has nothing of the economy of the mathematician's language.'[144] Rather than the expression of the rational, LeWitt's works are instead a kind of logical persistence of the irrational. 'LeWitt . . . wrote, "irrational thoughts should be followed absolutely and logically." The consequence of obeying this direction, and LeWitt's art does obey it, is to arrive at the opposite of Idealism. It is to achieve an absurd Nominalism.'[145]

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[141] The method requires a work, but the method is not the work; but the method and not the work is object of interpretation. I develop this further in chapter 4.

[142] Rosalind Krauss, 'LeWitt in Progress,' *October* 6 (1978): p.48.

[143] Ibid., p.54.

[144] Ibid., p.55.

[145] Ibid., pp.57–8.

The Oulipian scheme similarly undertakes to do something unnecessary and absurd, and pursues it with mathematical rigour. Such rigour may also be obsessional, and this is sometimes associated with Oulipian work, though it is not in itself a consistent or necessary definition of Oulipian activity. The work thus finds a way of breaking received literary necessities, but also indicates an inherent irrationality of deductive reason. If instrumental reason is one of the 'unsolved antagonisms of reality', in Oulipian method, which offers something instrumental without any literary justification or end, then it can be seen as that reality's return as an 'immanent problem of form.'[146] Excessive mathematisation in the literary process is reflective of the loss of 'meaning' in modern rationality—mathematics, science, society. By a perversity of method, the Oulipian mathematisation touches on the irrational ends of rationality. If, as Adorno says, 'capitalist society hides and disavows this irrationality,' then might we see here in the Oulipian method a glimmer of the 'irrationality and absurdity of the status quo'?[147]

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[146] 'The unsolved antagonisms of reality return in artworks as immanent problems of form.' Adorno, *Aesthetic Theory*, p.7.

[147] Ibid., p.73.

3. Structure and Genesis

Given their historical coincidence and apparent shared concerns, French structuralism might seem like the most obvious theoretical reference point for understanding the practices and specific significance of the Oulipo within post-war literary modernism. However, the relationship between the two is somewhat ambivalent. There is, in the work of the Oulipians, an unwillingness to address structuralism overtly, or to make explicit any connections with their own project. While clearly there are shared presumptions about the nature of linguistic and literary forms—primarily that these could be approached with the dispassion of a formal science—there are also significant differences, which will come to light over the course of this chapter. Specifically, I aim to show that there is, in the Oulipo, a rather different approach to the uses and limitations of rational structures—mathematical, linguistic or otherwise—in the literary work and to the ways in which these structures are brought forth critically and overcome practically.

Science, Structure, Form

The wider context of structuralist abstraction in the human sciences is a major presence in the Oulipo's emergence, even though they consistently distance themselves from it theoretically. In a short 1967 article in the *TLS*, Raymond Queneau writes of a 'renewal of the contact between science and literature ... because "science" has now incorporated the social sciences,'[1] and yet there is no mention here of structuralism. Where structuralism *is* mentioned by the Oulipo, it is the object of *specific* disavowal, such as that found in the 1973 second manifesto, drafted by François Le Lionnais. Le Lionnais states their attitude of 'circumspection' towards 'structurAlism', while claiming 'structurElism' as their own (and demanding that the two not be confused).[2] Jacques Roubaud claims that 'structure, in its Quenellian and Oulipian sense, has only a minimal relation to "Structuralism".'[3] Similarly Noël Arnaud finds he cannot deny the similarity of 'preoccupations', but states that 'there were no relations between the Oulipo and the structuralists.'[4] A slightly dismissive sounding note by Georges Perec, in the afterword to *La Disparition*, his famous 'e-less' novel, indicates little regard for

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[1] Queneau, 'Science and Literature,' p.864.

[2] 'The overwhelming majority of Oulipian works thus far produced inscribe themselves in a SYNTACTIC structurElist perspective (I beg the reader not to confuse this word—created expressly for this Manifesto—with structurAlist, a term that many of us consider with circumspection.' François Le Lionnais, 'Second Manifesto,' in *Oulipo Laboratory: Texts from the Bibliothèque Oulipienne*, trans. Harry Mathews and Iain White (London: Atlas Press, 1995), p.

[3] Roubaud has different structures in mind. He goes on: 'ideally (like constraint in respect to axiom), it refers to the Bourbakian structure.' Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.93. For the mathematical concept of structure and the Oulipo's debt to Bourbaki, see chapter 2.

[4] 'The fact remains that on a few important points (beginning with the way of regarding literary production), structuralist preoccupations—the word "structuralist" taken here in its most general sense (or both generalising and simplifying at once)—were not wholly unrelated to the preoccupations of the Oulipo. Aside from personal friendships, however, there were no relations between the Oulipo and the structuralists.' Noël Arnaud, 'Prolegomena to a Fourth Oulipo Manifesto—or Not,' in *Oulipo: A Primer of Potential Literature*, ed. Warren Motte (Champaign: Dalkey Archive Press, 1998), p.xiv.

the current intellectual fashion (which can be presumed to be structuralism): he claims to have been inspired by 'un support doctrinal au gout du jour qui affirmait l'absolut primat du signifiant.'[5] ['*A doctrinal support for the flavour of the month that affirmed the absolute primacy of the signifier.*']

Claude Lévi-Strauss (drawing on Nikolai Troubetzkoy's work on linguistics) defines the four 'basic operations' of the structural method as follows: the study of '*unconscious* infrastructure' rather than conscious phenomena; the interrelatedness (and thus non-independence) of its terms; the concept of 'system', which it serves to elucidate; and finally the discovery of 'general laws'.[6] Despite their attempts at distancing outlined above, the Oulipo clearly share something of the basic suppositions at stake here, all of which converge on the idea of scientificity—that is to say the model of science as the discovery of a-subjective, underlying systems of fundamental laws. Consequently the Oulipo and the structuralists can be placed, contra Surrealism, on the same—conceptual—side of the great 'dividing line' that Foucault considers can be drawn in twentieth-century French thought in general, a line 'that separates a philosophy of experience, of meaning, of the subject, and a philosophy of knowledge, of rationality and of the concept.'[7] Yet while structuralism might approach the humanities in the manner of a science, the idea of science entering into literature's production, as in the Oulipo, is, as seen in the previous chapter, more controversial in this respect, not

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[5] Georges Perec, *La Disparition* (Paris: Gallimard, 2016), p.309. I have avoided here Gilbert Adair's translation of the novel and its afterword—since he also maintains the novel's constraint and thus various convolutions are required of the translation—in favour of a more 'literal' rendering. See Georges Perec, *A Void*, trans. Gilbert Adair (London: Harvill Press, 1995), p.281.

[6] Claude Lévi-Strauss, 'Structural Analysis in Linguistics and in Anthropology,' in *Structural Anthropology*, trans. Brooke Grundfest Schoepf (New York: Basic Books, 1963), p.33.

[7] Michel Foucault, 'Life: Experience and Science,' in *Aesthetics, Method and Epistemology: Essential Works of Foucault 1954-1984, Volume Two*, ed. James D. Faubion, trans. Robert Hurley (New York: The New Press, 1998), p.466.

least because it is more destructive of the basic formulation of literature as art in the broad post-romantic sense.

Crucially, unlike structuralism's philosophy of the concept, the Oulipian adoption of science is not primarily to do with description, or at least not the description of literature as such; rather it informs the question of how literature can or should be written. Consider for example, Georges Perec's 'Scientific Papers'. (From 1961 to 1978, Perec worked as a scientific archivist at a CNRS-funded neurophysiology research unit, and was thus well-versed in the format, and indeed content, of scientific papers.[8]) The collection is, at one level, a series of hoaxes, perhaps most obviously in 'Experimental Demonstration of the Tomatotopic Organisation in the Soprano', whose abstract states:

> The author studies the ways in which tomato-throwing sets off the *yelling reaction* in the Chantatrix and shows how various areas of the brain are involved in the response, in particular the vegetal cortex, the thalamic nuclei and the lyrical fissure of the north hemisphere.[9]

The paper has an extensive bibliography (with bad puns), plenty of technical (or technical-sounding) terminology and several diagrams and charts of parodic inscrutability. Yet it is not iconoclastic. The paper that follows it, on the double-hybridisation of butterflies, is more subtle; its content is entirely plausible, and scientifically astute.[10] Indeed one would be forgiven for thinking it authentic were it not for the alteration

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[8] See Bellos, *Georges Perec*, chapter 25.

[9] Georges Perec, 'Experimental Demonstration of the Tomatotopic Organisation in the Soprano (Cantatrix sopranica L.),' in *Cantarix Sopranica L.: Scientific Papers* (London: Atlas Press, 2008), p.12.

[10] Georges Perec, 'The Spatio-Temporal Distribution of Coscinoscera Victoria, Coscinoscera tigrata carpenteri, Coscinoscera punctata Barton & Coscinoscera nigrostriata on the Island of Iputupi,' in *Cantarix Sopranica L.: Scientific Papers*, trans. Ian Monk (London: Atlas Press, 2008).

of the name of the island, 'Iputupi', on which the butterflies are found, through its every iteration in the paper. The development is suggestive of an underlying code or schema: the expansion of the name follows a regular pattern in which the central letter is spliced, which may be reflective of gene mutation. I have rendered the iterations (with a backward projection to 'i') in pyramid-fashion to make this clearer, in figure 3.1. In fact the entire paper is rich in interpretative possibilities.[11]

```
            i
           ipi                   i -> ipi
          ipupi                  p -> pup
         iputupi                 u -> utu *
        iputitupi                t -> tit
       iputipitupi               i -> ipi
      iputipupitupi              p -> pup
     iputiputupitupi             u -> utu
    iputiputitupitupi            t -> tit
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Figure 3.1: Perec's 'Iputupi' mutation (* indicates original name)

None of this, however, is to say that the Oulipo in any way propose to elucidate or develop scientific laws in a descriptive-theoretical sense, but rather that they are receptive to the use of ideas in literature from the usually disparate domain of natural science. A strong statement of the presumption towards scientificity, shared with structuralism, is given by Jean Lescure: 'one can therefore operate on [language] as on other objects of science.'[12] The issue here is one of the prescriptive methods that

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[11] See Bernard Magné, 'La cantatrice et le papillon: A propos de deux pastiches d'article scientifique chez Georges Perec,' in *Perecollages 1981-1988* (Toulouse: Presses Universitaires du Mirail-Toulouse, 1998). Among other interpretative significances, Magné considers the paper on hybridisation as itself a genre-hybridisation.

[12] Lescure, 'Brief History of the Oulipo,' pp.35–6.

can be carried out with scientific forms as a component part of the artistic materials. Yet it should be stressed that any prescription here is only *partial.* The Oulipo aim to avoid being bound by a total formalism—hence the principle of constraint rather than mechanism. There is thus some ambivalence regarding the *rigour* of the scientific descriptions that underlie their productive principles. As testament to this attitude take, for example, Queneau's insistence on the 'craftsmanlike' rather than 'scientific' nature of their work (something I return to in the final chapter): 'we forge ahead without undue refinement. We try to prove motion by walking,'[13] a stance that, as well as disavowing *absolute* rigour, also values praxis over theory—the reference is of course to Diogenes's counter to Zeno's theoretical argument against the possibility of motion. This 'undue refinement' does however meet more strident appeals to systematicity in other cases—thus Le Lionnais's declaration that the Oulipo intends to pursue literary innovation 'systematically and scientifically.'[14] These variants of approach (Le Lionnais is perhaps the most formally inclined of the group) are also indicative of the fact that they did not have a totalising theory of their practice, and in any case Le Lionnais's ideas here do not touch on any kind of literary-theoretical demand. In this respect we can also note Roubaud's comments that the Oulipo avoided the 'mistake' that results in the sedimentation of theory: '[the Oulipo] never sought to establish an overview of constraints or to organise them according to the hidden parameters of a literary theory.'[15]

Clearly then, there are Oulipian concerns with regard to the totalising and hypostatising aspects of structuralist thought. There was, with structuralism, as François

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[13]Queneau, 'Potential Literature,' p.51.
[14]Le Lionnais, 'Lipo (First Manifesto),' p.xix.
[15]Roubaud, 'The Oulipo and Combinatorial Art,' p.42.

Dosse notes, 'a desire for modernism in search of new models,'[16] that is to say the development of a theoretical world-view responsive to the shifts towards quantitative evaluation and processes of modern productive society. The same could clearly be said of the Oulipo with the proviso that the 'models' in question are less the formal patterns for theoretical engagement but rather formal materials to be *worked with*. Their thinking is itself a historically contingent product of the same intellectual-cultural milieu that produces the theory (from which they distance themselves) and that theory's abstracted forms (which they engage practically). The aim here is to find the critical reflection of the latter practice back onto the conditions of the former theory.

For structuralists, Saussure's developments in linguistics brought a formal rigour and systematicity previously absent in the human sciences. It was perhaps not quite so revolutionary as the earlier mathematisation of the natural world inaugurated by Galileo, yet this latter shift, in its imposed logical consistency, was clearly the model.[17] However, from the start, structural linguistics had more difficulty determining its *empirical* content.[18] The result of this, the relational system of underlying linguistic structure, bears the problems of abstraction and stasis for which structuralism would later be criticised more generally: the resolution to relations rather than positive terms (a sign, tying inextricably its conceptual and material planes, only emerges from its

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[16]François Dosse, *History of Structuralism: Volume 1: The Rising Sign, 1945–1966*, trans. Deborah Glassman (Minneapolis: University of Minnesota Press, 1997), p.xx.

[17]'As regards its method, linguistics was not in the same favourable condition as natural science. It could not follow the example of modem physics which, to use the terms of Kant, had entered upon the safe way and the sure method of a science by a sort of intellectual revolution. It had to grope its way; it had to proceed hesitatingly and tentatively. It was natural that, in these first attempts, linguists looked for the help and guidance of other branches of knowledge that, long before, had established their methods and principles.' Ernst A. Cassirer, 'Structuralism in Modern Linguistics,' *Word* 1, no. 2 (1945): p.99.

[18]'A language ... has this curious and striking feature. It has no immediately perceptible entities.' Ferdinand de Saussure, *Course in General Linguistics*, ed. and trans. Roy Harris (London: Bloomsbury, 2013), p.126.

relations with other signs); the abstraction of its determination from its use (*langue* over *parole*); and the discarding of its historical genesis (synchrony over diachrony). While this achieves a certain autonomy for the science in question—linguistics as a total system—it also absents from that science any consideration of how and why its material develops. Saussure of course considered that such questions could be taken up in different domains of study, and that the restrictions of his proposed system bolstered its status as an independent science. But the problem is not so easily eliminable by limiting the domain—as Fredric Jameson notes: 'if the opposition in the long run proves to be a false or misleading one, then the only way to suppress it is by throwing the entire discussion onto a higher dialectical plane, choosing a new starting point, utterly recasting the problems involved in new terms.'[19]

The aspiration to establish an autonomous human science finds similar expression in the work of the earlier theorists usually referred to as Russian formalists, who were thus, unsurprisingly, claimed by many structuralists as their own immediate forebears. It is worth pointing out, too, for the perspective of Oulipian studies, that François Le Lionnais identified the formalists among those whose work should inform the foundation of the group: 'I decided to propose to Raymond the creation of a workshop or seminar of experimental literature, which would address in a scientific manner that which the troubadours, the Rhétoriquers, Raymond Roussel, the Russian formalists and a few others had merely adumbrated.'[20] The formalists' interests spanned linguistics and literature, but their most decisive move was the attempt to secure the scientific study of literature as a self-sufficient object. In particular, they sought to free the

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[19]Fredric Jameson, *The Prison-House of Language: A Critical Account of Structuralism and Russian Formalism* (Princeton, Princeton University Press, 1972), p.18.

[20]Le Lionnais, 'Raymond Queneau and the Amalgam of Mathematics and Literature,' p.77. Note—again—that Le Lionnais is probably the most 'scientifically' inclined of the group.

study of literature from its subservience to other disciplines or concerns (as merely their means of expression)—and determine literature for itself, in its *literariness*, as indicated in Roman Jakobson's famous 1921 quote:

> The object of a science of literature is not literature, but literariness—that is, that which makes a given work a work of literature. Until now literary historians have preferred to act like the policeman who, intending to arrest a certain person, would, at any opportunity, seize any and all persons who chanced into the apartment, as well as those who passed along the street. The literary historians used everything—anthropology, psychology, politics, philosophy. Instead of a science of literature, they created a conglomeration of homespun disciplines. They seemed to have forgotten that their essays strayed into related disciplines—the history of philosophy, the history of culture, of psychology, etc.—and that these could rightly use literary masterpieces only as defective, secondary documents.[21]

It is striking, however, that while Le Lionnais noted the Oulipo's similarity of concern with formalists in the matter of bringing science and literature together, what was done with this combination was rather different. If the formalists were pursuing a science of *literariness*—however impossibly essentialist and reductive such a project might be[22]—it is just this aspect of literary *composition*, as its end, that the Oulipo

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[21]Roman Jakobson, cited in Boris Eichenbaum, 'The Theory of the "Formal Method",' in *Russian Formalist Criticism: Four Essays*, 2nd ed., trans. Lee T. Lemon and Marion J. Reis (Lincoln: University of Nebraska Press, 2012), p.107.

[22]'The attempt to identify the "specific difference" of literariness was effectively doomed to failure from the outset, since the very concept of literature ... is constituted, historically, precisely through such contamination.' David Cunningham, 'Genre Without Genre: Romanticism, the novel and the new,' *Radical Philosophy*, no. 196 (March 2016): p.25.

specifically avoid theorising as a group, working instead on how scientific methods and structures could be brought in as a *resource* for literary (or poetic) writing, without specifying what the latter end should be.

Central to the work of Victor Shklovsky and other formalists was a contrast between 'poetic' and 'practical' language. The function of *practical* language, in this distinction, is to communicate effectively. But language that is determined by its object of communication then becomes secondary to the more essential importance of that object. Thus the formalists similarly reject any grounding of the poetic in its sources or intentions, and, in particular, anything in poetic analysis that might appeal to metaphysical or mystical attributions. Rather, the work is most definitely to be considered as something 'made, fashioned, contrived ... not only artful but also artificial', and not read in pursuit of some kind of originary spirit, or as the expression of the poetic soul—such would be 'false in scholarship', as Eichenbaum attests.[23] This of course leads to Shklovsky's well-known theory of 'defamiliarisation', where the poetic is determined as a collection of devices that interrupt smooth perception, that 'make strange' that which has become habitual (a reversal of the usual process of learning), and return it to perception with a renewed sharpness.

There is, no doubt, an Oulipian rendering of this in the use of constraint, a defa-

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[23] 'Proceeding from the basic proposition that in a work of art *not a single* sentence can, in and of itself, be a mere "reflection" of the author's personal feelings, but rather is always a construct and a performance, we *cannot and have no right* to see anything other than an explicit artistic device in such a passage. The customary procedure of identifying some given statement with the contents of the writer's "psychology" is false in scholarship. In this sense, the mind of the artist as a man who *experiences* various moods always remains and must remain outside the bounds of what he creates. The work of art is always something that is made, fashioned, contrived; it is not only artful but also artificial, in the best sense of the word. Therefore, *there neither is nor can there be* any place in it for the reflection of the empirical reality of the inner self.' Boris Eichenbaum, 'How Gogol's "Overcoat" is Made,' in *Gogol from the Twentieth Century: Eleven Essays*, ed. and trans. Robert A. Maguire (Princeton, Princeton University Press, 1974), pp.286–7.

miliarisation of method that defeats the idea that poetic or literary construction is built on finding the 'best' or most transparent way of expressing feeling, intent or meaning. But Shklovsky's determination of what constitutes the poetic is a theoretical stance not to be found in the Oulipo—there is no Oulipian theory of the poetic as such, which would extend beyond their determinations of innovation solely in the potentialities of method. Furthermore the demand that poetic writing is constituted by the 'laying bare' of technique (as Shklovsky finds exemplary in Sterne) is one that is—when rendered as a specifically Oulipian question of the normative visibility of the constraint in the work—without consensus in the Oulipo.[24]

For all that Shklovsky focuses on literary technique[25]—that is to say, a particular skill of making—the process of production *as such* is not really addressed—analysis is kept to what is manifest in the work itself, a limitation which is quite in keeping with the idea of an empirical science, but does not quite step into the territory explored by the Oulipo. Indeed, to address such questions would, for the formalists, most likely fall foul of a 'genetic fallacy', which would disallow any analysis of works (specifically or in general) in terms of production in itself. What can be said of the genesis of works is that they maintain coherence by virtue of an established system of signs, that is, of

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[24]See, for example, Daniel Levin Becker, *Many Subtle Channels: In Praise of Potential Literature* (Cambridge: Harvard University Press, 2012), p.77ff. The question of the visibility of the constraint in the work is of course one posed from the perspective of the work, and thus not the question I ask here, which is about the method itself.

[25]The idea of technique that Shklovsky presents is not actually all that formal in a strict sense, and more to do with incongruities of perspective or framing than anything like Saussure's linguistic formalism; thus, his famous formulation, 'one may recover the sensation of life; [art] exists to make one feel things, to make the stone *stony*.' Shklovsky, 'Art as Technique,' p.12. Indeed, the Russian formalists were perhaps ill-served by the title 'formalist'. Erlich notes that Boris Eichenbaum would have preferred the term 'morphological'. Victor Erlich, *Russian Formalism: History and Doctrine*, 4th ed. (The Hague: Mouton, 1980), p.171. Eichenbaum also retracts from the risk of formalist stasis, as he notes in 1927: 'from the beginning we understood the historical nature of our task. ... Science itself is still evolving, and we are evolving with it.' Eichenbaum, 'Formal Method,' p.138.

literary conventions. This consideration bears comparison with T. S. Eliot's conception of poetry as situated in history as at once bound by tradition but also altering it, with the poet as the catalyst for the collected materials of the developing tradition—in this sense poetry 'approaches the condition of science.'[26] However, while such analyses observe that change occurs, and offer a description of the structures and devices of writing as manifestations of a certain constructed-ness in the work as it is—indeed as an object that can be approached scientifically—what they lack is any actually modernist reflection on what could or should be done to continue to produce work, and how those methods themselves, in themselves, bear a critical relation to the conditions of their own development.

If the concept of 'defamiliarisation' is taken not as a descriptive criterion of the literary object, but as a prescriptive demand, then the Oulipian use of mathematical rationality in literature would appear to be a manifestation of such an approach in terms of method at least. It is, as I have argued in the previous chapter, pursued precisely *because* the domains of literature and mathematics are constitutively incongruous. But this is a defamiliarisation of *making*, rather than of end-work. (To be clear, I am talking here about 'making' in a narrowly compositional sense, of the construction of linguistic material, which a broader 'making' in terms of social meaning—encompassing the work's reception, its historical continuation and development *as* work—takes as its point of artefactual initiation.) Recalling how strange Galileo's introduction of mathematical abstraction was to natural science, but how 'natural' it has become, the defamiliarisation of mathematical-scientific structure by means of literary method takes on a certain critical leverage here. Such 'making strange' can be couched in terms that

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[26] T. S. Eliot, 'Tradition and the Individual Talent,' in *Selected Prose*, ed. John Hayward (Harmondsworth: Penguin, 1953), p.25.

are familiar to Oulipian commentary (recalling, for example, Roubaud's comments that 'seen from inside literature, nothing looks more artificial than mathematics'[27])—that is, that the introduction of arbitrary constraints, rather than closing down literary potential, refreshes something in that process, something of literature's own structures. This is often, in Oulipian commentary, put in terms of a rather too substantive subject (that would tend towards the sort of psychologism that would no doubt have been disdained by the formalists)—that is, that it refreshes the subjective resources of the writer. For all its intuitive plausibility, however, there is no necessary causal inference from a 'strange' method to a strange result: a peculiar or 'difficult' method may yet result in quite banally conventional work, where little or no trace of that method is manifest—indeed there are Oulipian works where this accusation has been made.[28] If, however, the critical focus remains on method, it is possible to interpret a productive tension that otherwise dissolves in a too-easily accommodated synthesis in the 'final' work.

While the formalists did not broach the prescriptive question of making as such—the question of 'how to make work?'—Vladimir Propp does offer a brief glimpse into the possibility of such a programme. Propp's *Morphology of the Folktale*—much prized by latter structuralists, including Lévi-Strauss and Greimas—offers a system-

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[27] Roubaud, 'The Oulipo and Combinatorial Art,' p.41.

[28] Kenneth Goldsmith for example, states that 'one of the greatest problems I have with OULIPO is the lack of interesting production that resulted from it. ... On the whole, they embraced a blandly conservative narrative fiction which seems to bury the very interesting procedures that went into creating the works.' Kenneth Goldsmith, *Interview by Erik Belgum*, http://writing.upenn.edu/epc/authors/goldsmith/readme.html (accessed August 20, 2019). Lauren Elkin and Scott Esposito, in their somewhat polemical book, complain that Jacques Jouet's *Metro Poems* have a 'facile profundity' and that his novels 'range from the divertingly pleasant to downright awful.' Elkin and Esposito, *The End of Oulipo?* p.34. Hervé Le Tellier is similarly accused: 'Le Tellier sets himself only medium-interesting and often juvenile constraints, and plays it safe in executing them.' Ibid., p.69. A defence is offered in Peter Consenstein, 'Forever Never Ends,' in *Verbivoracious Festschrift Volume Six: The Oulipo*, ed. G. N. Forester and M. J. Nicholls (Singapore: Verbivoracious Press, 2017).

atic schema for the narrative 'elements' of any given folktale. Finding 'systematicity'
lacking in existing folktale description, Propp considers his morphology a necessary
propaedeutic: 'the accuracy of all further study depends upon the accuracy of clas-
sification.'[29] There are resonances of the systems of classification of the natural sci-
ences: Linnean taxonomy—though Propp notes that 'our studies are still in their "pre-
Linnean" stage,'[30]—and the Mendeleyev table of chemical elements. Lévi-Strauss
notes that Propp's arrangements of terms ('β: Absentation', 'γ: Interdiction', 'δ: Vi-
olation', 'ε: Reconnaissance', etc.) appear 'analogous to chemical formulae'.[31] This
kind of scientificity clearly appeals to Lévi-Strauss's thinking: elsewhere he specu-
lates on the formulation of a 'table of linguistic structures …comparable to the table
of elements which Mendeleieff introduced into modern chemistry.'[32] This is also com-
parable to Raymond Queneau's 1974 table of Oulipian operations, the 'Queneleyev'
table, which organises Oulipian constraints in tabular form, arranged by types of entity
and operation.[33]

The 'elements' of Propp's system are narrative *functions* (31 in total), arranged
along a single axis of the tale and 'defined from the point of view of [their] significance
for the course of action',[34] rather than subjects of their enactment. From this emerge
seven 'spheres of action', defining the categories of 'dramatis personae'. The ordering
of the functions is unvarying, although they may be subject to various exclusions, sub-

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[29] Vladimir Propp, *Morphology of the Folktale*, 2nd ed., ed. Louis A. Wagner, trans. Laurence Scott
(Austin: University of Texas Press, 1968), p.5.

[30] Ibid., p.11.

[31] Claude Lévi-Strauss, 'Structure and Form: Reflections on a Work by Vladimir Propp,' in *Structural
Anthropology 2*, p.122.

[32] Claude Lévi-Strauss, 'Language and the Analysis of Social Laws,' in *Structural Anthropology*
(New York: Basic Books, 1963), p.58.

[33] See p.141 n.125 in this thesis.

[34] Propp, *Morphology*, p.21.

patterns and variations of manifestation; the 'dramatis personae' similarly may have a one-to-one, one-to-many or many-to-one relation to their actualisation as characters in the specific tale.[35] Given this 'necessary' underlying structure of the tale, a reversal of the process becomes plausible: from a descriptive to a prescriptive narratology that, in certain respects, foreshadows Oulipian methods. Thus Propp writes: 'it is possible to artificially create new plots of an unlimited number. All of these plots will reflect the basic scheme, while they themselves may not resemble one another.'[36] However, Propp is not proposing a total mechanisation—folktale construction is still the work of a 'storyteller', one who is 'constrained' in terms of the sequence of functions, but 'free' in the details of realisation.[37] Propp's account thus serves as a manifestation of the kind of shift away from the *craft* of storytelling that Walter Benjamin describes in 'The Storyteller'. The craftsmanship of the storyteller, for Benjamin, is displaced by something more appropriate to industrial technology, the unmediated directness and explanatory efficiency of 'information', in which the traces of experience are lost.[38] In this sense, Propp's 'explanation' of the folktale—the aspect that, for Benjamin, is kept in abeyance by storytelling—risks its becoming another casualty of modern rationalisation. This presentation of constrained and free aspects of literary creation might at first glance seem proto-Oulipian—indeed, it seems plausible that this is what Le Lionnais had in mind when he referred to Russian formalists as forerunners of the

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[35] Ibid., p.80.

[36] Ibid., p.111.

[37] Ibid., pp.112–13.

[38] 'The storytelling that thrives for a long time in the milieu of work—rural, maritime and then urban—is itself an artisanal form of communication, as it were. It does not aim to convey the pure "in itself" or gist of a thing, like information or a report. It submerges the thing into the life of the storyteller, in order to bring it out of him again. Thus, traces of the storyteller cling to a story the way the handprints of the potter cling to a clay vessel.' Walter Benjamin, 'The Storyteller: Observations on the Works of Nikolai Leskov,' in *Selected Writings: Volume 3: 1935-38*, ed. Howard Eiland and Michael W. Jennings, trans. Harry Zohn (Cambridge: Belknap Press, 2002), p.149.

Oulipo—though it should be noted that it lacks the innovation of arbitrary form, which is central to Oulipian practice, and is in fact only a more formalised description of any narrative construction, inasmuch as it means to conform to some possibility of recognition in its basic principle(s) of generic unity.

The strict linearity of Propp's schema that would, prospectively, allow the possibility of a reversal of an analytic process into a constructive one is, however, deemed by Lévi-Strauss, and other structuralists, to be at once too formally distanced from the actual content of the folktale, but at the same time drawn too close to an empirical description—too close, that is, for a *science*, which ought to offer invariant underlying principles. It is thus, Lévi-Strauss asserts, that Propp's formal analysis is inadequate for the synthetic reconstruction of folktales: 'the proof of the analysis is in the synthesis. If the synthesis is shown to be impossible, it is because the analysis is incomplete. Nothing can be more convincing of the inadequacy of formalism than its inability to reconstitute the very empirical content from which it was itself drawn.'[39] In fact, Lévi-Strauss's domain is still strictly analytic here, since his criticism is over the 'inadequacy' of the schema to tales not yet analysed in its terms, but it functions as well as a dismissal of the generative possibility of the system to produce something that could be successfully classed within the same domain.

The broader aim of Lévi-Strauss's critique is to distance his own structuralism from the failings and limitations he ascribes to formalism, even if, as he acknowledges, the latter has played a significant role in the development of the former. The problem with formalism, by Lévi-Strauss's account, is that it is too tied to a binary separation of form and content, whereby form can be independently determined and simply applied

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[39]Lévi-Strauss, 'Structure and Form: Reflections on a Work by Vladimir Propp,' p.134.

to an arbitrary content. Drawing on a linguistic analogy, he writes: 'the error of formalism ... is the belief that the grammar can be tackled at once and the dictionary postponed.'[40] It is doubtless a tricky problem for structuralism also to exonerate itself from the same accusation, but the solution for Lévi-Strauss, is effectively *more* formalism rather than less: thus, using an established aphoristic *form*, 'if a little structuralism leads away from the concrete, a lot of structuralism leads back to it.'[41] More structuralism here means that form can no longer be determined independently of content—both are to be considered as aspects of a total structure, a human science of meaning.

Formalism presumes to identify the formal structure of the folktale, while leaving certain contingent details arbitrary or free (and thus, in Propp's speculation on synthesis, at the whim of the author), but for Lévi-Strauss, no aspect of a structural reading (in this case the folktale, but for him it only conforms to a wider mythological 'substance'), is independent of structure. Structure is identified at different levels of signification, by oppositional pairs (rather than Propp's mutual implications)—the model here being Jakobson's (and Troubetzkoy's) work on distinctive features in linguistics: that is to say, the smallest identifiable linguistic unit is the distinctive feature, determined as an opposing pair.[42] In Lévi-Strauss's account there is not the distinction between an essential form and contingent content. At all levels meaningful entities are identified in terms of opposition. The totality of the domain of meaning is structured: form and content as inseparable as, in Saussure's famous image, signifier and signified (or sound and thought) correspond to the two sides of a single sheet of paper, where

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[40] Ibid., p.144.

[41] Ibid., p.116. The *form* can be traced to Francis Bacon, and is also adopted by Barthes in *Myth Today*. Roland Barthes, *Mythologies*, p.112.

[42] 'Each of the distinctive features involves a choice between two terms of an opposition that displays a specific differential property, divergent from the properties of all other oppositions.' Roman Jakobson and Morris Halle, *Fundamentals of Language*, 2nd ed. (Berlin: Mouton de Gruyter, 1971), p.14.

'it is impossible to take a pair of scissors and cut one side of paper without at the same time cutting the other.'[43] Thus, in Lévi-Strauss's examples of native American 'oral literature' (as he calls the folktale), structural analysis does not 'come to a stop' with an opaque element of essential function, as formalist analysis does, but continues with oppositively determined pairs according to context—that is, structure is total and also includes all that Propp calls contingent. By contrast, Propp's analysis, as Lévi-Strauss sees it, of variables and constants (the contingencies of actualisation versus the necessary structures)—are only organised by a pre-formed theoretical schema that does not see beyond its own static organisation of 'the data'.

Propp's own response to this is to defend the narrowness of his empirical domain, and criticise Lévi-Strauss for excessive abstraction: 'the difference between my way of reasoning and that of my critic is that I draw my abstractions from the data, whereas Lévi-Strauss draws abstractions from my abstractions.'[44] But, even if Lévi-Strauss can be taken to be reading Propp with broader implications than he would like, Lévi-Strauss's own development towards a greater abstraction can also be read as an extension of the same tendency (which indeed he does). Of course, by the same token, this also means the charge of formalism is not so easily discarded by structuralism. Lévi-Strauss's crucial move here is to discard the perceived need for the syntagmatic structure (effectively the internal diachrony) of the tale—the temporal organisation of narrative—in order to uncover deeper structures expressed paradigmatically. This is what, for Lévi-Strauss, distinguishes the study of myth from that of language, such that

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[43] Saussure, *Course in General Linguistics*, p.132.

[44] Vladimir Propp, 'The Structural and Historical Study of the Wondertale,' in *Theory and History of Folklore*, ed. Anatoly Liberman, trans. Serge Shishkoff (Minneapolis: University of Minnesota Press, 1984), p.76.

its significance is preserved 'even through the worst translation.'[45] But this insistence on deep structures also tends towards a core stasis with Lévi-Strauss: the growth of myth is crystalline; its basic *structure* remains the same.[46] Again, the model of science as the establishment of universal descriptive laws is evident.

Lévi-Strauss's structures find literary application with the likes of Barthes's and Todorov's proposal for the analysis of discourse as a 'second linguistics', an extension of the analytic methodology of linguistics (acknowledging the pre-eminence of rigour in the human sciences proposed by the structural study of linguistics); a step warranted by linguistics proper's limitation—it 'stops at the sentence'.[47] Here again structuralism's scientific aspirations are evident with the positing of fundamental structures beyond or prior to those that are manifest—Todorov offers, for example, a chemical analogy for a proposed distinction between 'atomic' and 'molecular' analyses of literature[48]—but, as Barthes acknowledges, it is an 'immense' and even 'infinite' analytical task, and falls back on a structuralist act of faith, positing a universal 'homological relation' that orders 'all semiotic systems.'[49]

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[45] Claude Lévi-Strauss, 'The Structural Study of Myth,' in *Structural Anthropology* (New York: Basic Books, 1963), p.210.

[46] Ibid., p.229.

[47] Roland Barthes, 'Introduction to the Structural Analysis of Narratives,' in *Image Music Text*, ed. and trans. Stephen Heath (London: Fontana Press, 1977), p.82.

[48] There may, he contends, not be any elements of literature (or at least they have not yet been identified) that are *uniquely* literary, yet the combination of elements—*atoms* that are shared with other disciplines—results in a molecular constitution of literature that is *not* shared by those other disciplines: 'there is not a science of literature exclusively, for the features characterising literature are to be found outside it, even if they form different combinations.' Tzvetan Todorov, *Introduction to Poetics*, trans. Richard Howard (Minneapolis: University of Minnesota Press, 1981), p.71 By virtue of this contextuality, Todorov notes that poetics may be a *transitional* science.

[49] 'If a working hypothesis is needed for an analysis whose task is immense and whose materials infinite, then the most reasonable thing is to posit a homological relation between sentence and discourse insofar as it is likely that a similar formal organisation orders all semiotic systems, whatever their substances and dimensions.' Barthes, 'Structural Analysis of Narratives,' p.83.

Lévi-Strauss's key criticism of Propp's morphology is basically that it proposes an incomplete formalism: it does not account for the arbitrary nature of its own forms. A *structuralism* that structures form and content at all levels is, from this perspective, effectively a greater formalism, with universal scope. Indeed, Lévi-Strauss was later criticised from within a structuralist perspective for his own recourse to anthropological generalisations about the universality of human thought—for example, a certain 'naturalisation' of cultural manifestation in his recourse to the 'raw' forms of primitive cultures, or the 'biologism' of his suggestion that the brain is 'behind the mind.'[50]

For the Oulipo there is of course no overt *theoretical* assessment of these developments, but two aspects of response: first that, inasmuch as such theory could provide formal material, it could be of interest (although not much appears to have been done with structuralist theory *explicitly*, save for Calvino's *If on a winter's night a traveller*—of which I will offer a reading below); and second that the structuralist or formalist methodology itself implicitly informs a willingness to *use* form as productive material in an exaggerative way. What the Oulipo refuse though, it seems, is the stasis and totality that structuralism might tend towards. In this sense, insofar as an Oulipian theoretical sympathy can be inferred, Propp's maintenance of an arbitrary dimension to his morphological description—however problematic in terms of a totalising structuralist critique—is in fact a more sympathetic theoretical position for Oulipian methods than the universal, fundamental structures of Lévi-Strauss. That said, the arbitrary aspects of Propp's putative folktale construction programme are quite limited, not allowing much change in the 'essential' structure of its domain, such that the possibility

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[50]Lévi-Strauss proposes an 'elementary logic, which is like the least common denominator of all thought, ... an original logic, a direct expression of the structure of the mind (and behind the mind, probably, of the brain).' Claude Lévi-Strauss, *Totemism*, trans. Rodney Needham (Boston: The Beacon Press, 1963), p.90.

of the radically *new* would still appear to be closed down.

The dismissal of diachrony—that is, the dismissal of history as an aspect of a scientific or theoretical construct—in structuralism's core is a matter of well-established criticism; specifically that the methodologies of both formalism and structuralism leave unaddressed the temporal constitution of art and literature. Thus, for example, Jameson states that 'synchronic systems cannot deal in any adequate way with temporal phenomena.'[51] Importantly, temporal phenomena can be taken to include all that falls within the domain of art: as Peter Osborne observes, a distinctive concept of (modern) art itself needs to retain 'some critically significant, *irreducibly historical* aspect, whereby the work is subject to processes of historical temporalisation which destabilise and transform what might otherwise appear as purely structural relations, conceptual or aesthetic.'[52]

The critical significance of Oulipian work in relation to theoretical structures (directly or indirectly) is derivable not as a direct response, but as one mediated by a particular mode of use, understood precisely in historical terms. Structuralism's adoption of a formal purity, present right from the start with Saussure's relational rather than referential concept of meaning, discards ontology, but with it loses any ground for its own structures. It is for this reason that Jameson condemns structuralism as ideology—inasmuch as the structural system's own conditions of possibility are not scientifically accountable.[53] Inasmuch as a relation can be found between structural-

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[51]Jameson, *The Prison-House of Language*, p.xi.

[52]Peter Osborne, 'October and the Problem of Formalism,' in *The Postconceptual Condition* (London: Verso, 2018), pp.93–4. Note also that both Jameson and Osborne equate structuralism with formalism (see Jameson, *The Prison-House of Language*, p.195, and Osborne, 'October,' p.97).

[53]'Structuralism finds itself condemned to the study of ideology, not by choice, but out of a kind of internal necessity ... its concept of the sign forbids any research into the reality beyond it.' Jameson, *The Prison-House of Language*, pp.105–6.

ism and the Oulipo, it is in the sense of a historical retrieval of praxis from abstraction, and—as I will address in the following chapter—by discarding strict theoretical description but re-purposing strict material prescription (in the sense of literary materials as constituted by everything that is 'worked' in the production of the work, scriptural and conceptual), they point towards a recuperation of the disdained concept of *craft*.

Beyond Structure?

The Oulipians are, of course, not the only group, and far from the best known, with concerns about the stasis of the total structure. Developments in later structuralism, or more accurately perhaps, in parallel with structuralism, tending towards what has latterly been termed 'poststructuralism', also came to question the viability (and the productivity) of the total structure. *Tel Quel* is perhaps the most prominent umbrella term (naming a journal and a group) for developments in the France of the late 1960s that brought the apparent rigidity and closure of structuralist theory into question. The crucial move perpetrated by the group is, while retaining the categories of formalist-structuralist analysis—and with it a regard for the 'scientific' in the theory of poetic language—to problematise the boundaries of both domains (scientific, poetic), thus re-opening the perspective of temporality as a historical dialogical dimension and productive resource. The aspect of development rather than static system is given in the literary and philosophical figures that they propose to re-introduce to their structural analyses—that is to say the re-incorporation of historical pre-structuralist thought—specifically Lautréamont, Mallarmé, Marx, Freud.[54] *Tel Quel's* project thus articulates

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[54]Tel Quel, 'Division of the Assembly,' in *The Tel Quel Reader*, ed. Patrick ffrench and Roland-François Lack, trans. Patrick ffrench (London: Routledge, 1998), p.22.

history, politics and literature in structures of plurality or difference. The theory of literature, while still given a quasi-scientific presentation, becomes, again, a historical study, and also, interrogating the boundaries of the structures of signification, one of openness and process. Science itself, as the archetypical 'monological' semiotic practice, is subjected to attacks on the hierarchical dominance that place poetic practice in non-scientific subordination. In this way, *Tel Quel* attempt an 'effacement of the mystique of "literature" and the ideology constructed around it,'[55] which is to say, a reconceptualisation of the constitutive separation of literature and science (and in this science congruent with traditional structuralist concerns), but also a proposed displacement of 'monological' science in favour of an appraisal of the 'dialogical' structures of literature. However, the status of scientific logic here is a matter of some ambivalence, since its engagement (or subversion) is frequently offered as rhetorical performance or 'typographical gesture' in *Tel Quel* texts.[56]

It would seem reasonable then to ask if there are similarities between *Tel Quel*'s literary experiments and science-literature boundary transgressions, and those of the Oulipo. The Oulipo themselves were aware of possible overlaps of concern—Le Lionnais asks, near the start of the meeting of 27 August 1971:

> Cherchent une définition de l'OuLiPo à l'apéritif, question grave, sur laque-

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[55] Patrick ffrench and Roland-François Lack, 'Introduction,' in *The Tel Quel Reader*, ed. Patrick ffrench and Roland-François Lack (London: Routledge, 1998), p.3.

[56] The editors of *The Tel Quel Reader* offer as evidence of the theorists' scientificity, 'the typographical disposition on the page of numbered sections and subsections, as in Devade's "theorem" text on chromatic painting or Julia Kristeva's first article in the review, ... the quasi-mathematical formulae that constellate Kristeva's piece, performing the same typographical gesture as the Chinese characters which also begin to appear in *Tel Quel*.' Furthermore, 'Kristeva's references to König, Gödel, Bourbaki, Boole, ... Cantor and Hilbert, also mark out a certain strategic scientificity.' Ibid., p.3. The risk here is that 'scientificity' comes to be seen as no more than the use of particular forms of notation and references to 'master' discourses.

lle il nous faudra revenir longuement, Queneau voulait nous imposer le critère suivant: que le structure utilisée soit mathématique (pas nécessairement numérique). En effet, plusieurs écrivains aujourd'hui, notamment ceux qui se réfèrent au nouveau roman, ou a l'équipe de Tel Quel, ou à celle de Change, sont attentifs à l'utilisation de constructions recherchées, parfois délicates. Leurs recherches diffèrent-elles de nôtres? Et si oui, en quoi?[57]

[*Looking for a definition of the Oulipo as an aperitif, a serious question, to which we will have to return at length, Queneau would like to impose the following criterion: that the structure used be mathematical (not necessarily numerical). Indeed, several writers today, notably those associated with the new novel, or the Tel Quel group, of that of Change, are attentive to the use of refined, sometimes difficult, constructions. Is their research different to ours? And if so, how?*]

The question is not addressed further in that meeting in terms specific to *Tel Quel*; however, as I will go on to argue, the Oulipo's relation to science, and more particularly mathematics, is actually significantly different to that of *Tel Quel*, in that the Oulipo, rather than transgressing boundaries, respect the specificities of the two domains, with the cross-fertilisation all the stronger for that.

In Julia Kristeva's work, the processual, and with it the historical, aspect of the text is at once drawn in terms of a continuation of certain structuralist categories, but also as a repudiation of the stasis of the total structure. She affirms that 'literary semiology is already going beyond what are thought to be the inherent limitations of structural-

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[57] *Réunion Août 1971.*

ism, its "staticism" and its "non-historicism".'[58] She continues to theorise the total structure, in which the subject position is lacking, though in some sense emergent as a manifestation of that structure; but the aspects of time and process are brought back to that structure, such that the total structure is not one of hermetic self-containment, but of processual dynamism, whose scope is infinite. Kristeva's best known concept, 'intertextuality', which owes much to Mikhail Bakhtin's theorisation of the novel as an inherently 'dialogical' and indeterminate form,[59] offers a web of mutual referentiality, not just as a development from source(s) to product, but as an endless opening of significations between different layers or systems:

> If one grants that every signifying practice is a field of transpositions of various signifying systems (an inter-textuality), one then understands that its 'place' of enunciation and its denoted 'object' are never single, complete and identical to themselves, but always plural, shattered, capable of being tabulated. In this way polysemy can also be seen as the result of a semiotic polyvalence—an adherence to different sign systems.[60]

With this the idea of the text as *parole* actualising the single, latent *langue* is exploded. Instead, as Roland Barthes puts it in 1970 (by which time he had taken on

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[58] Julia Kristeva, 'Towards a Semiology of Paragrams,' in *The Tel Quel Reader*, ed. Patrick ffrench and Roland-François Lack, trans. Roland-François Lack (London: Routledge, 1998), p.25.

[59] 'They [novelised genres] become more free and flexible, their language renews itself by incorporating extraliterary heteroglossia and the "novelistic" layers of literary language, they become dialogised, permeated with laughter, irony, humour, elements of self-parody and finally—this is the most important thing—the novel inserts into these other genres an indeterminacy, a certain semantic open-endedness, a living contact with unfinished, still-evolving contemporary reality (the openended present).' Mikhail Mikhailovich Bakhtin, 'Epic and Novel: Toward a Methodology for the Study of the Novel,' in *The Dialogic Imagination: Four Essays*, ed. Michael Holquist, trans. Caryl Emerson and Michael Holquist (Austin: University of Texas Press, 1981), p.7.

[60] Julia Kristeva, *Revolution in Poetic Language*, trans. Margaret Waller (New York: Columbia University Press, 1984), p.60.

much of Kristeva's programme):

> ... the one text is not an (inductive) access to a model, but entrance into a network with a thousand entrances; to take this entrance is to aim, ultimately, not at a legal structure of norms and departures, a narrative or poetic law, but at a perspective (of fragments, of voices from other texts, other codes), whose vanishing point is nonetheless ceaselessly pushed back, mysteriously opened.[61]

Kristeva talks of 'the multi-determination of meaning', a 'network' that replaces 'univocity (linearity) by encompassing it ... enabling us to formalise the symbolic operation of language as a dynamic mark, as a moving "gram" (hence as a *paragram*) which *makes* rather than *expresses* a meaning.'[62] Rather than a structuralist enclosure of meaning, or the more traditional model (to which structuralists objected) of an external psychological or social content which finds its means of expression, Kristeva proposes that 'poetic language' is a complement to the 'code' of scientific or 'normal' language, rather than a sub-code. That is, poetic language's forms are not deviations from a scientifically determined system of denotative meanings; she observes 'scientific logic's inability to formalise, without distortion, the functions of poetic discourse.'[63] Thus poetic language should not be considered as a 'sub-code' in a hierarchy of signification, but rather 'only in poetic language is found the practical realisation of the "totality" (though we prefer the term "infinity") of the code at man's disposition.'[64] Structuralism's scientific aspirations are, however, still much in evidence with

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[61] Roland Barthes, *S/Z*, trans. Richard Miller (Oxford: Blackwell, 1990), p.12.
[62] Kristeva, 'Semiology of Paragrams,' p.32.
[63] Ibid., pp.26–7.
[64] Ibid., p.28.

the claim to a certain logic—a *poetic logic* rather than scientific in the traditional sense, and with this the univocity of scientific discourse still plays a part in the Kristevan analysis, even while its status is questioned.

Scientific logic then must, for Kristeva and others associated with *Tel Quel*, be 'transgressed' by poetic logic in ways that partly recall Surrealism, since the former cannot 'contain' the latter—in fact the reverse is the case for Kristeva: 'ordinary' language can be seen as a 'functional abstraction', a sub-set of the infinity of poetic language.[65] Therefore poetic language needs a treatment that at once has the apparent rigour of scientific logic—and thus something of the structuralist systematicity—but with an (infinite) dynamism and plurality that cannot be accounted for by the latter. Structural processes are therefore inverted –'to make difference the goal rather than the means of analysis.'[66] With this however a problematic relation presents itself, an appeal to the rigour of scientific logic at the same time as its dissolution is proposed in the domain of the poetic. Jonathan Culler observes that 'it is difficult to avoid the conclusion that the theories of the *Tel Quel* group and the arguments which they might bring to bear against the notions of a literary system and literary competence do, in fact, presuppose these notions which they claim to have rejected.'[67] Culler makes this point in support of his own notion of interpretative competence, but the key observation is that something systematic is appealed to at the same time as it is undermined in the *Tel Quel* strategy. This duality is particularly apparent in Kristeva's use of mathematical notation. For example, Kristeva offers the following definition of poetic language,

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[65]Ibid., p.28.

[66]François Dosse, *History of Structuralism: Volume 2: The Sign Sets, 1967–Present*, trans. Deborah Glassman (Minneapolis: University of Minnesota Press, 1997), p.57.

[67]Jonathan Culler, *Structuralist Poetics: Structuralism, Linguistics and the Study of Literature* (London: Routledge, 1975), p.284.

with recourse to the concept of mathematical function and its suitable notation: 'poetic language is not a code encompassing all others, but a class A which has the same power as the function $\phi(x_1...x_n)$ of the infinity of the linguistic code.'[68]

In specifically mathematical terms, the notation here is resistant to the discovery of denotative significance since there is no mathematical context introduced in which its terms are grounded—given that such monological significance is just what is meant to be transcended here, this is perhaps hardly surprising. There is of course a certain suggestive aspect to it—provided it is read in terms that are not strictly mathematical. Kristeva goes on to offer the difference of poetic language as an absorption but also destruction of 'linear' relations, the 'monologism' of scientific logic that 'evolves in the binary space of 0–1 and proceeds by means of identification, description, narration, the exclusion of contradictions, the establishment of truth.'[69] The transgression of this logic '[absorbs] the 1 (the prohibition), announces the *ambivalence* of the poetic paragram: there is a coexistence of the monological (scientific, historical, descriptive) discourse and the discourse that destroys this monologism.'[70] The function of poetic writing, however, 'has an invariable property: it is dialogical and its minimal interval is 0 to 2.'[71] Leaving aside for now the mathematical objections to the formulation, the suggestion is that there is no meaning by identification, but rather by an expansive plurality. The 'coexistence' of the two logics is key to the text, since it is what allows Kristeva to present a logic that diffuses another logic in the latter's own terminology, a double gesture towards the rigour of a system that is, purportedly, preserved and dissolved simultaneously.

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[68] Kristeva, 'Semiology of Paragrams,' p28.
[69] Ibid., p.31.
[70] Ibid., p.31.
[71] Ibid., p.32.

Kristeva notes later in the essay that 'the use of notations derived from new mathematics is obviously only metaphorical, insofar as an analogy can be established between, on the one hand, the relation of ordinary to poetic language, and on the other, the relation finite/infinite.'[72] There is perhaps something slightly disingenuous about the term 'only' here, since the move to subordinate the monologic of mathematics to the infinity of dialogical poetic language is precisely to open such denotations to metaphor. In fact, Kristeva's characterisation of the poetic recalls Jakobson's description of metaphor (and language's other pole, metonymy): he writes that 'the study of poetical tropes is directed chiefly toward metaphor.'[73] In other words, for poetry, meaning is sought in relations *in absentia* (and in Kristeva's rendering, this associativity extends indefinitely). The metonymic pole of language, for Jakobson, is that constituted by relations *in presentia*, thus he states that the latter is the greater constituent of prose or 'realism' (which, in any denotative sense, would presumably be opposed to Kristeva's poetic language), the former the chief direction of Romanticism, Symbolism, Surrealism. With the metaphorisation of mathematics then, Kristeva opens it up to relations that are alien to the singular logic of mathematics: mathematics has been poeticised. The trouble is, however, that poetised mathematics no longer functions *as* mathematics. Two apparent aims of Kristeva's adoption of the forms of mathematical notation thus come into question: first, whether a displaced notation can still fulfil its function as a guarantor of rigour (rather than merely its suggestion); and second, whether mathematical logic and the norms and hierarchies that attend it, are actually transgressed socially by this presentation.

Clearly most mathematicians would find the *Tel Quel* approach somewhat incon-

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[72] Ibid., p.43.
[73] Jakobson and Halle, *Fundamentals*, p.96.

gruous and it meets an inevitably indignant response from those who present themselves as the defenders of scientific rigour against the 'abuses' enacted by what they call 'postmodernism' and 'epistemic relativism'.[74] That Kristeva's mathematical notation is not mathematics properly speaking is hardly controversial, and is in a sense precisely the point—its hegemony is to be undermined by its dialogical presentation with poetic language. Kristeva notes that 'poetic language appears as a dialogue of texts: every sequence is *made* in relation to another sequence deriving from another corpus, such that every sequence has a double orientation: towards the act of reminiscence (the evocation of another writing) and towards the act of summation (the transformation of this writing).'[75] If this is dialogism it seems to be something of a one-way conversation. The more interesting point however is that Kristeva's approach appears to court such indignation from the defenders of mathematical propriety, since it claims a parallel rigour that, from the latter's perspective, is impossible, since for them the rigour of the mathematical is indissociable from its 'proper' instantiation. Take for example, Kristeva's claim to break with the logic of identity and the 'exclusion of contradictions'. Without the principle of non-contradiction, we are led to what in classical logic is called 'explosion'—as the medieval scholars would have it: *ex contradictione sequitur quodlibet.* There are of course other logics, and mathematics is not inviolate, unchangeable or the single proper form of rational discourse; but it does cohere, as a discipline, around such principles, and its shifts are made by trace-

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[74] Alan Sokal and Jean Bricmont, *Intellectual Impostures: Postmodern Philosophers' Abuse of Science*, 2nd ed. (London: Profile, 1999), p.x. This book in turn of course provoked much backlash in the disciplines at which it took aim. I do not propose to resurrect the skirmish here, but note that actually much of the reception of the work, hailing it as a victory for common-sense over continental obscurantism, was more reactionary than Sokal and Bricmont themselves, and that while the accusation of 'abuse' of (mathematical) language is unwarrantedly defensive, in certain respects, they are not wholly wrong.

[75] Kristeva, 'Semiology of Paragrams,' p.30.

able arguments rather than rhetorical presentation. Which is to say, the mathematical material is 'worked through'.

Kristeva denatures mathematical notation by a poeticisation that renders it largely irrelevant in the supposedly transgressive calculus of *poetic logic*. Contrast this then with the Oulipo's use of scientific, mathematical or logical structures in poetic or literary construction. Rather than the poeticisation of mathematics associated here with *Tel Quel*'s poststructuralism (and post-Surrealism), the Oulipo's pursuit could be better characterised as the mathematisation of poetry. To put this in terms of Jakobson's dichotomy, it is a transfer of absent patterns into metonymic plane of linguistic construction. Whether this transfer is considered as metaphor in the sense of Jakobson's schema would depend on whether metaphor is taken, in the Aristotelian sense, as a perception of similarities, or whether it is the imposition (the construction) of similarities. It is in the sense of Oulipian practice as an *imposition* into the metonymic plane that a lack of theorisation of this operation becomes almost a necessity. Jakobson notes that, 'when constructing a metalanguage to interpret tropes, the researcher possesses more homogeneous means to handle metaphor, whereas metonymy, based on a different principle, easily defies interpretation.'[76]

It is possible to draw a loose parallel between the de-rationalisation of mathematical logic and the supposed 'irrationalism' of the Surrealists. In terms of the latter, Adorno famously disdains Surrealism as the enactment of a form of 'montage', aimed at a transformation or 'at best to awaken their latent language', but whose elements only 'make up the reality of an unchallenged common sense', which is 'powerless . . . insofar as it is unable to explode the individual elements. It is precisely montage that

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[76]Jakobson and Halle, *Fundamentals*, p.95.

is to be criticised for possessing the remains of a complaisent irrationalism, for adaptation to material that is delivered ready-made from outside the work.'[77] In the rupture of monologism, there is an irresolvable splitting of mathematical 'linearity' (although, for what it is worth, linearity has a more particular meaning in mathematics) in a way that mathematical logic, *intrinsically*, does not allow of itself. This is then, from the perspective of mathematics, a form of irrationalism, or at any rate, a dereliction of mathematical rationalism. The question is, has that mathematical rationalism been transgressed in any (socially or poetically) effective way, or is it in fact still bound to the terms of that mathematics in a way that, despite its gesture against it, only reconfirms something 'ready-made'? It similarly can be seen not to 'explode the individual elements', if we take these elements to be concepts from the corpus of mathematical logic. That is to say, it may only be a superficial dialectic that simply reaffirms its original object of negation through the act of transgression.

The analogy with Adorno's critique of Surrealism must of course remain highly qualified, since Kristeva also claims opposition to Bretonian Surrealism, dismissing its claim to unmediated irrationalism, its supposed 'mentalism and religiosity.'[78] Nevertheless, a Surrealist sympathy is not wholly absent from Kristeva's work (and indeed *Tel Quel* more generally, although more usually identified with the 'dissident' Surrealism of Bataille or Artaud), inasmuch as there is an irreducible element of the irrational, albeit in a contradictory entanglement with the rational: thus her theory of the 'thetic', as the chain of signification, and the semiotic 'chora', outside or prior to the thetic, and incompatible with it.[79] Signifying practice thus is:

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[77] Adorno, *Aesthetic Theory*, p.77.

[78] Julia Kristeva, 'The Subject in Process,' in *The Tel Quel Reader*, ed. Patrick ffrench, trans. Roland-François Lack (London: Routledge, 1998), p.168.

[79] There is also, particularly in the psychoanalytic work of Kristeva and *Tel Quel*, a significant debt

> … asymmetrically divided—neither absolutising the thetic into a possible theological prohibition, nor negating the thetic in the fantasy of a pulverising irrationalism: neither the intransgressable and guilt-producing divine fiat nor "romantic" folly, pure madness, surrealist automatism, or pagan pluralism. Instead we see the condition of the subject of significance as a heterogeneous contradiction between two irreconcilable elements— separate but inseparable from the *process* in which they assume asymmetrical functions.[80]

The Surrealist reference points for the development of this rational-irrational bind are with the 'dissident' developments of Artaud and Bataille. Thus Kristeva claims that the 'pulsional network, which is readable, for example, in the pulsional roots of the non-semanticised phonemes of Artaud's texts, represents (for theory) the *mobile-receptacle site of the process*, which takes the place of the unitary subject.'[81] There is here an appeal to the materiality of language, to 'vibrations … the palpitating life of gesture, of the body, of magic,'[82] which refuse the linearity of standard discursive logic. But again, for all that this describes a certain productive dynamic in the genetic situation of signification, it also represents, by contrast to the Oulipo, a withdrawal from a productive aspect of mathematical logic in itself—that is, as a non-significatory logic. Comparable here is Franco Moretti's accusation of a misreading of Joyce: Kristeva 'salute[s] in Joyce the "semiotic" subversion of the "symbolic" order: alas, exactly the opposite is true.' What Moretti reads in *Ulysses* is, rather than an appeal to an 'anthropocentric' narrative of romantic unity, a modernist 'polyphony' of 'special' languages

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to Lacan and his own Surrealist sympathies, but it is beyond the scope of this thesis to pursue that here.

[80] Kristeva, *Revolution in Poetic Language*, p.82.

[81] Kristeva, 'The Subject in Process,' p.134.

[82] Kristeva, 'Semiology of Paragrams,' p.45.

which remain divided, precisely because it is a novel of modernity—a 'genuine factory of meaning ... a sign of the division of labour that reigns within it.'[83] It is useful then, to consider that the Oulipian retention of the particularity of the poetic and mathematical logics, even while here it is not the question of the (dis)unity of the work as such that is at stake, bears with it the stamp of a similar division of modernity, whose strangeness needs to be discovered and interpreted, rather than masked by a structural totality of whatever sort.

Calvino's Structures

I want to end with a reading of Italo Calvino's 1979 work *If on a winter's night a traveller*, which is probably the most deliberate, overt and extensive Oulipian engagement with structuralist (and in fact more obviously poststructuralist) ideas. Calvino himself, more forthcoming than some Oulipians, acknowledges an interest in structuralism, 'which I immediately felt to be something that responded to my needs and to what I instinctively knew writing to be.'[84] This reading will function not simply to show this work's use of Oulipian methods, but also to bring to the fore the tension between structuralist, poststructuralist and Oulipian thought. Calvino, in many ways, is not a typical Oulipian, and *If on a winter's night a traveller* (henceforth *WN*) is not a typical Oulipian work. (It is in any case probably misguided to consider any such generality as a typical Oulipian or Oulipian work.) The main reason for asserting Calvino's distinction here is his *overt* engagement with the theoretical developments of the era, which

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[83] Franco Moretti, *Modern Epic: The World System from Goethe to Garcia Marquez*, trans. Quentin Hoare (London: Verso, 1996), p.206.

[84] Italo Calvino, 'An Interview with Italo Calvino, by Gregory L. Lucente,' trans. Gregory L. Lucente, *Contemporary Literature* 26, no. 3 (1985): p.246.

contrasts with the overwhelming avoidance of any such acknowledgment among most Oulipians. At the same time, there is also, in Calvino's use of theoretical forms as part of the constructive *material* of the novel, a very distinctively Oulipian relation to theory. This is constituted by a relation of praxis rather than descriptive subsumption: theoretical forms, of whatever sort, are, for the Oulipo, a prescriptive intervention in the subjective-objective dynamic of the production of works (which process is thus neither autonomous authoriality nor machine determination), rather than a descriptive account of the meaning or critical significance of those works. In fact, Calvino's *WN* performs something of both of these aspects—overt critical reflection and formal prescription—though in ways that are in neither case entirely straightforward.

The novel is presented as the opening chapters of ten disparate novels, interspersed with a framing or meta-narrative, in which 'you', the *reader*, encounter and read these chapters, before being frustrated by the interruption of your reading, for various reasons, as each text breaks off at a crucial or climactic moment. It begins in the second person, as 'you' settle down to read the (eponymous) book, and indeed the first framed chapter is then presented under that same title. Following the interruption of the first chapter, the *reader* attempts to find the remainder of the book (this first missing text is, according to the novel, due to a printers' error—several books having been mixed up) and encounters the second central character of the *other reader, Ludmilla*. From hereon, further opening chapters are encountered and a quest begins to find the original text for each of these in order to complete their reading. The quest becomes increasingly complicated as we meet further personae: the non-reader, the expert reader (the academic), the book-seller, publisher, translator, counterfeiter, and so on; all of whom are agents in the ecosystem of the novel, its production and consumption.

The composition of the 'found' chapters offers a kind of broad-level intertextuality, though perhaps initially only in what Julia Kristeva would call the 'banal sense of "study of sources".'[85] Although collected together these texts form a kind of bricolage of source texts, each of these texts themselves does not resolve to any reliable originary principle: they are rather shown to be counterfeits or fabrications of some sort, whose authenticity seems to recede further away as they are investigated. Rather than revealing an author, any potential sources become dissolved in the developmental complications of the text. Calvino's focus is, instead, on the figure of the reader, the act of reading, and the various forms of coherence thereby sought. Ultimately, this reader-incorporation extends 'beyond' the bounds of the book and thus meets a proposed (though impossible) finality in the figure of the 'actual' reader—the other pole of the textual process to the one that dissolves in the pursuit of sources. All of this seems, on the face of it, to represent some fairly standard poststructuralist themes, most obviously as manifested in Barthes's and Foucault's well-known essays on the author.

Increasingly convoluted scenarios arise that propose to explain the complications of the novel(s) in numerous ways, involving inauthentic sources, machine generations, translations (including fake translations) and other break-downs of originary textual stability—for example, at one point an attempted political plot is countered by concocted translations of subversive material hidden in novels.[86] In addition to the main

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[85] Kristeva, *Revolution in Poetic Language*, p.60.

[86] Calvino here reformulates aspects of the frame-narrative of the *Arabian Nights*: a Sultan suspects revolutionaries of communicating with conspirators, including his wife, by means of encrypted messages in Western novels provided for the Sultana's entertainment (another *reader* figure) as part of their wedding contract. In an attempt to defuse this activity, the Sultan demands that the texts be translated to render the messages irretrievable. However, the Sultana must also be kept reading and not get bored, in order to prevent the revolutionaries from communicating with her and triggering an attack (it is forbidden to interrupt her while reading). The works then must provide the necessary dramatic tension to

framing narrative and multiple levels of sub-frames, there is a penetration of layer upon layer of textual 'sources', none of which reaches an authoritative end point. This is a concern reflected in some of Calvino's theoretical writings. For example, in his 'Levels of Reality in Literature', written the year before *WN*, Calvino asserts that 'literature does not recognise reality as such but only levels.'[87] These 'levels', whether configured as 'boxes within boxes', or as contiguous on a singular plane, represent different fictional realms and thus form layers of 'metaliterature' which, at each stage, reflect, in *WN*, the text's self-awareness as fiction and as material construction, but with the diffusion of the reliability of any originary point. What ultimately do the 'successive layers of subjectivity' encountered in layered metanarratives resolve to? Calvino suggests that 'perhaps it is a phantom "I", an empty space, an absence.'[88] At the other end of the text is the tendency of the work to incorporate itself, a *mise en abyme*, tending towards the 'beyond' of textual expression. Calvino thus speculates 'perhaps it is in the field of tension between one vacuum and another that literature multiplies the depths of a reality that is inexhaustible in forms and meanings.'[89] *WN* thus appears as a play on the status of the textual 'object' where its boundary conditions have been problematised. That, at least, is a possible representation of the novel in broadly poststructuralist terms.

The lack of originary coherence implies the text's divisibility or potential break-

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maintain her interest, but must not be allowed to conclude, thus 'he [the translator] will break off this translation at the moment of greatest suspense and will start translating another novel, inserting it into the first through some rudimentary expedient; for example, a character in the first novel opens a book and starts reading.' Italo Calvino, *If on a winter's night a traveller*, trans. William Weaver (London: Minerva, 1992), p.125.

[87] Italo Calvino, 'Levels of Reality in Literature,' in *The Literature Machine*, trans. Patrick Creagh (London: Vintage, 1997), p.120.

[88] Ibid., p.113.

[89] Ibid., p.120.

down—as an intertextual side-effect—which renders the text susceptible to combinatorial analysis, a principle that is, from this perspective, readable as both structuralist and Oulipian (if the break-down also implies its analytical reversal into a constructive principle). Take for example the following assessment by Barthes in his 1971 'From Work to Text': 'if the text extends itself, it is as a result of a combinatory systematic ... Hence no vital 'respect' is due to the text: it can be *broken*; ... it can be read without the guarantee of its father, the restitution of the inter-text paradoxically abolishing any legacy.'[90] And, by comparison, the Oulipian constructive principle: 'combinatorics, for its part, studies configurations. It attempts to demonstrate the existence of configurations of a certain type. ... It is thus not surprising to learn that a systematic study of these problems revealed a large number of new mathematical concepts, easily transposable into the realm of language.'[91] Calvino presents this image of *breaking* as a material de-structuring of the novel at one point in *WN*: frustrated at the printer's error that has interrupted the first reading, losing the expected coherence of the single book, the *reader* imagines throwing the book across the room, 'through the slats of the Venetian blinds,' breaking it down into 'sentences, words, morphemes, phonemes,' then further, into atoms and elementary particles. The dissolution does not stop there—the book is 'reduced to ... the flow of information ... degraded into a swirling entropy,' before reaching its ultimate situation of 'nonbeing', 'to be lost in the most absolutely guaranteed undeniable negativity.'[92] Beyond this material dissolution of the text no irreducible essence or meaning remains, and it is tempting then to seek coherence elsewhere, echoing the famous contention by Barthes that it is only in reading that any

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[90] Roland Barthes, 'From Work to Text,' in *Image Music Text*, ed. and trans. Stephen Heath (London: Fontana Press, 1977), p.161.

[91] Berge, 'For a Potential Analysis of Combinatory Literature,' p.116.

[92] Calvino, *If on a winter's night a traveller*, pp.26–7.

unity of the text is made: 'the reader is the space on which all the quotations that make up writing are inscribed without any of them being lost; a text's unity lies not in its origin but in its destination.'[93] Similarly, in *WN* the fantasy of book destruction ceases, and we return to the search for the complete book, but it is, ultimately, the finality of a reading that is being pursued.

The 'book' that is sought here would figure as the closure within an indeterminate literary field. As Kristeva states, 'the book ... situated within the infinity of poetic language, is *finite*: it is not open, but closed, constituted once and for all; it has become a principle, *one*, a law, but it is only readable as such within a possible opening onto the infinite.'[94] Yet in the fact that these complete texts are not found, there appears to be a certain ambivalence regarding the unifying potential of reader as well as author. The *other reader, Ludmilla*, and her sister *Lotaria*, represent two poles of readerly possibilities in Calvino's novel. For Ludmilla, reading is a search for unity, for meaning and a retained faith in authoriality—'this ideal model—to say it in her words—is the author who produces books "as a pumpkin vine produces pumpkins."'[95] The ideal text here is thus akin to a natural production, with an organic coherence and unity. Lotaria, on the other hand, offers a quasi-scientific appraisal of texts, emphasising their constructedness. Thus, she claims to use a reading machine that statistically digests texts for her, breaking them down into frequency-ordered word lists.[96] The question is then raised of the efficacy of such textual digestion: is a machinic reading possible? (Later in

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[93]Barthes, 'The Death of the Author,' p.148 The familiar Barthesian take on the author is also rendered elsewhere in the novel—take, for example, the publisher's reflections on authors: 'the true authors remain those who for him were only a name on a jacket, a word that was part of the title, authors who had the same reality as their characters ... The author was an invisible point from which the books came, a void travelled by ghosts.' Calvino, *If on a winter's night a traveller*, pp.101–2.

[94]Kristeva, 'Semiology of Paragrams,' p.29.

[95]Calvino, *If on a winter's night a traveller*, p.189.

[96]Ibid., p.186ff.

the book, the break-down of this machine itself further problematises the operation.) Speculation follows that an inverse computational system could compose a novel from such a statistical reduction.

This computational process pursued by Lotaria's reading machine yields a breakdown that is still readable in human terms—the basic outline, genre and tenor of the books, something seemingly essential generated by a quasi-reading process; and its reversal—a writing machine would reconstruct the textual artefact from these 'elements'. However, the 'personality' of authorship, as a uniquely human guarantor of essential unity, has here become irrelevant, as linguistic and literary structures become only as vital as any other material elements of a mechanistically determinable universe once the insistence on a unifying 'spirit' of creation is abandoned. Such questions of textual generation are clearly of long-standing concern for Calvino: he asserts in his 1967 essay 'Cybernetics & Ghosts', that a writing machine, working with linguistic combinations, 'would bring to the page all those things that we are accustomed to consider as the most jealously guarded attributes of our psychological life ... What are these if not so many linguistic "fields"?'[97]

Calvino's essay was written the year before he was invited by Raymond Queneau to join the Oulipo, and the concern to de-mystify authorial process is clearly something more broadly Oulipian, even if, for the majority of the group, the possibility of full machinic automation was something to be avoided rather than actualised. The Oulipian position is rather, I would argue, that the materiality of linguistic and literary structures may be considered as discrete, manipulable entities, subject to certain forms

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[97] Italo Calvino, 'Cybernetics and Ghosts,' in *The Literature Machine*, trans. Patrick Creagh (London: Vintage, 1997), p.12.

of scientific analysis, but that the process of literary composition is still one of *work* that is not fully formalised. Calvino is in this sense more willing to countenance the replacement of the author than most of his Oulipian counterparts for whom, while any mysticalness of authorial inspiration is to be defused, the process, at least, does not become one of unmediated computation. Yet there still remains for Calvino, in the essay, the question of that which escapes language. Even while the author has been displaced as the guarantor of vital meaning, the reader is held to seek something more than a strictly rational analysis. Thus Calvino writes that 'what stirs literature is the call and attraction of what is not in the dictionary.'[98] If the literary work is in some sense capable of mechanical production, what constitutes its meaning, in the sense of its reception among readers, is not thereby prescribed. In this contention, Calvino again follows the Barthesian notion of the reader, rather than the author, as the producer of any potential coherence or vitality of meaning: 'once we have dismantled and reassembled the process of literary composition,' he writes, 'the decisive moment of literary life will be that of reading.'[99]

This shift—from writer to reader—can be seen to recur in Calvino's *WN* (along with the image of de- and re-composition by computer), although by this point, twelve years after 'Cybernetics and Ghosts', and with further developments in French theory, Calvino has taken on a more strongly poststructuralist thematic concern with the boundaries of the text, and the problem of the unaccountability of a hermetic system's outside to the system itself. The references to a 'void' or an absence are numerous: for example, the *reader's* observation that 'the claim to portray vital fullness revealed the void beneath'; elsewhere, in one of the framed tales, the narration begins to give

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[98] Ibid., p.18.
[99] Ibid., p.15.

way to self-consciousness of its language formation—a bridge is crossed, and beneath it a 'void': 'the story must also work hard to keep up with us, to report a dialogue constructed on the void … beneath every word there is nothingness.'[100] This place (or non-place) of the void in relation to a self-consciously textual narration may be taken to reflect Derrida's famous (and famously misunderstood) statement that '*there is nothing outside of the text* [there is no outside-text; *il n'y a pas de hors-texte*].'[101] But if so, it is here a reading of Derrida via Barthes—the notion of the void is a Barthesian adaptation, a defensive measure that substantialises what for Derrida is an aporetic dissolution by theory itself of its own conditions of possibility. It is also worth noting that the somewhat phenomenological concept of the 'reader' is a very Barthesian (rather than Derridean) category.

When Derrida refers to the 'blind origin of the work in its darkness',[102] it is not the darkness that conditions the blindness but the reverse—blindness as rationality's aporetic self-dissolution. 'Representation *in the abyss* of presence is not an accident of presence; the desire of presence is, on the contrary, born from the abyss (the indefinite multiplication) of representation, from the representation of representation, etc.'[103] Abyss here is a cognitive destination, posing as (and driving desire for) an origin. In Calvino's rendering, the void becomes more substantive as an originary condition, an invisibility that constitutes the possibility of the appearance of anything. Thus as characters contemplate the 'void' that is outside the work, they approach precisely that which cannot be contemplated as the condition of their own (fictional) apprehension.

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[100]Calvino, *If on a winter's night a traveller*, p.43, 83.

[101]Jacques Derrida, *Of Grammatology*, trans. Gayatri Chakravorty Spivak (Baltimore: Johns Hopkins University Press, 1997), p.158.

[102]Jacques Derrida, *Writing and Difference*, trans. Alan Bass (London: Routledge, 1978), p.7.

[103]Derrida, *Of Grammatology*, p.163.

The address to the reader then places that figure with a God-like view of proceedings, one which can only be named with a placeholder.

The book ends with a reiteration of this doubling, presented as alternatives, though in fact they are concomitant: 'The ultimate meaning to which all stories refer has two faces: the continuity of life, the inevitability of death.'[104] With the male and female readers in bed together (thereby fulfilling a well-established narratological prescription) and the light about to be extinguished, the *reader* contemplates finishing his reading before the darkness ensues—the darkness of the 'outside' reader, the end of the book.

It is worth returning for a moment to the possible misunderstandings or simplifications of Derrida's thought however, because it is possible to read *WN* as an enactment of just such a caricature. If we imagine that the characters themselves in *WN* could consider their own inscription as fictional beings, they may not be wrong to consider as 'nothing' the outside of their world-book. But Derrida's 'axiom' is not simply the assertion of a nothingness beyond empirical language nor that 'reality' is only a linguistic construction. Such nothingness risks taking on a quasi-substantiality of negative theology, and thus a return to the kind of metaphysical speculation quite antithetical to the more aporetic direction of Derrida's thinking. (What is at stake is the idea of an unmediated 'reality', that is so easily offended here.) Neither is it to affirm any kind of *absolute* outside, and with it an absolute *presence* of the 'text', however constituted. Rather it is that the condition of possibility of any apprehension at all is already a formal articulation, which is to say any contemplation of what escapes articulation is by necessity contaminated by the same.

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[104]Calvino, *If on a winter's night a traveller*, p.259.

Yet in a sense, the question of whether Calvino's text is 'adequate' to such a deconstructive programme is moot. The point is, rather, that such a theoretical context is part (though only one part) of the *material* for Calvino's own literary games. As A. J. Greimas (whose work provides an Oulipian key to Calvino's novel, as I will outline below) notes, regarding the theoretical leanings of *WN*, Calvino is 'un auteur très peu sécurisant ... Quiconque a tant soit peu fréquenté ses écrits sait bien qu'un tel traité, manifestation de l'hybris calvinienne, doit être lu au déla des évaluations du sérieux et du frivole, avec sérénité et un soupçon de sourire.'[105] ['*A very unsafe author. ... Anyone who is familiar with his writings knows well that such a treatise, a manifestation of Calvinian hubris, must be read beyond the evaluations of serious and frivolous, with serenity and a hint of a smile.*']

With this caution in mind, I want then to consider Jürgen Habermas's reading of *WN*, in which he claims to find an unequivocal advocacy of deconstruction—a concept which Habermas is quite keen here, as elsewhere, to dismiss—but fails to appreciate the specifically Oulipian aspects of the text. Habermas himself presents something of a theoretical caricature of Derrida as the destructive demon, a fictionaliser of reality, for whom, he asserts 'the house of "being" is itself sucked into the maelstrom of an undirected linguistic current.'[106] Habermas interprets *WN* in this light as part of a theoretical project attempting to 'reach' outside the fictional realm to the 'reality' of the reader. Calvino, he states, 'wants, in literary practice itself, to make the border between fiction and reality perceptible as mere appearance, as a difference that is generated by the text itself—and to make this text (like every other) recognisable as

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[105] Algirdas Julien Greimas, 'Avis au Lecteur,' *Actes Semiotiques - Documents* VI, no. 51 (1984): p.3.
[106] Jürgen Habermas, 'Philosophy and Science as Literature?' In *Postmetaphysical Thinking: Philosophical Essays*, trans. William Mark Hohengarten (Cambridge, Mass: MIT Press, 1992), p.210.

a fragment of a *universal* text.'[107] Calvino's move in *WN* is to present a framing text that posits, and reaches into, its own outside —the second person protagonist, perhaps at its most plausible (or where its implausibility is least apparent) in the opening words: 'you are about to begin reading Italo Calvino's new novel.'[108] It is of course not quite representative because you *already* are reading it, an irreducible 'not quite'. This outside-text of the *reader*, the non-original sources, the uncompleted narratives all offer, for Habermas, an 'acting out' of Derridean theory.[109] *WN* is a text that, in this depiction of theory, he asserts, privileges the fictional over the theoretical text, or rather, renders theory a branch of fiction as 'an exercise that is supposed to bring to light the truth *about* literature: there are no originals, only their traces, no texts, only readings, no fictional worlds *in contrast to* a reality.'[110] Habermas thus sees the figure of the 'reader' within the fiction as an illegitimate territorial claim, an attempted grasp into 'reality' to bring it within its own compass. His critique then lies in the (uncontroversial) observation that the actualisation of the 'reader' (as one of Calvino's *dramatis personae*) in the fictional narrative, is not, and cannot correspond to, any real-world reader for whom it forms the object of reading. Thus, he writes, 'the fiction that transcends itself falls prey to the laws of fiction. What Calvino wanted to demonstrate *with* the novel has instead to be portrayed *within it*: the transition of the novel into life and the presentation of life as reading.'[111] This critique turns on an empirical appeal to the illocutionary impact of actual speech as opposed to fictional representation. Which is to say, in communication, rational engagement is effective, or at least bears with it the expectation of effect, in a way in which literature—by virtue of the condition of

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[107] Ibid., p.214.

[108] Calvino, *If on a winter's night a traveller*, p.3.

[109] Habermas, 'Philosophy and Science as Literature?' p.216.

[110] Ibid., p.217.

[111] Ibid., p.222.

fiction—does not.

Habermas wants to identify the specific difference of the fictional text, to retain the differences between the scientific, the literary and philosophical, which he sees threatened by his interpretation of 'deconstruction' as 'falsely turning science and philosophy into literature.'[112] However, this reading takes as a too monological advocacy only the aspects of Calvino's text that could be aligned with what is in any case only a caricature of Derrida's thought. Regardless of how well Calvino may be assessed to have interpreted the poststructuralist theory that informs his work, there is more at stake in *WN* than these problems of fictionalisation and the presentation of fictional reality. What Habermas does not acknowledge, and what complicates this picture somewhat, is that the novel is, according to Calvino's own claims, *constructed* on the basis of a model adapted from A. J. Greimas's semiotic squares, and further, that this model functions as a constraint in the Oulipian sense, a structuring device not demanded by any internal necessity of its thematic material. This latter point is particularly pertinent because it offers a methodological coherence to the productive conditions of a novel that, at least by Habermas's reckoning, represents an attempted textual dissolution of 'reality'. Thus if it were appraised as a 'depiction' of deconstruction (whatever that might mean), such an appraisal would also have to contend with the depiction of Greimassian semiosis, and of Oulipian constrained writing practice. Clearly, the suggestion that there is a structuralist cohesion of the work problematises any straightforwardly poststructuralist reading of the kind (negatively) proposed by Habermas. Calvino's use of Greimassian models renders that disparity as acute as it could be, since Greimas's semiotics is itself generally acknowledged as the nearest

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[112]Ibid., p.226.

approach made by structuralist thought to the rigour of the mathematical sciences.[113] Indeed, Calvino himself refers to Greimas as 'the inflexible master of methodological rigour.'[114] Just as importantly, the Oulipian aspect complicates this further by rendering what, in structuralism proper, is a *descriptive* science of meaning as a *prescriptive* programme for the composition of a novel. That is, inasmuch as Greimas's proposal of a universal, deep structure of meaning enters into the work, it is not claimed as a description of the existing work (although, to some extent it also fulfils that role in its presentation of the scheme, as I will describe below), but as a prescription for structures around which the work, it is claimed, was composed. This prescription is, however, not total, and indeed, the specifics of the 'truth' of such structural analysis in its own terms is, in this prescriptive reversal at least, not directly the issue.

Calvino's *Comment j'ai écrit un de mes livres* [*How I Wrote One of My Books*]— its title a reference to Raymond Roussel's 1935, posthumous (partial) revelation of his own 'process', *Comment j'ai écrit certains de mes livres* [*How I Wrote Some of My Books*]—appeared three years after the novel it was used to structure, as Number 20 of the *Bibliothèque Oulipienne* series.[115] It presents the Oulipian aspect of the book—a constraint system under which it was written. Each framing chapter is here given a formula—a 'model square' (or rather, beginning with a single model for the first chapter, an increasing number of squares up to the middle chapters, and then an incremental

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[113]For example, in François Dosse's extensive survey: 'Closest to the hard sciences and to mathematical language, semiotic structuralism was the most formalised branch of structuralism.' Greimas, he notes, was its 'first promoter', who 'sought to encompass all of the sciences of man.' Dosse, *History of Structuralism, Vol I*, p.210.

[114]Italo Calvino, 'In Memory of Roland Barthes,' in *The Literature Machine*, trans. Patrick Creagh (London: Vintage, 1997), p.302.

[115]It also appeared a year later in *Actes Semiotiques—Documents* with a foreword by Greimas himself. For an English version, see Italo Calvino, 'How I Wrote One of My Books,' in *Oulipo Laboratory: Texts from the Bibliothèque Oulipienne*, trans. Iain White (London: Atlas Press, 1995).

retraction down to one again for the final chapter). The model diagrams are accompanied by an explanatory text—a free-verse quatrain accompanied by a distich. The first is shown in figure 3.2.

$$L \longrightarrow l$$
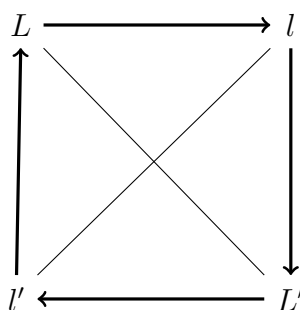
The reader who is there (L) is reading the book that is there (l)
The book that is there relates the story of the reader who is in the book (L')
The reader who is in the book does not succeed in reading the book in the book (l')
The book that is in the book does not relate the story of the reader who is there

The reader who is in the book claims to be the reader who is there
The book that is there claims to be the book that is in the book

Figure 3.2: Calvino's model square

As Calvino states, this is a 'personal adaptation' of A. J. Greimas's semiotic square. The latter, for Greimas, represents 'the elementary structure of signification', upon which the *whole* of the semantic universe—that is, the world as meaning, as the coherent totality of meaning—is organised.[116] Greimas's square opposes signification (S) to non-signification ($\bar{S}$), the axis of contradiction. Each side of this axis is comprised of a pair of contrary 'semes' (semiological units—s_1 and s_2), such that $s_1 - \bar{s}_2$, and $s_2 -$

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[116] Algirdas Julien Greimas, *On Meaning: Selected Writings in Semiotic Theory*, trans. Paul J. Perron and Frank H. Collins (Minneapolis: University of Minnesota Press, 1987), p.50.

$\bar{s}_1$ bear relationships of implication.

$$S$$

$$s_1 \longleftrightarrow s_2$$

$$\bar{s}_2 \longleftrightarrow \bar{s}_1$$

$$\bar{S}$$

$\longleftrightarrow$: relation between contraries
$\longleftrightarrow$: relation between contradictories
$- - - - - - - -$: relation of implication
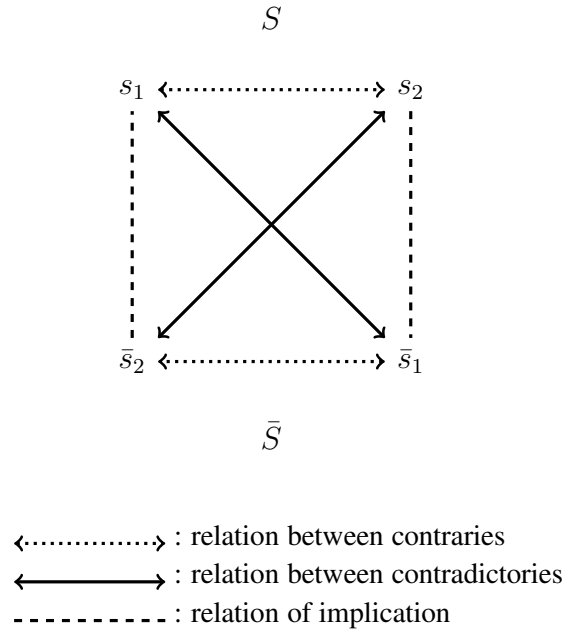
Figure 3.3: Greimas's model square

The basic square, shown in figure 3.3, is here presented as a structure of significa-

tion in its fully abstracted form. It is thus fairly simple to relate to the 'model square',

of the first chapter at least, in Calvino's 'adaptation'. Firstly, the primary opposition

of S and $\bar{S}$ represent the two horizontal axes of a world 'that is there' and the world

within the book, each represented by a reader and a book. In Calvino's model, s_1 is

fulfilled by 'the reader who is there (L)', and is contrary to s_2, 'the book that is there

(l)'.[117] Similarly, $\bar{s}_1$, 'the reader in the book (L')' and $\bar{s}_2$ 'the book in the book (l')'

are contrary semes. For both cases, the act of reading (or the attempt at least) estab-

lishes the opposition of two semes, reader and book, in the first case 'successfully'

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[117]I have retained here the notation of L and *l*, from both the original French and Iain White's trans-
lation, representing *Livre* (book) and *lecteur* (reader) respectively.

('the reader who is there is reading the book that is there') and 'unsuccessfully' in the second case ('the reader who is in the book does not succeed in reading the book in the book'). The vertical axes, of *implication*, then connect 'the reader who is there' to 'the book in the book' and 'the book that is there' to 'the reader in the book' in the mode of narrative relation (again, with a disparity of success): 'the book that is there relates the story of the reader who is in the book' ($s_2 - \bar{s}_1$); 'the book in the book does not relate the story of the reader who is there' ($\bar{s}_2 - s_1$). Finally the 'distich' presents the diagonal relations of contradiction: 'the reader who is in the book claims to be the reader who is there' ($\bar{s}_1 - s_1$); 'the book that is there claims to be the book that is in the book' ($s_2 - \bar{s}_2$). Clearly the 'claims' here are false, placed, as they are, on the relation of contradiction according to Greimas's schema. Thus the model square prescribes that the book is not the book in the book, and the reader is not the reader in the book. It is clear then, that what Habermas presented as a conclusive point to undermine the plausibility of an apparent 'fictionalising' of reality has actually been determined at the very first step in the programmatic *prescription* for the novel.

Greimas describes 'narrative structures as an autonomous instance within the general economy of semiotics.'[118] It is a surface level manifestation of deeper semiotic structures. He acknowledges the similarity of his squares to Lévi-Strauss's paradigmatic myth structures—that is, as a correlation of two pairs of binary oppositions. This, he states, is the 'primary nucleus of an elementary morphology', but it may be 'narrativised'. That is, 'signification, to the extent that one seeks to find it in an object, appears as an articulation of stable fundamental relations, it can also be represented dynamically, if one considers it as an apprehension or production of meaning by a

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[118]Greimas, *On Meaning*, p.65.

subject.'[119] What Calvino appears to have done then is to have taken this mode of representation of possible apprehension of meaning—and here it becomes the *meta-meta*-narrative of Calvino's novel[120]—and use it, in Oulipian fashion, as the prescribed structure for the generation of meaning in narrative construction, effectively the *application* of a science. Calvino's novel represents a shift from the projection of a universal structure of interpretation onto existing literary works to the generation of such a work in accordance with those same principles. The former, descriptive science of literature is well-established in structuralist work; the latter, as a genetic structure of literature, rather less so, if at all.

It should, however, be stressed that Calvino states that his models are an 'adaptation' of those of Greimas rather than a direct application. The main apparent diversion of Calvino's square from its Greimassian prototype is the unidirectionality of the vectors linking the semes. In the first example above they trace the perimeter of the square in sequence, but this is not so in every case. In fact, the five squares of chapter 5 each consist of the same arrangement of semes, only distinguished by the direction of the relations (this is not, incidentally, an exhaustive list of arrangements). What is significant about this unidirectionality is that it renders Greimas's system of paradigmatic relations into one of narrative continuity (of sorts). The directed-ness of action, in a narrative application, introduces a temporal implication to what, in purely formal terms, is a static system of oppositions and implications. This marks most clearly the reversal of the usual direction of structuralist interpretation—the flattening of diachronic narrative such that it allows the relations of its 'constituent units' to be appraised synchronically,

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[119]Ibid., p.68.

[120]Greimas observes that, considered in such terms, any analysis such as I am pursuing here forms a fourth level discourse. Greimas, 'Avis au Lecteur,' p.4.

an interpretative operation that is crucial to Claude Lévi-Strauss's analysis of myth.

Furthermore, in this adaptation and in its instantiation in the end novel, 'other schemata and other constraints' have also been used, as Calvino notes (without expanding) at the end of the 'explanatory' essay.[121] It is wise therefore to note Greimas's own caution: 'rien ne serait-il plus faux que de chercher à homologuer, par exemple, la présentation carréiforme de son texte avec quelque théorie—standard ou post-standard—du carré sémiotique.'[122] ['...*nothing would be more wrong than to look to validate, for example, the presentation of the square-form of his text with some theory—standard or post-standard—of semiotic squares.*'] The texts—the novel and the programme—are not simply a theoretical manifestation, an actualisation of structuralist (or poststructuralist, or indeed any other) principles in novelistic form (as Habermas claims of the novel at least), but represent rather an engagement *with* theoretical forms not so much motivated by the value of their criticism or the truth of their interpretation, as by the way in which the forms they propose can be adapted as constructive material. In this case those former aspects—of interpretative value—might even be irrelevant, and yet the forms are worked with (or perhaps it should be said, played with) quite seriously—the proposed functions, the 'deep' structures entailed, are engaged as objective material that constrains the hand of the subjective producer.

At the same time of course these texts can be read as reflections of the poststructuralist theoretical context of the late seventies; but some caution, I would argue, should be maintained therefore before the determinedly direct theoretical representation that Habermas claims to uncover is accepted. It is rather the case that, as Greimas

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[121]Calvino, 'How I Wrote One of My Books,' p.20.

[122]Greimas, 'Avis au Lecteur,' p.3.

writes, the work offers 'ce qu'on pourrait appeler "idéologie de la forme", censée interpréter l'attitude, consciente ou inconsciente, d'un auteur, d'une époque ou d'une culture, sur ses propres signes.'[123] ['…*what one could call "ideology of form", supposed to interpret the conscious or unconscious attitude of an author, an epoch or a culture, to its own signs.*'] From this perspective, the work may be read precisely as a product of, and a sly reflection back upon, the projected universality of the 'scientificity' of the epoch, which it cannot resist from a transcendent critical position. The manifestations here of deep structures as a kind of universal scientific rationality can be taken as evidence of Horkheimer and Adorno's diagnosis that 'for enlightenment, anything which does not conform to the standard of calculability and utility must be viewed with suspicion.'[124] Art's response to this cannot, however, simply be, the Oulipo suggests, to transform itself into science, nor (as in Surrealism) to resist it as irrationalism: as Adorno states in *Aesthetic Theory*, 'art is not an arbitrary cultural complement to science but, rather, stands in critical tension to it.'[125] The artwork that thus succeeds in maintaining this tension needs to adopt something of science's rationality, but in a refracted form that makes the blind instrumentality of the latter available to critical reflection. It is thus that Calvino's work here engages in a committed and detailed fashion—as, I propose, Oulipian methodology does at its best more generally—with that scientificity that is both its condition of possibility and its ambivalent object of implicit critique. That is, it allows it to be seen as an arbitrary prescription of the work, rather than scientific description that claims its part in a rational totality.

The shift from description to prescription represents a significant reversal of the

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[123]Ibid., p.4.
[124]Horkheimer and Adorno, *Dialectic of Enlightenment*, p.3.
[125]Adorno, *Aesthetic Theory*, p.315.

usual structuralist interpretative technique with narrative, which is, in narrative or mythological analysis, the abstraction of the paradigmatic from the syntagmatic—achronic relations from temporally ordered narrative units (or indeed sub- or super-narrative units). Instead, what we find in Calvino, as in certain other Oulipian texts, is the (re-)construction of a narrative order from scientific (or quasi-scientific) schemata of mythological, folkloric, anthropological, or indeed, abstractly, any structure given synchronic presentation. Or in other words, what is 'performed' is the projection of a paradigmatic system of relations onto a syntagmatic structure, a syntax of narrative.

Calvino's adoption of Greimas's semiological analysis is the clearest, perhaps the sole, case of overtly structuralist methodology being used as the basis of an Oulipian constraint. However, the relation to its theoretical validity is non-committal. In fact, what makes Greimas's theory susceptible to criticism is what makes it particularly suitable (as constraint) for Oulipian adoption. That is, insofar as Greimas represents likely the farthest extent of a project true to Saussure's proposal of a 'general semiology',[126] the abstract reduction to core formal relations tends towards the hypostatisation of form itself—as François Dosse notes, 'there was a steep price for the quadruple negation of the first person pronoun, of the subject, of intersubjective dialogue, and of the here and now with respect to space and time, and Greimas's theory rather quickly ran onto the shoals of an impoverished narrative reality, in favour of an ontologised structure.'[127] What renders the semiological square suitable as a model of narrative production (rather than description) is precisely its abstract rigidity—it is this that al-

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[126] Saussure, *Course in General Linguistics*, p.18.

[127] Dosse, *History of Structuralism, Vol I*, p.215 In fact, Greimas himself concedes this tendency towards the hypostatisation of form: 'any metalanguage we are able to imagine for the purposes of speaking about meaning turns out to be not only a signifying but a substantifying language as well, which freezes all intentional dynamism into a conceptual terminology.' Greimas, cited in Jameson, *The Prison-House of Language*, p.126.

lows it to form a constraint for Calvino. Considered as a development of scientific rationality in the domain of narrative, Greimas's model can be adopted in two ways: first, a claim to be the true and universal structure of meaning (within which literature is subsumed); and second (which may or may not fully respect the 'truth' of the first even while it respects its form), the manifestation of a structure whose *use* in literary production is an innovation. The former aspect implies the a-temporality of narrative form; the latter effects a re-temporalisation (as the methodically new) by means of its artistic use.

In a move to avoid the hypostatising tendency of Greimas's theoretical structures— specifically his actantial model, which functions, effectively, as a completion of Propp's categorisation of 'dramatis personae', incorporating the lacking (according to Lévi-Strauss) semantic analysis[128]—Jameson suggests that it is better considered as a process performed on a text rather than a revelation of that text's underlying static structure, that is, that Greimas's squares do not define the underlying structure itself, but offer analytic strategy towards finding those invariants.[129] The upshot of this is precisely the reverse of the Oulipian adaptation—in Jameson's attempt to restore its theoretical viability (attempting to keep a certain fluidity of its signifying concepts), the theory's specification of structural determinants is softened, so that it becomes *less* prescriptive; but—again—what the Oulipian project demands—what, in part, defines the constraint—is hard structural determinants. For formal-theoretical materials to become objects of deliberate use, they must take on a certain substantiality, yet this

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[128] See Algirdas Julien Greimas, 'Reflections on Actantial Models,' in *Narratology: An Introduction*, ed. Susana Onega Jaen and José Angel García Landa, trans. Daniele McDowell, Ronald Schleifer, and Alan Velie (London: Longman, 1996).

[129] 'It seems more revealing in this connection to use the language of process rather than that of substance and to speak of the "actantial reduction" as a type of operation performed upon a text, instead of the "actantial model" as a static vision of structure.' Jameson, *The Prison-House of Language*, p.125.

substantiality is not one that is strictly related to their viability in terms of any experiential applicability or 'truth'. Rather the internal coherence is what is of value, and again, this is the mark of formalism over referential theory, that it needs no recourse to experiential grounding. Furthermore, the Oulipian use of such formalism is not a reflection of that theory's assumed totality; it only forms a component part of the artistic materials adopted by the Oulipian constrained writer. Given the tendency of formalist thought in the twentieth century, this approach is not without a certain irony: the more hermetically rigorous the constraint, the better it functions as such, but the less it has any kind of meaning. What it does have is a certain resistance as an abstract material, making its use comparable to artisanal processes, which will be the topic of the following chapter.

4.   Craft, Construction and Constraint

Artisan des mathématiques je salue

—Jacques Roubaud[1]

Oulipian Craft

In the previous chapter, I presented an account of the scientific aspirations of the for-
malist and structuralist developments of the human sciences in the twentieth century as
the object of a certain ambivalence, from the perspective of Oulipian practice. On the
one hand, the homogenising and rigidifying tendency of totalising scientificity, where
taken as programmatic, was held to be antithetical to artistic or literary production (that
is, at the point where descriptive structures reversed into prescriptive ones). On the
other—and this is, I would suggest, the particularly Oulipian context—the tendency
towards reification in such rationalist conceptual patterns of the modern world could
render these forms as distinctly modern *material* (that is, whatever must be worked

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[1]Jacques Roubaud, *Mathématique: (récit)* (Paris: Seuil, 1997), p.76. 'I hail you craftsman of math-
ematics.' Roubaud, *Mathematics*, p.87.

with) for artistic construction. To put this in Adorno's terms, the absolutising tendency of modern rationality which, he avers, compels the artistic process to develop its own rational-constructive measures, here becomes not just a mimetic aspect of the work, but, in the character of its hypostatic domination, part of the constitutive material upon which the artistic process may draw. With this, and particularly with the sense that this modern material is itself *worked*, the constructive process of the modern literary work, in the Oulipian mould, begins to resemble something of an older conception of craft. This resemblance is in the framework of a broad concept of material, as anything which, in Adorno's terms, 'artists work with, . . . the sum of all that is available to them.'[2] Modern art, by Adorno's conception, is driven towards ever more subjectively willed constructive principles, while craft, as a now-redundant antecedent of the modern conception of art, is deemed aesthetically null. This shift is traceable in terms of materials. I aim to show that craft, considered in light of its Oulipian adaptation, is actually not so distant from what Adorno means by construction, and has aspects that may yet be recovered, redeemed or reinvented; at least if Adorno's artistic categories—in which material here has a focus—are broadened somewhat.

Although the idea of a craft of formal materials is a result suggested by the previous chapter, the prevalence of the craft concept is implicit in the whole of the Oulipian project, as one of skill in the manipulation of their primary medium—language. 'Craft' may also be encountered quite explicitly in the group's own descriptions of their practice. For example, an early document of the group's intentions states their intention 'to inventory—or to invent—the procedures by which expression becomes capable of transmuting itself, solely through its verbal craft [*facture verbale*], into other more or

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[2]Adorno, *Aesthetic Theory*, p.202.

less numerous expressions.'[3] Queneau, in his 'Potential Literature', as one of three primary characteristics, designates their researches as 'craftsmanlike' [*artisanales*].[4] And a little later, Jacques Roubaud offers, in a 1977 essay, the following proposition: 'Oulipian work is craftsmanlike [*artisanale*]'; and that they have 'a claim to craftsmanship [*revendication d'artisanat*].'[5]

The artisanal claim is inscribed in the group's name: the *Ouvroir*, which, as I noted in my introduction, is inadequately translated by the English term 'workshop'. In fact, Raymond Queneau, in his 1967 *TLS* article, 'Science and Literature', written in English, himself uses the term 'workroom',[6] but 'workshop' is the more usual English translation. The word is carefully chosen: Queneau, in his programmatic essay 'Potential Literature', offers, as part of the breakdown of the group's name: '*Ouvroir* because it intends to work,'[7] thus setting out the Oulipo's practical intent. In a similar vein, Jean Lescure recalls that the term '*ouvroir* … flattered the modest taste that we shared for beautiful work and good deeds.'[8] What Lescure alludes to here is the word's sense of charity, modest scale, communal production and above all the handicraft nature of a non-industrial and prosaic (rather than poetic) kind of work—all of which are in some sense characteristic of Oulipian activity. (The sense of 'charity' is perhaps not immediately obvious, but it should be recalled that the Oulipo's aim, in

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[3]Oulipo, 'The Collège de Pataphysique and the Oulipo,' p.49. Oulipo, 'Le Collège de 'Pataphysique et l'Oulipo: Présentation des travaux de la Sous-Commission dans le Dossier 17 du Collège de 'Pataphysique,' in *La littérature potentielle* (Paris: Gallimard, folio essais, 1973), p.37.

[4]Queneau, 'Potential Literature,' p.51. Raymond Queneau, 'Littérature potentielle,' in *Bâtons, chiffres et lettres* (Paris: Gallimard, 1965), p.322.

[5]Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.85. Jacques Roubaud, 'La mathématique dans la méthode de Raymond Queneau,' in *Atlas de littérature potentielle* (Paris: Gallimard, folio essais, 1981), p.53.

[6]Queneau, 'Science and Literature,' p.864.

[7]Queneau, 'Potential Literature,' p.51.

[8]Lescure, 'Brief History of the Oulipo,' p.33.

the beginning at least, was to provide tools for writers rather than to create literary works.[9]) *Le Petit Robert* defines *ouvroir* as: '1: Lieu réservé aux ouvrages de couture, de broderie. . ., dans une communauté de femmes, un couvent. 2: Atelier de charité où des personnes bénévoles faisaient des "ouvrages de dames" pour les indigents ou des ornaments d'église.' ['*1: Place reserved for sewing, embroidery . . ., in a community of women, a convent. 2: Charitable workshop where volunteers did "ladies' work" for the destitute or made church ornaments.*'] Noël Arnaud, in his 'Prolegomena to a Fourth Oulipo Manifesto, or Not', reiterates these meanings, and recalls discussions with Albert-Marie Schmidt in which the latter 'was aware of the successive or parallel definitions of the word *ouvroir*; he saw in it above all a secluded place where people work together on a difficult task, where people strive to elaborate new techniques, not knowing whether the latter will produce results or explode sadly like a child's balloon,' adding that 'this aura of the trade guild with its slow and precise elaboration of the "masterpiece" in its newness, its originality steeped in the most ancient lessons of the masters, suited this subtle and perverse spirit.' In addition to the definitions already set out, Arnaud adds:

> . . . an *ouvroir*—a word that has fallen into disuse—once denoted a shop and, as late as the eighteenth century, a light and mobile shop made of wood, in which the master cobblers of Paris displayed their wares and pursued their trade. The word could also denote that part of a textile factory where the looms are placed; or, in an arsenal, the place where a team of workers performs a given task; or a long room where the young women in a community work on projects appropriate to their sex; or a charitable

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[9]See Queneau, 'Potential Literature,' p.51.

institution for impoverished women and girls who found therein shelter, heat, light, and thankless, ill-paid work, the result of which these institutions sold at a discount, not without having skimmed off a tidy profit, thus depriving the isolated workers of their livelihood and leading them (as it was charged) into vice.'[10]

The word *ouvroir* is cognate with the verb *ouvrer*—to make, work on or fashion manually; *ouvrier*—a manual worker; and also *ouvrage* and *oeuvre*, both of which denote (a) work in the object-sense. Yet these two latter associations also suggest a certain playful ambivalence: *ouvrage* is a piece of work in the prosaic sense, while *oeuvre* tends to relate to *art*-works (in English, of course, we take it to mean the total collection of works of a given artist), and thus objects that, in some sense, transcend their merely empirical status. That there is something at stake in this etymological ambivalence is indicated by Jacques Roubaud's comments on Queneau's *Cent mille milliards de poèmes*:

> The first properly Oulipian work [ouvrage oulipien] par excellence, claimed as such by the Oulipo, is a work that exhibits potentiality in all its force: the *Cent mille milliards de poèmes* ... In his cmmp, it seems clear to me that RQ casts potentiality in the service of composition, but not of literature. That book is not, in the sense understood by FLL, an Oulipian work [oeuvre oulipienne].[11]

The Oulipian work—*ouvrage*—is thus a craft of making whose significance is

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[10] Arnaud, 'Prolegomena,' p.xii.

[11] Jacques Roubaud, 'Perecquian OULIPO,' trans. Jean-Jacques Poucel, *Yale French Studies*, no. 105 (2004): pp.100–1.

not simply subsumed by what it makes; that is, it validates potential as such. The end-work, in which this potential might find its actualisation, the work of literature—*oeuvre*—is a separate (though of course related) concern. This reiterates what I have elsewhere noted, that the Oulipian project—put bluntly—is to develop methods rather than end-works. However, this emphasis on composition as such also leans towards a valorisation of the craft of making that is, while not independent of the artwork itself, able to be approached critically in a way that is not subsumed by the latter concept. It shifts the focus of writing to the act of writing itself and the materiality of language. Jean Lescure writes:

> Language (literary language) doesn't manipulate notions, as people still believe; it handles verbal objects and maybe even, in the case of poetry …, sonorous objects. Just as in painting the dissimulation of the object of reference by grids of non-figuration claimed less to annihilate this object, table, landscape, or face, than to divert attention toward the painting object, a certain number of sentences written today fix the attention of the observer on the singular object that is literary language.[12]

The constraint makes a demand of the writer to be more deliberate, more rational, in the construction of the text. Here the texture of letters, words, sentences is at the forefront of compositional concerns and language is not simply the transparent *means* to express something.

That there is (or can be) something craft-like in writing is, on the face of it, a rediscovery of older concepts of art. The separation of art from craft is, as is well

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[12]Lescure, 'Brief History of the Oulipo,' pp.35–36.

known, a relatively recent development: art is a shifting category. Since antiquity, and still in the middle ages, writing was associated with grammar and rhetoric, such that the skill of composition was not subsumed by the importance of 'creativity'. This is not to say that the medieval poet simply followed rules, but rather that the 'art of rhetoric' provided the framework for poetic invention and thus a harmonisation of social form and artistic composition.[13] There is, in the Oulipo's project, an explicit recovery of certain outmoded writing forms characterised by this craft-like skill of their production. Oulipians frequently cite the *Rhétoriqueurs* (or *Grands Rhétoriqueurs*), a group of court poets of the fifteenth and early sixteenth century (called 'anticipatory plagiarists' by the Oulipo). Their work comes from an era where poetry was not yet classed separately to rhetoric, though their use of intricate formal devices represents a particular extreme of the valuing of technical skill in composition (to the disdain of some).[14] One of the Oulipo's founding members, Albert-Marie Schmidt, researched and wrote extensively on the *Rhétoriqueurs* and Baroque poets.[15] Jacques Roubaud writes:

> A family of Plagiarists of the Oulipo, the Rhétoriqueurs, dubbed 'Grands'
>
> by pleonasm and redundancy, were, in the fifteenth and beginning of the
>
> sixteenth century, the disciples and assiduous copycats of the Oulipo. In
>
> fact, the Rhétoriqueurs borrowed from the Oulipo their conception of lit-

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[13]Shiner, *The Invention of Art*, p.32.

[14]See Alex Preminger and T. V. F. Brogan, eds., *The New Princeton Encyclopedia of Poetry and Poetics* (Princeton, Princeton University Press, 1993), p.1052. In Ernst Curtius's book on medieval European literature, the *Rhétoriqueurs* merit only a passing mention in a somewhat dismissive section on formal mannerisms: 'the mannerist wants to say things not normally but abnormally. He prefers the artificial and affected to the natural.' Lipogrammatic, pangrammatic and alliterative schemes are described as 'trifling', 'absurd', 'barbaric'. Ernst Robert Curtius, *European Literature and the Latin Middle Ages*, trans. Willard R. Trask (Princeton, Princeton University Press, 2013), p.282ff.

[15]Motte, *Oulipo Primer*, pp.189–90.

> erature: they consider themselves craftsmen of language and fashioned
> themselves as 'facteurs' (crafters): that is to say, as artisans, joiners, or
> cobblers of the word.[16]

The term 'anticipatory plagiarism' encapsulates the Oulipo's dual relation to tradition—the prizing of the new alongside the recovery of the (apparently) outdated in a relation that is at once ironic and respectful of precedence.[17] The earlier Occitan *Troubadours*, who include Arnaut Daniel (fl.1180–1200), the devisor of the sestina form, are considered by the Oulipians in similar terms. Roubaud classes the *Troubadours* as those who 'fashion themselves as "labourers" of language, as "blacksmiths", or, sometimes more arrogantly as 'goldsmiths' of the word.[18] Traditionally, the sestina is a poetic form of six six-line stanzas with a permutational progression for the sequence of end-words (123456, 615243, 364125, 532614, 451362, 246531)—a diagram tracing this progression takes the form of a spiral (which is, coincidentally or not, reminiscent of the 'grand Gidouille', the spiral on the belly of Jarry's Ubu). The sestina is one of the Oulipo's favourite rediscoveries, and its form has been the subject of Oulipian researches, particularly by Queneau and Roubaud. This has led to the generalisation of the form as the *n-ina* or *Quenina* along with the positing of the series of prime numbers that are susceptible to the form as 'Queneau numbers'.[19]

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[16] Roubaud, 'Perecquian OULIPO,' p.103.

[17] Noël Arnaud writes in the preface to the first compilation volume of the *Bibliothèque Oulipienne*: 'Qu'on ne s'y trompe pas: le "français vivante" comporte aussi la réhabilitation de formes et de contraintes anciennes, et parmi celles des Grands Rhétoriqueurs.' Noël Arnaud, 'Préface,' in *La Bibliothèque Oulipienne, Volume 1* (Paris: Éditions Ramsay, 1987), p.ii. ['*Make no mistake: "living French" also includes the rehabilitation of ancient forms and constraints, and among them, those of the Grands Rhétoriqueurs.*']. See also Perec, 'History of the Lipogram.'

[18] Roubaud, 'Perecquian OULIPO,' p.104. Curtius also has a few words about Arnaut Daniel: he adopts 'the stylistic ideal of difficult technique. ... He wrestles with his "arduous material".' Curtius, *European Literature*, p.352.

[19] See Oulipo, 'La Quenine,' in *Atlas de littérature potentielle* (Paris: Gallimard, folio essais, 1981).

Art Versus Craft

It is necessary then to consider how the concepts of art and craft have diverged in the modern era (with a concomitant hierarchy in favour of the former); and so what it means now to hark back to an older model of cultural production in certain Oulipo writings. 'Craft' is characterised by skilled production, a direct (human) engagement with the materials and tools of production, and, perhaps most significantly for the concept of art that has become its other, the idea of subordination to a given (social rather than autonomous) purpose. The term today implies an outdated mode of production, in terms both of the actual activity of production, as well as the conditions of thought about its meaning. The art-craft combination prior to their categorial separation as a model of productive activity has been superseded by, on the one hand, industrial capitalism, and on the other, fluctuating conceptions of autonomous art as something that proposes precisely to separate itself from the functional demands of the former.

Given the historical context of such references, the pursuit of craft as such in the modern era retracts from what Adorno considers to be the imperative dynamic of art, whose social truth is only possible in its relation to the conditions of its own time, rather than its harking back to earlier modes of production and society. Consider for example, Adorno's description of Bach as a transitional figure—'no archaic master craftsman but rather a genius of mediation.'[20] Adorno dismisses the 'devotees' of Bach

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Oulipian works using the sestina form are numerous. A recently translated example is Harry Mathews, 'Saint Catherina,' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Ian Monk (San Francisco: McSweeney's, 2018). An example of a work utilising a higher order n-ina (17 in this case) is Ian Monk, 'Return(s),' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Daniel Levin Becker (San Francisco: McSweeney's, 2018).

[20]Theodor W. Adorno, 'Bach Defended Against his Devotees,' in *Prisms*, trans. Samuel and Shierry

who find in the latter's music a timeless essence,[21] because, for Adorno, Bach's music cannot be 'deciphered' without understanding the

> ... change in the work-process that took place during the same epoch
> through the emergence of manufacturing, which consisted essentially in
> breaking down the old craft operations into its smaller component acts.
> If this resulted in the rationalisation of material production, then Bach
> was the first to crystallise the idea of the rationally constituted work, of
> the aesthetic domination of nature; it was no accident that he named his
> major instrumental work after the most important technical achievement
> of musical rationalisation.[22]

The change in the 'work-process' that Adorno refers to here—both a change in the nature of productive processes with the emergence of industrial capitalism and the associated rise of enlightenment rationalisation—is part of the complex of social developments that led to the general concept of 'art'. This 'modern system of the arts' is comprised, as Kristeller tells us, of 'the five major arts of painting, sculpture, architecture, music and poetry', which 'constitute the irreducible nucleus ... on which all writers and thinkers seem to agree.' While other arts may enter into this core set, Kristeller observes that they are distinguished by being 'clearly separated by common characteristics from the crafts, the sciences and other human activities, [which] has been taken for granted by most writers on aesthetics from Kant to the present day.'[23]

Weber (Cambridge, Mass: MIT Press, 1981), p.138.

[21] Adorno couches this in terms of a quasi-theological ontological appeal, closely connected to what he calls the 'vogue of ontology'. Ibid., p.135.

[22] Ibid., p.139. The work in question here is, of course, Bach's 1722/1742 *Well-Tempered Clavier*.

[23] Paul Oskar Kristeller, 'The Modern System of the Arts: A Study in the History of Aesthetics Part

Kristeller identifies the Abbé Batteux's *Les beaux arts réduits à un même principe* (1746) (rather than the perhaps more influential *Encyclopédie* (1751–72) by Diderot and D'Alambert) as the decisive crystallisation of ideas that had been tending that way for some time. In this work, Batteux offers a distinction between the pleasure-giving 'fine arts', the functional 'mechanical arts' and a third category combining both usefulness and pleasure in which he places eloquence and architecture.[24] This separation of the 'fine arts' from science, craft and other activities made a decisive break from the various earlier divisions of antiquity and the early middle ages.[25] In these pre-modern schemes, 'aesthetic quality' is not a criterion, and no division of functional from beautiful productions is conceived. (The concept of beauty, where it is discussed, is presented as a 'metaphysical aspect of God' rather than an attribute of art.[26]) Furthermore, where art is not constitutively separated from scientific knowledge, there is not the same division, made prominent by Kant's third critique, of the roles of learning and genius in its production.

The development of concepts represented here is in line with transformations in the character of commodity production and certain hierarchical changes in the social situation of art, changes that would further distance the 'fine arts' from historical craft

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I,' *Journal of the History of Ideas* 12, no. 4 (1951): pp.497–8. Of course, the 'present day' of Kristeller's writing here is the early fifties, and the time between then and our own 'present day' has seen significant developments in the concept of art that bring this 'modern system' into question, one of which being the often overlooked activities of the Oulipo.

[24]Paul Oskar Kristeller, 'The Modern System of the Arts: A Study in the History of Aesthetics Part II,' *Journal of the History of Ideas* 13, no. 1 (1952): p.20ff.

[25]For example, the late Roman, Martianus Capella's 'definitive scheme' of the liberal arts comprises grammar, rhetoric, dialectic, arithmetic, geometry, astronomy and music. A twelfth-century scheme of 'mechanical arts' lists weaving, weaponry, navigation, agriculture, hunting, medicine, and drama, in which, intriguingly, architecture, sculpture and painting are classed as subdivisions of weaponry. In schemes of this period, music is usually associated with mathematics; and poetry with grammar, rhetoric and logic. Kristeller, 'The Modern System of the Arts I,' p.505ff.

[26]Ibid., p.509.

production, on the one hand, and its industrial replacement, on the other. Meanwhile, the shift in industrial processes with the development of mass-production and the division of labour led to the de-skilling of manual workers and their subordination to machines, or machine-like demands of unchanging and repetitive operations, as Marx observed.[27] With this loss of craft skills a certain level of human productive engagement with material is lost, the worker no longer has mastery of the process, nor a direct relationship with the product—experience is diminished through rationalisation.

The role of the *hand* in Benjamin's 'The Storyteller' is significant in understanding what changes with craft's decline, in an account very close, in this respect, to that of Adorno:

> [Storytelling] does not aim to convey the pure 'in itself' or gist of a thing, like information or a report. It submerges the thing into the life of the storyteller, in order to bring it out of him again. Thus, traces of the storyteller cling to the story the way the handprints of the potter cling to a clay vessel.[28]

'The hand marks out authentic experience' in Benjamin's essay, as Esther Leslie observes.[29] It is the figure of human mediation in the wider process of the world from which the storyteller draws material, and the hand in turn leaves its mark on the objects

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[27] 'In every craft it seizes, manufacture creates a class of so-called unskilled labourers, a class strictly excluded by the nature of handicraft industry. If it develops a one-sided speciality to perfection, at the expense of the whole of a man's working capacity, it also begins to make a speciality of the absence of all development.' 'In handicrafts and manufacture, the worker makes use of a tool; in the factory, the machine makes use of him.' Karl Marx, *Capital: A Critique of Political Economy*, trans. Ben Fowkes, vol. 1 (Harmondsworth: Penguin, 1976), p.470, 548.

[28] Benjamin, 'The Storyteller,' p.149.

[29] Esther Leslie, 'Walter Benjamin: Traces of Craft,' *Journal of Design History* 11, no. 1 (1998): p.6.

it produces in a way that is neutralised by the functional determinations of information. Benjamin also imagines the combination of travelling journeyman and traditional craftsman as a weaving—as Leslie notes, another craft image—of the spatial and temporal dimensions of experience. This is not simply to define craft activity solely by its manual engagement, and clearly storytelling, the *crafting* of a story, is not the production of a material artefact in quite the same sense as the making of pottery for example. That said, there are parallels with the change in material production and the development of the modern concept of 'literature', which has a relation to autonomous 'fine art' in its discarding of the functional writing which was previously considered under the same term.

Both material craft and storytelling in Benjamin's essay are the working through of experience, of experience as a mediating form that is absent in the modern form of 'information'. This means that the hand represents synecdochically the body and, more broadly, the actuality of its life: more than just the handling of clay or the twisting of fibres, this is the grasp of reality, real praxis.

Now if it is to be maintained that Oulipian practice has something of a craft character about it, it must be shown that there is a conception of craft in a sense that is broader than its pre-industrial manual aspect. My argument will be that what makes the Oulipian conception of 'craft' different is that, here, the materials of production, in a hardened era of 'information', have become primarily intellectual, but nevertheless still need to be worked upon. This leads to the paradoxical situation of a material that has the form of information, but is used or drawn into a process of artistic production in the same way that the material characteristics of physical craft shape, rather than dominate, the latter's production. Clearly the sense in which the 'world' is engaged in this

has shifted, but this reflects the social condition of rational structures that themselves have become reified as if they were natural forms.

The shift in the concept of art that leads to craft's becoming outmoded, separate and categorially inferior—above all, less *free*[30]—is the result of a complex of social and conceptual changes. As already mentioned, these include the changes in industrial production and the division of labour that render craft skills largely obsolete, but also changes in the context of artworks' production, both social and economic: the desacralisation of art accompanying the Enlightenment; the shift from artists' dependency on patronage to a 'free' and anonymous marketplace; the establishment of academies; and related social hierarchies of cultural producers and the objects and places of consumption.[31] These changes may be more commonly understood as developing toward the of the category of 'autonomy' in art, in which the exclusion of craft as such is a side-effect rather than a primary concern.[32]

The long-standing hierarchy of the intellectual over the manual comes to conceptual fruition in relation to the arts with Kant's theory of the aesthetic.[33] The attempted

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[30] 'The idea of the artist's freedom versus the artisan's dependence underlay each of the other ideal qualities ascribed to the artist: freedom from the imitation of traditional models (originality), freedom from the dictates of reason and rule (inspiration), freedom from restrictions on fantasy (imagination), freedom from the exact imitation of nature (creation).' Shiner, *The Invention of Art*, p.112.

[31] See Ibid., p.99–111.

[32] See Bürger, *Theory of the Avant-Garde*, p.36ff. Bürger presents several proposed explanations for this concept's emergence, none of which he considers definitive. For example, he relates B. Hinz's theory that, with industrialisation, 'autonomous' art retained something of the craft stage of production—the producer's relation to the produced object, otherwise lost in industrial process—and yet at the same time denied craft by intellectualising such production. This is, at least, suggestive that something may be retrieved from the concept of craft.

[33] As Alfred Sohn-Rethel notes regarding Kant's project more generally, the hierarchy of intellectual over manual is crystallised in Kant into an irresolvable gap, such that 'transcendental spontaneity' is an inexplicable fact—this is, for Sohn-Rethel, the idealist's fetishism, placing a taboo on any temporal-spatial interpretation of the pure understanding, which 'presupposes that the existing division between head and hand is in its very nature timeless—and this said, bourgeois order must run according to its self-appointed norms until the end of time.' Sohn-Rethel, *Intellectual and Manual Labour*, p.39.

grounding of the supposed 'autonomy' of art in Kant's theory of disinterested aesthetic judgement is, of course, to mistake a transcendental judgement for an objective condition, but Kant's critical project represents a philosophical crystallisation of the changing culture. Indeed, as Adorno notes, the concept of the aesthetic and the associated one of 'nature' that supports it, is reflective of the historically contingent 'devaluation' of the immediacy of desire or real sensuous engagement; that is, beauty, in fact, is constituted by 'that strange interplay of forces between desire and the prohibition of desire.'[34] However, the separation of craft from autonomous fine art is not so clear cut in Kant's work, and he does not support the crudely romantic idea of the artist as an unconstrained free spirit, nor of the artwork as autonomous production. Indeed, I would argue, at this crucial juncture of philosophical thinking, Kant retains something of the older idea of skilled production, recalling the Greek concept of *technē*, which makes no division between art and craft. In other words, Kant is not simply a proto-romantic, and even while the seeds of that movement can be found in his work, he retains notions of artistic production that complicate it.

If Kant is in certain respects a key figure in the rise of idealist hierarchies that accompany the division of art and craft in bourgeois modernity, some care needs to be taken with his concept of 'aesthetic' and how it relates to art, since, while Kant offers a theory of the aesthetic to explain judgements of beauty, it offers neither an ontological explanation of artworks, nor the grounds for supposing their autonomy. Kant gives an overview of art 'in general' by means of its distinction from three other concepts: nature (art is a *doing* that produces a work, as opposed to nature's effects; which is to say that art is a *free* activity, grounded in reason); science (art is a practical

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[34] Adorno, *Aesthetics: 1958/59*, pp.31–2.

rather than theoretical faculty); and handicrafts [*Handwerke*] (art is *liberal*, purposive as play as opposed to *remunerative*—of value only by virtue of its effect, that is, its end lies outside itself). Art is primarily defined here by Kant in terms of the activity that constitutes it, and thus draws on the classical concept of art—*technē* or *ars*—as a skill for producing things. *Technē*, which Aristotle defines as the 'trained ability of making something under the guidance of rational thought,'[35] rather than our modern 'fine art', provides the broader concept here. In fact, despite Kant's third distinction above, he still retains something of this older concept of art that combines elements that were, at his time of writing, only just diverging into art and craft. Kant's distinction of art from craft echoes the ancient distinction of liberal and 'servile' or 'vulgar' arts, a distinction based not so much on the activities or objects themselves but on their purposive context.

Kant then subdivides art into mechanical and aesthetic art, in which the mechanical is that activity that is purely cognitively determined and the aesthetic is that aimed at producing some pleasure or other. This latter art is then further divided into agreeable art (sensuously enjoyable) and beautiful (or 'fine') art (provoking the reflecting power of judgement).[36] It is apparent here that fine art is only one subdivision within a wider sphere of productive activities—and with the further explanation of fine art and its productive source(s) that follows, Kant is here offering the philosophical ballast to an emergent idea of the period. But it is also the case that certain aspects of production that would henceforth be denigrated as craft retain a role in the production of even fine art, despite the distinction that Kant makes with 'handicraft'. That is, inasmuch as

[35]Cited in Shiner, *The Invention of Art*, p.23. Shiner adds that this definition is rather narrow in Greek culture, since the concept also includes 'a dimension of spontaneous tact.' Ibid., p.23.

[36]Immanuel Kant, *Critique of the Power of Judgement*, ed. Paul Guyer, trans. Paul Guyer and Eric Matthews (Cambridge: Cambridge University Press, 2000), 5:303–6.

Kant's concept of art recalls *technē*, it also implies skill with materials, the ability to fashion effectively—Kant does not identify art as entirely coincident with the aesthetic, a conflation perpetrated by some later theorists.[37]

Kant's *Critique of the Power of Judgement* is not primarily a work on art theory, and his theorisation of the faculty of aesthetic judgement is based on the impossibility of a rational determination of nature as such rather than artworks: in the *Critique of Pure Reason*, Kant complains of the attempted rational determination of 'aesthetics' as 'the failed hope ... of bringing the critical estimation of the beautiful under principles of reason.'[38] When Kant does finally accede to the use of the term for judgements of beauty, it is still, however, distanced from determinate concepts of the understanding. That, indeed, is its definition—beauty is a subjective, but disinterested reflection on nature, constituted by the faculties of cognition in general (and hence universal)—the imagination and understanding—engaged in 'free play' but without subsumption by concepts of the understanding. Thus 'beauty is the form of the purposiveness of an object, insofar as it is perceived in it without representation of an end.'[39] The artwork, by contrast, is necessarily cognised as a determinate object inasmuch as it is a human product, but in order to be judged beautiful it must nevertheless appear as nature. Thus Kant makes the apparently paradoxical statement that 'nature was beautiful, if at the same time it looked like art; and art can only be called beautiful if we are aware

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[37] For example, Clement Greenberg: 'aesthetic judgements are given and contained in the immediate experience of art. They coincide with it; they are not arrived at afterwards through reflection or thought. Aesthetic judgements are also involuntary: you can no more choose whether or not to like a work of art than you can choose to have sugar taste sweet or lemons sour.' Clement Greenberg, 'Complaints of an Art Critic,' in *The Collected Essays and Criticism, Volume 4: Modernism with a Vengeance, 1957-1969*, ed. John O'Brian (Chicago: The University of Chicago Press, 1995), p.265.

[38] Immanuel Kant, *Critique of Pure Reason*, ed. and trans. Paul Guyer and Allen W. Wood (Cambridge: Cambridge University Press, 1998), A21/B35. Here the term is restricted to the *transcendental aesthetic* as the 'principles of *a priori* sensibility'. Ibid., B36.

[39] Kant, *Critique of the Power of Judgement*, 5:236.

that it is art and yet it looks to us like nature.'[40] In the first case then, Kant aligns the appreciation of nature's purposiveness with its teleology, that is its absolute moral purpose. In the second, art—that is, human artifice—retains its freedom by evading the total determination of a causal chain. But the difficulty arises that the artwork is nonetheless irreducibly something produced.

The relation of the artificial and the genial in the artwork is one of some ambivalence in Kant. He posits an 'inborn predisposition' given by nature, quite without accountability, to the artist. He calls this *genius*, which 'gives the rule to art'. It 'is a talent for producing that for which no determinate rule can be given, not a predisposition of skill for that which can be learned in accordance with some rule, consequently that originality must be its primary characteristic.'[41] (Note that the ambivalence over the term 'rule' [*Regel*] begins here.) That genius escapes rationalisation, is not subject to the plans of its possessor and that it cannot be communicated, looks, on the face of it, a clear contradiction with Oulipian principles of deliberate, rational determination in literature—*voluntary literature*, to use Queneau's phrase. The Oulipo's insistence on the deliberateness of writing is in opposition to what they call 'eructative literature'[42] (which would, for the Oulipo, likely describe Surrealism, as I described in chapter 1). Regardless of whether or not it can be described as eructation, however, for Kant, genius, while it brings spirit [*Geist*] to art, does not alone produce beautiful art—'there can also be original nonsense', he states—and it therefore needs also to be channeled, shaped by a certain 'academic form', even though the latter must not be allowed to 'show through' in the work.[43] Thus, Kant continues, 'genius can only pro-

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[40]Ibid., 5:306.
[41]Ibid., 5:307.
[42]Le Lionnais, 'Second Manifesto,' p.xxiv.
[43]Kant, *Critique of the Power of Judgement*, 5:307,5:308.

vide rich material for products of art; its elaboration and form require a talent that has been academically trained in order to make a use of it that can stand up to the power of judgement.'[44] Here it is no longer clear that genius is *giving* the rule so much as giving material to be constrained by a rule, one instilled by academic training, and it is this training now that is necessary for it to stand up to the power of judgement.

It could be argued that this academic training is simply that exposure to artworks of genius, models that are 'exemplary' without any other 'scientific' explanation of their production (since genius, unlike scientific learning, cannot be communicated in any cognitive sense).[45] J. M. Bernstein for example, notes that 'artists acknowledge the connection between exemplarity and succession by producing successive works themselves.' However, according to Bernstein, since the rule given cannot simply be imitated—since that would undermine the autonomy of genius—the successive production of genial works is in constant revolution.[46] But it is not so clear that Kant refuses the determinate rule: he also asserts that 'there is no beautiful art in which something mechanical, which can be grasped and followed according to rules, and thus something academically correct, does not constitute the essential condition of the art.'[47] Here the artwork's cognitively appreciable form—*something mechanical*—seems to take precedence. The determinate form of the fine artwork is thus not merely the fact of its having been made as an artwork—that which is clear inasmuch as the work's purposiveness as an object of *art* is not purposeless in the manner of objects

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[44] Ibid., 5:310.

[45] Ibid., 5:308. John Zammito, for example: 'the only way the potential genius can be cultivated is to subject him or her to that rigorous exposure to exemplary instances of artistic genius which is just what is meant by "academic training".' John H. Zammito, *The Genesis of Kant's Critique of Judgement* (Chicago: The University of Chicago Press, 1992), p.141.

[46] J. M. Bernstein, *The Fate of Art* (Cambridge: Polity, 1992), p.94.

[47] Kant, *Critique of the Power of Judgement*, 5:310.

of natural beauty—but also its conformity to certain established qualitative standards, and thus a judgement of taste is required.

However, the judgement of taste [*Geschmack*] in the beautiful artwork is *not* the same as the judgement of beauty in nature, precisely because of the artwork's subsumption by a concept:

> If the object is given as a product of art, and is as such supposed to be declared to be beautiful, then, since art always presupposes an end in the cause (and its causality), a concept must first be the ground of what the thing is supposed to be, and, since the agreement of the manifold in a thing with its inner determination as an end is the perfection of the thing, in the judging of the beauty of art the perfection of the thing will also have to be taken into account, which is not even a question in the judging of a natural beauty (as such).[48]

Given the differences between the types of judgement, the attendant ambivalences thus carry over to the productive conditions of the artwork. Both genius and taste are required, Kant contends, but there is some vacillation regarding which is subordinated to the other. As stated above, Kant proposes that genius 'gives the rule'. He goes on to state that spirit—an 'animating principle'—is lacking in artworks which *ought* to be beautiful. 'One finds,' he notes, 'nothing in them to criticise as far as taste is concerned.' Spirit, he clarifies is 'the faculty of aesthetic ideas,'[49] which are ideas of the imagination (rather than reason) for which no determinate thought is adequate.

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[48] Ibid., 5:311.
[49] Ibid., 5:313–4.

Thus genius, constituted by a 'certain relation' of the imagination and understanding, represents a liberated imagination:

> In an aesthetic respect ... the imagination is free to provide, beyond that concord with the concept, unsought extensive undeveloped material for the understanding ... for the animation of the cognitive powers ...; thus genius really consists in the happy relation, which no science can teach and no diligence learn, of finding ideas for a given concept ... and hitting upon the expression for these.[50]

Yet only a few paragraphs later, Kant states that it is 'only in regard to [taste] that [art] deserves to be called beautiful art.'[51] By way of genius, he continues, art may be called inspired, but this is 'not as necessary' as taste, which is the 'primary thing'. Genius here is portrayed as a wayward freedom that must be constrained. Taste is affirmed as '..the discipline (or corrective) of genius, clipping its wings and making it well behaved or polished.'[52] The discussion closes with a statement proposing the unity of these several faculties in beautiful art—'for beautiful art ... imagination, understanding, spirit and taste are requisite.'[53]—which rather glosses over the conflicts that have led up to it. Kant here seems torn between the tendency towards subsumption under a rational form that characterises classicism, and the emergence of a more radical idea of a non-accountable *poiesis* that was influential for the early Romantics who were to follow in his wake.

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[50]Ibid., 5:317.
[51]Ibid., 5:319.
[52]Ibid.
[53]A footnote clarifies that taste is the unifier of the first three faculties. Ibid., 5:320.

In the latter case, it is Kant's formulation of the role of *genius* in production, more than his *aesthetic* reflection, that is important for the Romantic conception of art. The latter provides no philosophical grounding for the autonomy of art, since aesthetic judgements are a kind of transcendental auto-affection—the pleasure of the mind in its own cognitive processes short of an actual cognition—and thus say nothing about the objectively constituted object that is an artwork. Genius, as a productive faculty, comes some way towards the claim of art's autonomy, but it is only the early Romantics who tied this to a concept of self-determination, and thus the concept of *autopoiesis*. As Peter Osborne notes:

> [Kant] failed to connect genius to self-determination, or to the illusion of self-determination (at least explicitly), let alone to theorise the production of the illusion of self-determination as the self-reflexive structure of the artwork (since he had no ontological concept of the artwork). That was left to Novalis's transposition of the structure of Fichte's absolutisation of the subject onto the work of art.[54]

By contrast, Kant's concept of art as practice is still tied to the ancient *technē*, and even his theorisation of the shifts of the era toward a more elevated 'fine art' still bear the necessity of some aspect, perhaps even the primacy, of the skill (material or cognitive) of making rather than untrammelled spirit. Where there is tension in Kant's writing, it comes from the fact that it is a moment of theoretical transition where Kant is still haunted by the loss of a direct, cognitive engagement with nature, where, 'in its time', pleasure would have been taken 'in the comprehensibility of nature and the

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[54]Peter Osborne, *Anywhere or Not At All: Philosophy of Contemporary Art* (London: Verso, 2013), p.44.

unity of its division into genera and species.'[55] For Bernstein, this means that 'in
… our world, judgements of beauty are memorial: in making aesthetic judgements
we judge things "as if" from the perspective of our lost common sense.'[56] The kind
of 'pre-critical' unity here, usually more associated with Romanticism, clearly goes
back much further than the division of hand and head with industrialisation that drives
the separation of craft and art in modernity, but it can be seen as a part of the same
process of enlightenment, and the same problematic terrain in which Kant is battling
to organise the terms of conceptual modernity. The traces of this problematic (the
resonances of craft) persist, I would argue, right through to our present day and are
crucial to our understanding of the Oulipo.

Kant's artwork must contain an element of freedom, constituted by genius, but, I
have argued, that element is not unmediated by an artist's skill in the actual production
into which it enters. In this sense it is not enough to regard artworks simply as products
of freedom even if, in the dawning distinction of fine art, this element is essential. Yet
if the technical skill associated with craft production has held fluctuating regard in
the two centuries or so since Kant's writing, it has nevertheless taken a subordinate
position in the hierarchy of cultural values.

Through the course of the nineteenth century and beyond, the gap between the
spiritualised activity of the artist and the outdated productive skills of the craftsman
widened. Though this did not necessarily remove art from all craft-like skill and

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[55] 'To be sure, we no longer detect any noticeable pleasure in the comprehensibility of nature and the
unity of its division into genera and species, by means of which alone empirical concepts are possible
through which we cognise it in its particular laws; but it must certainly have been there in its time, and
only because the most common experience would not be possible without it has it gradually become
mixed up with mere cognition and is no longer specially noticed.' Kant, *Critique of the Power of
Judgement*, 5:187.

[56] Bernstein, *The Fate of Art*, p.60.

dedication—Flaubert would famously 'spend days at a stretch on a single page', a model of textual mastery that was very influential for Georges Perec[57]—such 'craftsmanship', however, was now seen to be in the service of the artist's (or better, art's) own purpose rather than the external purposiveness characteristic of craft as such. Recall Curtius's (retrospective) description of the 'mannerism' of certain medieval writers as 'unnatural':[58] the denigration here is not simply the skill of the production, but that this aspect takes precedence over what is deemed to be, implicitly, a more 'authentic' mode of composition. The near-religious status accorded to artistic autonomy in the late nineteenth century is, as Shiner notes, particularly evident in the tension in fields like architecture, where functional demands, one might think, would be irreducible, yet which provoked an 'anti-engineering' response in defence of the discipline's 'expressive' possibilities.[59]

Attempts at re-consolidation were made by John Ruskin and later William Morris and the Arts and Crafts movement in the nineteenth century. Bemoaning the degrading social (and aesthetic) effects of industrialisation, they rejected machine production; but despite the utopian ideals, the return to workshop production fostered an expensive market for premium commodities rather than significant reform to industrial society.[60] The aspiration to reconcile artist and artisan was further pursued by the Bauhaus. In the *Manifesto* of 1919, Walter Gropius wrote:

> Architects, sculptors, painters, we all must return to the crafts! For art is

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[57]Bellos, *Georges Perec*, p.310.

[58]See p.213 n.14

[59]Shiner, *The Invention of Art*, pp.211–12.

[60]C. R. Ashbee, formerly of the Arts and Crafts movement, wrote in his memoirs, 'We have made, of a great social movement, a narrow and tiresome little aristocracy working with great skill for the very rich.' Cited in Gillian Naylor, *The Arts and Crafts Movement: A Study of its Sources, Ideals and Influence on Design Theory* (London: Studio Vista, 1971), p.9.

not a 'profession'. There is no essential difference between the artist and

the craftsman. The artist is an exalted craftsman. In rare moments of inspi-

ration, transcending the consciousness of his will, the grace of heaven may

cause his work to blossom into art. But proficiency in a craft is essential

to every artist. Therein lies the prime source of creative imagination.[61]

The school's early 'bipolar teaching model' combined tuition in both art and craft.[62] Contrary to the Arts and Crafts movement however, the Bauhaus school was affirmatively modernist, aiming to educate its students in modern productive skills, technologies and design principles, and also how these could be harnessed for social purpose. There was thus no antipathy to machines in themselves, only the conditions of their deployment.[63] Yet if 'merciful heaven' was still the grantor of access to the status of art, it would seem as if the hierarchical distinction remained. Certainly, with the later Bauhaus, under Mies van der Rohe, emphasis had moved towards abstract principles of 'art', rather than functionally directed practice,[64] and the assimilation by art history and museums has since effectively neutralised any real transgression there may have been of fine art's boundaries.[65] In more recent years, further attempts have been made to rehabilitate craft, but without much affecting the hierarchical division with art; that is, if craft is here re-evaluated, it still gains its approval *as* art. In certain cases, as Larry Shiner describes, an exaggerated functionlessness of what would otherwise be

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[61]Cited in Éva Forgács, *The Bauhaus Idea and Bauhaus Politics*, trans. John Bátki (Budapest: Central European University Press, 1995), p.27.

[62]Magdalena Droste, *Bauhaus 1919–1933*, trans. Karen Williams (Köln: Taschen, 2015), p.34.

[63]'Our object was to eliminate every drawback of the machine without sacrificing any one of its real advantages.' Gropius, *The New Architecture and the Bauhaus*, p.54.

[64]Under Mies, 'Bauen' (building) became 'Baukunst' (the *art* of building). 'Mies was more or less indifferent to the burning social questions of the day. For him architecture was art, confrontation with space, proportion and material.' Droste, *Bauhaus*, pp.213–4.

[65]See Shiner, *The Invention of Art*, pp.261–3.

perceived to be craft forms—'pots with holes in them, cups you can't drink out of, chairs you can't sit on, books you can't open'[66]—seems to serve as the entry point into a domain of 'aesthetic' approval.[67]

From Craft to Construction

Clearly a nostalgic resurrection of craft—an obsolete mode of production—or the simple re-presentation of craft as art does little to address the critical position of craft as such. The categories themselves, though historically and socially contingent, are irrevocable. And it cannot simply be denied that the category of art, in modernity, is one that has critical bite in a way that craft lacks, precisely because of the condition of former's autonomy. This is not the abstract negation of *l'art pour l'art*, but rather art's 'double character as both autonomous and *fait social*' as Adorno puts it,[68] where 'even the most sublime artwork takes up a determinate attitude to empirical reality by stepping outside of the constraining spell it casts, not once and for all, but rather ever and again.'[69] Craft, on the other hand, considered in its modern conception as art's redundant other, does not appear to resist instrumental demands, or if it does so, it thereby elevates its claim to the status of art.

Craft, in its historical conception, is intimately tied to practical engagement: as in Benjamin's 'Storyteller', a work (in both the senses of process and result) stemming from direct experience of the world and being thus intimately embedded in—in

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[66] Ibid., p.277.
[67] See ibid., pp.274–278.
[68] Adorno, *Aesthetic Theory*, p.7.
[69] Ibid., p.7.

a processual harmony with—that world. The material sense of this is maintained in contemporary crafts where the principal characteristic is usually some kind of physical usefulness, or that at least its subsuming category is function, even if any particular object in question is not actually used, or even useful. This receives its negative determination with the craft-as-art objects defined as such by their failure to meet their historically established concept. However, where the condition of rationality moves towards one of domination and control, the category of function takes on a more oppressive character—an object's function becomes alienated from its being (its function denotes its being for an other). The changing conception of craft in industrial society marks, in this sense, the loss of a non-conflictual category of function.

Yet it is not simply the case that all aspects of the meaning of craft are lost where that un-alienated experience of material production is lost, as in the case of mass industrialisation that has superseded it. In fact it is precisely in art's resistance to industry (and more acutely that of fine art to the culture industry) that it retains something of that pre-industrial mode of production. The traces of craft can be found, as Adorno notes, in 'procedures that originated in the artisanal praxis of the medieval production of goods, a praxis from which art, resisting integration into capitalism, never completely diverged.'[70] These traces of craft are perhaps found most obviously in the fact that art is something subjectively *produced*. This is still the case with even the most aleatory, a-subjective material, if only by its attempted determinate negation of 'making' (and even here the subjective-productive element is, arguably, still traceable in such item's selection and presentation as art). This is despite, or rather dialectically tied to, art's claim to autonomy, which is still, however complicatedly, the core

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[70]Ibid., p.290.

problematic of the possibility of (modern) art. This paradoxical autonomy of art is drawn from its historical formation. Adorno writes that 'the artwork's autonomy is, indeed, not a priori but the sedimentation of a historical process that constitutes its concept.'[71] This concept is, in part, to be found in the memory of forms of production lost to industrial-rational domination, that is, in craft, or rather, in the older form of pre-autonomous, pre-aesthetic (which is not to equate these two terms) art production in which art and craft are not separable concepts. Adorno famously declares the importance of recognising 'aesthetic form as sedimented content,'[72] which at once relates both the implication of art in its modern situation, as the 'sedimentations or imprintings of social relations of production',[73] and also the memorial traces of its historical development, even though—importantly—this does not imply a static relation, nor static conditions: 'the definition of art is at every point indicated by what art once was, but it is legitimated only by what art became with regard to what it wants to, and perhaps can, become.'[74] Art's constitution is thus always conflictual, inasmuch as 'its concept refers to what it does not contain,' but 'not according to any set of invariants.'[75]

The concept of craft, or rather—to avoid a too singularly positive determination—certain conceptual formations that converge on that designation, are both retained and refused variously by the modern characterisations of art: autonomy versus function;

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[71] Ibid., p.25.

[72] Ibid., p.6.

[73] 'What may be called aesthetic relations of production—all that in which the productive force is embedded and in which it is active—are sedimentations or imprintings of social relations of production.' Ibid., pp.6–7.

[74] Ibid., p.3. That there is a relation to craft-like historical forms is indicated more strongly in the 1958/59 lectures: 'the ornament, as it were, is the scar that appeared on a vase at the point where it could not be made at the potter's wheel without such an interruption. So, following this analogy, it should be the case for all so-called artistic forms that they were once content and, through a process of sublimation, of spiritualisation—which is after all the process of artistic development as such—took on that peculiar independence.' Adorno, *Aesthetics: 1958/59*, pp.151–2.

[75] Adorno, *Aesthetic Theory*, p.3.

imagination versus skill; spirit vs mechanism. The relation to craft in this is thus that of art's antithesis to instrumental production, and also its historical memory of a mode of production where what constituted art was not conceptually distinct from its usefulness. As Adorno writes, 'art acquires its specificity by separating itself from what it developed out of; its law of movement is its law of form.'[76] Modern art thus bears the tension of this changed concept in its form, in its conflictual autonomy. Even where art claims one side of these dichotomous relations it retains the conflict of their formation.

In this sense then, to ascribe certain craft characteristics to Oulipian work is, in the first case at least, only to develop, albeit in unorthodox ways, potentials that are already present in art's modern day concept. Art's recollection (albeit one which may only be approached through critique) through its form, of the historical development of that which now constitutes it is what gives the possibility of seeing the contingency and conflictual nature of its own conditions. The tendency towards total rationalisation of production excludes the older modes: adherence to exact time schemes, repetitive processes and subordination to the machine leave no room for the direct engagement afforded by an attempted recuperation of pre-alienated labour. Art now poses as the antithesis of this universal rationalisation—of commodification—and offers itself as non-instrumentalised, autonomous. Yet, this latter claim is of course impossible. In Adorno's famous statement 'the absolute artwork meets the absolute commodity.'[77] The core contradiction in terms of the commodity form is that the autonomous art-

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[76] Ibid., p.3.

[77] This is Stewart Martin's translation which represents the *internal* contradictoriness of the constitution of the artwork better than Hulot-Kentor's. Stewart Martin, 'The Absolute Artwork Meets the Absolute Commodity,' *Radical Philosophy*, no. 146 (November 2007): 15–25. See Adorno, *Aesthetic Theory*, p.30.

work is both a product of commodification, insofar as it represents the 'liberation' of production from religious service or patronage, but that the form of the market which allows this itself reduces everything to exchange value, thus destroying the supposed independence of the artwork.[78]

Clearly craft—in its historical condition and in its dominant contemporary nostalgic conception—is not straightforwardly the answer to this riddle. Craft might be posed as art's lament for a historical unity of usefulness and authenticity, but, in the social context that supersedes that situation, what are now typically taken as craft forms—pottery, textiles, glassware, and so on, which are often deprecatingly called 'applied arts' (with the implied superiority of 'pure arts')—seem to stand little chance of critical engagement. Instead they seem more like the hobbyist's nostalgic attempt to rediscover a non-alienated relation to their own productive activity. From this perspective, craft seems like a refusal to acknowledge the extent of the 'progressive rational control of nature', rather than an 'attempt to do justice to all that falls victim to this ongoing concept of control over nature',[79]

That said, as stated above, craft is nevertheless retained as a *memory* in the modern concept of art, and not simply in terms of a loss. Indeed, specifically in art's relation to technique—'the medium of art's crystallisation', as Adorno states—it retains a craft-like subjective element. Adorno writes:

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[78]Martin states that 'the artwork is presented as a contradiction produced by capitalism. Commodification is a condition of possibility of autonomous art as well as a condition of its impossibility. The implication of Adorno's account is that the absolute artwork meets *itself* with the absolute commodity.' Martin, 'The Absolute Artwork,' p.18.

[79]'One could say that art is an attempt to do justice to all that falls victim to this ongoing concept of control over nature …—namely the portion of memory, the memory of the suppressed, of that which becomes a victim, and also the memory of all those internal human powers which are destroyed by this process of progressive human rationalisation.' Adorno, *Aesthetics: 1958/59*, pp.47–8.

In the language of art, expressions like technique, *métier*, and craft [*Handw-erk*] are synonyms. This points up that anachronistic aspect of craft [*anachro-nistisch handwerklichen Aspekt*] that Valéry's melancholy did not over-look. It admixes something idyllic with art's existence in an age in which nothing true is any longer permitted to be harmless. On the other hand, however, whenever autonomous art has seriously set out to absorb indus-trial processes, they have remained external to it. ... The radical indus-trialisation of art, its undiminished adaptation to the achieved technical standards, collides with what in art resists integration. If technique strives for industrialisation as its vanishing point, it does so at the cost of the im-manent elaboration of the work and thus at the cost of technique itself. This instills into art an archaic element that compromises it.[80]

The relation to this element is far from straightforward, since it is at once 'archaic', in the resistance to industrialisation, but also tends towards a future dissolution in the constructive tendency. Adorno's observation on the synonymity of the terms *in the lan-guage of art* should not, however, be taken to mean that he is positing a single concept that unites them. Rather these terms tend toward a complex of ideas, both contempo-rary and historical, in the context of functions associated with art and its production, or surrounding it. If anything, the statement indicates a criticism of the conflation of terms, or at least of concepts, in common discourse about art; hence Adorno's unpick-ing, that follows, of the contradictory aspects. In fact Adorno, in *Aesthetic Theory*, uses various terms associated with (and partially translated by) the English 'craft'—*Handwerk, Kunstgewerbe, Métier, Technik*—which are used to express different con-

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[80]Adorno, *Aesthetic Theory*, p.295.

notations, though they are closely overlapping and, as one would expect with Adorno's non-deductive style, no definitive statement of them is set out.

Handwerk is the broadest, and most directly translated as 'craft', contrasting with both industrial production and art. It is in fact broader than our 'craft' however, in that it may be used to describe skilled activities like hairdressing, plumbing or bricklaying[81] The term *Kunstgewerbe*—whose components might be given as 'art trade' or 'art business', though this could easily be misconstrued—is rendered by Hullot-Kentor as 'arts and crafts' or 'applied arts' and is used by Adorno in a more obviously denigratory way to denote activities which maintain a connection to 'art', but whose purpose has been subsumed without protest by the commodity form. *Kunstgewerbe* serves as 'a prophetic warning for art',[82] inasmuch as art that follows the same logic will similarly lose its inner purposiveness.

The term *Metier*—translated by Hullot-Kentor as its French source *métier*—is perhaps the subtlest of these terms, since, while it bears a connection to the other 'craft' designations, it is used by Adorno to denote something that goes beyond the merely skilful and is thus 'fundamentally different from traditional artisanal methods [*handwerklich traditionalen*]'. The associations of the French term are retained here: not just manual work or skill, but something that pertains more directly to the subject of its attribution. Thus for Adorno, the sense it is not bound to a nostalgic simplicity in the pre-industrial; in fact it tends towards the progressive. He writes: 'its concept indicates the totum of capacities through which the artist does justice to the concep-

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[81] See Stefan Muthesius, 'Handwerk/Kunsthandwerk,' *Journal of Design History* 11, no. 1 (1998): 85–95

[82] Adorno, *Aesthetic Theory*, p.296.

tion of the work and precisely thereby severs the umbilical cord of tradition.'[83] While

skill or technique is needed here—and is indeed learnable, at least initially—such skill

does not *constitute* what Adorno means by *Metier*, and whatever is learned here is not

definitive: '*métier* ultimately sloughs off its provisional, limited shape.'[84] It is thus an

'almost mimetic' kind of *analysis*. Indeed, Adorno notes that *métier* is 'bound up'

with the 'auratic element, ... the memory of the hand that, tenderly, almost caress-

ingly, passed over the contours of the work and, by articulating them, also mollified

them.'[85] Here Adorno draws on the craft concept that is also elicited in Benjamin's

Storyteller, and the primacy of the *hand*. But Adorno also finds here a more profound

analytic capacity in the production of work that is not simply the application of rules,

but more also than unmediated mimesis. *Métier* then, has a paradoxical signification,

recalling an outmoded concept of production at the same time as breaking with tradi-

tion by virtue of its adequacy to the artwork whose concept directs it. This conception

is a specifically modern one since it relates to a memorial aspect in the modern concept

of art. Adorno writes:

> The quality [of art] that is at stake here is the quality of the trace that
> aesthetic forming leaves behind in what it forms without doing violence
> to it: it is the conciliatory element of culture in art that characterises even
> its most violent protestation. It is implicit in the word métier, and it cannot
> simply be translated as craft [*Handwerk*].[86]

It is important here that *métier* evokes a 'criterion of mastery', a 'civilisatory trace'

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[83] Ibid., p.58.
[84] Ibid., p.292.
[85] Ibid., p.292.
[86] Ibid., p.391.

that is irrevocable in the artwork, a stipulation that retains a craft-character in art that defines itself against craft. Adorno concludes: 'that trace is what is redolent of art in the artwork.'[87]

Finally, technique [*Technik*] refers most directly to consciously determined artistic means. It coincides with modern technology, but bears the trace of its historical development: 'all artistic procedures that form the material and allow themselves to be guided by it coalesce under the technological aspect, including those procedures that originated in the artisanal [*handwerklichen*] praxis of the medieval production of goods.' It is, of these constellatory terms of craft, the most rationally determined, being 'the predominance of conscious free control over the aesthetic means, in contrast to traditionalism, under the cover of which this control matured.'[88] Technique gives the artwork 'logical consistency', a necessity without which 'no work would gain objectivation; this necessity is art's antimimetic impulse, one borrowed externally, which unites the work as an interior.'[89] In this, technique is not simply a reproduction of the logic of the empirical world, but its refraction, giving an appreciable discursive aspect to the work, while frustrating fully determinate judgement. Adorno writes: 'Technique, as the measure of the "logic" of works, is also the measure of the suspension of logic.'[90]

Art then cannot be simply divorced from craft-like processes in Adorno's account, cannot divert itself off to pure expression or the undialectical isolation of *l'art pour l'art*. The traces of craft are evident in the terminology associated with art's produc-

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[87]Ibid., p.391.
[88]Ibid., p.290.
[89]Ibid., p.187.
[90]Ibid., p.291.

tion. The decisive factor for the retention of these aspects in the modern concept of art is that of the direction of technique by a certain purposiveness, but one which separates itself from the empirical form from which that technique is drawn. Adorno writes:

> Certainly artworks are defined by technique as something that is purposeful in itself. The work's *terminus ad quem*, however, has its locus exclusively in itself, not externally. Therefore the technique of its immanent purposefulness also remains 'without a purpose,' whereas technique itself constantly has extra-aesthetic technique as its model.[91]

Modern art cannot dismiss technique through an undialectical attempt to retrieve 'pure immediacy' as a 'protest against hardened social and conventional forms,' of the sort that Adorno finds in Expressionism as a reaction against the ornamental categories of *Jugendstil*.[92] Such would be a refusal of the form by which expression becomes objective, its unfolding in space and time. Art's vital condition is its difference to the merely empirical, but its critical relation to that is only gained through its adaptation of the latter's forms:

> Through the domination of the dominating, art revises the domination of nature to the core. In contrast to the semblance of inevitability that characterises these forms in empirical reality, art's control over them and over their relation to materials makes their arbitrariness in the empirical world evident.'[93]

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[91] Ibid., p.296.
[92] Adorno, *Aesthetics: 1958/59*, p.59.
[93] Adorno, *Aesthetic Theory*, p.189.

But in order to maintain its critical relation to empirical reality, art increasingly becomes a subjective—and that is, rationally determined—production. Art is not exempted from the process of rationalisation. It is only inasmuch as art itself is also the product of rational progression that it can give voice to what is suppressed by the same. Without its objectivation being consciously determined, art simply falls back into convention. This was the inevitable fate of Expressionism, for Adorno: 'this anti-conventional art, which expressionism was everywhere, must evidently produce something like certain conventions from within itself.'[94] The importance of conscious control over the production of works is of course a central feature of Oulipian practice, recalling in particular the group's antipathy towards the proposed immediacy of automatic writing as an evasion of the constraining forms of rationality: recall Queneau's dismissal of the writer 'who is a slave to ... rules that he doesn't see.'[95] Thus, regarding subjective determination, Adorno's principle of construction would seem to be borne out in practice by the Oulipo. However, the concept as Adorno develops it also becomes quite antithetical to the Oulipo's arbitrary applications of mathematical logic, as I will go on to argue later in this chapter.

As with the Oulipo's formal interventions, Adorno's principle of construction is a response—via Expressionism—to the inadequacy of convention to developing modernity, the breakdown of the self-evidence of artistic forms. Expressionism is, for Adorno, an intervening moment in art's development, since it 'cleansed the material ... of all merely conventional bonds,' and also '[carried] out that emancipation of the subject from predetermined forms which now permits it to control the material confidently and

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[94] Adorno, *Aesthetics: 1958/59*, p.61.
[95] Queneau, 'What is Art?' p.36.

freely.'[96] Art, having liberated itself from traditional forms, nevertheless finds subjective immediacy inadequate. Expression cannot be without some form, but this cannot be simply a re-assertion of classicist form. Such a reaction would be antithetical to the concept of art.[97] Construction then becomes a necessity where established forms can no longer be relied upon and where increasing subjective control is required to avoid slipping into uncritical orthodoxy. Thus far perhaps, no great divergence from Oulipian practice can be found. Indeed, inasmuch as Adorno's development from traditional forms to construction involves a move from reliance on given forms to the subjectively willed engagement of construction, Oulipian writers can be seen to have expressed quite similar sentiments. Two documents presenting the results of the group's early researches are testament to this. In a 1961 presentation for the Collège de Pataphysique, the group write:

> The divine potentiality of the Word, in spite of a few notable fulgurations, had always remained latent and implicit, although ever ready to spring forth. Here, it's a question of going straight to the explicit and putting these forces into play: this is what the creation of the Ouvroir de Littérature Potentielle signified. Thus, the time of *created creations*, which was that of the literary works we know, should cede to the era of *creating creations*, capable of developing from themselves and beyond themselves, in a manner at once predictable and inexhaustibly unforeseen.'[98]

Jacques Duchateau similarly, in his 1963 Lecture at Cerisy-la-Salle, observes that

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[96] Adorno, *Aesthetics: 1958/59*, p.63.

[97] 'For it is in the nature of artistic forms that they are only possible because of the historico-philosophical conditions of their period.' Ibid., p.62.

[98] Oulipo, 'The Collège de Pataphysique and the Oulipo,' pp.48–9.

established forms, those that have traditionally been implicit or have appeared to be self-sufficient, have been brought into question—his allusion here is obviously to the 'deep structures' of the likes of Lévi-Strauss (as I discussed in chapter 3, but also to the move in mathematics from intuitionism to axiomatics, as discussed in chapter 2):

> Writers have always used structures: some consciously, others unconsciously, some with the conviction that it is merely a question of simple evidence substantiated over time. From an intuitive perspective, evidence supervised by time is a prerequisite. From a structuralist perspective, shall we say, all that is evident is suspect. Those forms that are relatively general, accepted by all, and modelled by experience can conceal infra-forms. A systematic re-questioning is necessary to uncover them. A re-questioning which will lead, beyond the discovery of subjacent forms, to the invention of new ones.[99]

This questioning of forms is the ground, he proposes, upon which the Oulipo builds by inventing *new* forms 'made possible by a working practice first used by mathematicians: the axiomatic method.'[100] In this regard, Jacques Roubaud considers the turn to mathematics as the 'repair' of literature: 'the exhaustion of tradition, represented by rules, is the starting point in the search for a *second foundation*, that of mathematics.'[101] This latter point however, the deliberate 'transposition' of new forms from the *otherness* of mathematics into literary creation, is directly antithetical to the principle

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[99]Jacques Duchateau, 'Lecture on the Oulipo at Cerisy-la-Salle,' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Daniel Levin Becker (San Francisco: McSweeney's, 2018), p.16.

[100]Ibid., p.17.

[101]Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.93.

of construction. Adorno states that construction is not 'a form of power inflicted on the material as something foreign, through recourse to constraints, through stylistic will or the like, but rather an articulation that grows from the matter itself, even from the logic of the material itself.'[102] Here is manifest a strong distinction from the methods proposed by the Oulipo, since the principle of constraint is clearly characterised as something 'inflicted on the material'. This is its distinction from convention on the one hand and unmediated expression on the other.

Mathematisation, as the model of the form of constraint, is the guarantor of this distinctiveness, since it militates against the recuperation of received literary forms. Adorno acknowledges that mathematisation arises 'during historical periods when the traditional self-evidence of forms dissolves and no objective canon is available', by virtue of the semblance of 'universality and necessity'. It is, however, a weakness for Adorno. It is inadequate since it 'does not originate in the specific structure and fails when confronted with the particular.'[103] Mathematisation is thus antithetical to art in that it neutralises the specificity of artwork's critical socio-historical context, which should, rather, be addressed by the particularity of a subjectively determined construction. That is to say, it suppresses the artist's ability to work with the material in a properly constructive fashion. In his 1958/59 lectures, Adorno explicitly distinguishes this from 'constraint' (even if this is clearly not a reference to the Oulipo).[104] Construction is not constraint; its articulations are immanent to the material rather than a pre-formed demand.

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[102] Adorno, *Aesthetics: 1958/59*, p.62.

[103] Adorno, *Aesthetic Theory*, p.196.

[104] The construction of the work is not 'a form of power that is inflicted on the material as something foreign, through recourse to constraints, through stylistic will or the like, but rather an articulation that grows from the matter itself—even from the logic of the material itself, if you will.' Adorno, *Aesthetics: 1958/59*, p.62.

This reflects Adorno's philosophical stance more generally regarding his distinction between matter and method, the latter of which is itself characteristic of rational domination—the subsumption of the world to methodological principle, from which nothing new can emerge since it 'models the other after itself'[105]—to which art responds critically. That it is mathematics as *constraint* that is the primary manifestation of this imposition of form for the Oulipo only reinforces the disparity with Adorno's critique of method: 'Mathematics is tautology ... by the limitation of its total dominance to what it itself has already prepared and formed.'[106]

A typical example of this contra-Adornian imposition of mathematical form is manifest in Paul Braffort's *Mes Hypertropes*. The work makes use of the Fibonacci series, which is particularly interesting in this regard since it straddles the use of form which Adorno considers regrettable and that which he barely considers at all. The Fibonacci sequence (where each number is the sum of its two preceding terms—thus 1, 1, 2, 3, 5, 8, 13 ...), specifically in the asymptotic approach of the final two terms to the golden ratio, ϕ, has often been held to be a principle of 'beautiful' spatial proportions. As such it represents the kind of mathematisation that Adorno would object to as a rigidification into an axiom, indifferent to the particularity of what possesses or tends towards that proportion. But in its application to the construction of a sequence of poems, in Braffort's work, the spatiality is not readable in this sense, and it retains its arbitrariness as a mathematical imposition a priori unrelated to the work's content. Braffort utilises Zeckendorf's theorem (which states that any natural number can be formed by the sum of two or more Fibonacci numbers) to turn the structure given by the Fibonacci sequence into a constraint: 'le transfert de la structure mathématique vers

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[105] Adorno, *Against Epistemology*, p.12.
[106] Ibid., p.11.

la contrainte littéraire est d'ordre sémantique: le contenu du poème de rang n dépend du contenu des poèmes dont le rang forme la représentation "de ZECKENDORF" de n.'[107] ['*The transfer of the mathematical structure into the literary constraint is of semantic order: the contents of the poem of position n depend on the contents of the poems whose positions form the "ZECKENDORF" representation of n.*'] For example poem 20 must re-use elements of poems 2, 5, and 13.[108] A simpler (simpler to describe at least) example is Jacques Roubaud's *31 au cube*, consisting of 31 poems of 31 lines of 31 syllables.

Tradition and Technique in Schoenberg

The contrast between imposed form and the immanent logic of the material is exemplified in Adorno's consideration of the development of Arnold Schoenberg's compositional technique, particularly in its relation to tradition; and also provides a case study in certain limitations of Adorno's critical position that may be revealing with regard to the 'alternative modernism' of the Oulipo. Schoenberg's introduction of the twelve-tone series is one of the most significant innovations in twentieth-century composition. It marks the shift from the tonal organisation of the European tradition into a serial organisation, with the comfortable intervals of thirds and octaves, familiar to the western ear, no longer given priority. With this development, Adorno's prescription that the modern artwork must become increasingly rationally determined, that it

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[107] Paul Braffort, 'Mes Hypertropes: Vingt-et-un moins un poèmes à programme,' in *La Bibliothèque Oulipienne, Volume 1* (Paris: Éditions Ramsay, 1987), p.169.

[108] Braffort adds, in the preamble that 'bien entendu, nous avons ajouté au système ci dessus quelques contraintes supplémentaires que le lecteur déchiffrera sans peine.' ['*Of course, we have added to the above system, some supplementary constraints that the reader will decipher without difficulty.*']

must be *constructed* rather than emerging in a pseudo-organicity in accordance with prevailing norms, appears to have been realised. Schoenberg's music has often been criticised as 'intellectualised', itself an indication, as Adorno points out, that music is generally expected to be reassuringly 'exempted' from such demands and above all, 'melodic'. The trouble with the latter demand, for Adorno, is that the 'reified mind' does not understand melody but rather the 'docile repetition of mutilated fragments.'[109] However, for all that Schoenberg's compositional technique was revolutionary in the development of western music, he himself considered his work as very much part of the tradition that it appeared to overturn, rather than an abstracted intellectual exercise. He felt himself 'guided above all by very strong expressive licences in particular and in general, but also, and not least, by a feeling for the form and logic inherited from the tradition and well developed by application and consciousness.'[110]

Schoenberg's 'technique', by his own reckoning, is driven by a development *of*, rather than *beyond*, traditional material. That is, it moves—he composes—in accordance with a certain necessity of that material. Given this, Schoenberg distances the 'art' of composition from 'craft', associating the former with the immanent necessity, the latter only with a certain learned skill: 'I believe art is born of "I must", not of "I can". A craftsman "can".'[111] The point is not much developed philosophically, but evident here is a post-Kantian Romanticism of the artist-genius compelled to *create*, in opposition to the mere expediency of craft: 'this ability to express oneself differs fun-

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[109]Theodor W. Adorno, 'Arnold Schoenberg 1874–1951,' in *Prisms*, trans. Samuel and Shierry Weber (Cambridge, Mass: MIT Press, 1981), p.152.

[110]Schoenberg, cited in Pierre Boulez, 'Schoenberg is Dead,' in *Notes of an Apprenticeship*, ed. Paul Thevenin, trans. Herbert Weinstock (New York: Alfred A. Knopf, 1968), p.270. Adorno characterises Schoenberg as a 'naïve artist, above all in the often hapless intellectualisations with which he sought to justify his work.' Adorno, 'Schoenberg,' p.150

[111]Arnold Schoenberg, 'Problems in Teaching Art,' in *Style and Idea*, ed. Leonard Stein, trans. Leo Black (Berkeley: University of California Press, 1984), p.365.

damentally from the craftsman's ability, which in fact really expresses someone other than himself.'[112] It is of course a restricted concept of craft that is at stake here, and if what Schoenberg is resisting in his refusal of craft *as such* is the externality of purpose, at the same time, there is nevertheless a need for skill and learning in the artist, provided they remain in service of the artistic 'vision': 'the inspiration, the vision, the whole, breaks down during its representation into details whose constructed realisation reunites them into the whole.' To work without this vision, *merely* constructing, is, for Schoenberg to work 'without freedom'.[113] But even this 'vision' does not appear *ex nihilo*, but is rather in response to a situation which must be confronted by the artist: Schoenberg draws an analogy with technological innovations—he recounts reading documents in a patent office: 'genuine results, which proceed from the point at issue. Here is "inspiration", mind-work, achievement.'[114] An artist, whose genius should be in response to a 'point at issue', must 'come to grips with all the problems'.[115] While there is a tendency here toward a rather loosely romantic artist-as-genius thinking, Schoenberg nevertheless holds that there is a context which innovation addresses. That context is tradition.

The aspect of traditionalism might seem to be at odds with Adorno's affirmation of the importance of the new as a category of modern art: 'since the mid-nineteenth century and the rise of high capitalism, the category of the new has been central. … Since that moment no artwork has succeeded that rebuffed the ever fluctuating concept of the modern.'[116] Yet tradition is itself not static: 'the attitude of contemporary art toward

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[112]Ibid., p.365.

[113]Arnold Schoenberg, 'Constructed Music,' in *Style and Idea*, ed. Leonard Stein, trans. Leo Black (Berkeley: University of California Press, 1984), p.107.

[114]Schoenberg, 'Problems,' p.368.

[115]Ibid., p.368.

[116]Adorno, *Aesthetic Theory*, p.28.

tradition, usually reviled as a loss of tradition, is predicated on the inner transformation of the category of tradition itself.'[117] Schoenberg, for Adorno at least, was a constant innovator, but always with reference to a tradition of which he saw himself a part, and the working through of his innovations always developmental with that tradition. For Adorno then, this relation to tradition is not an unproductive contradiction, but one that is in fact needed for innovation, such that 'only that which has been nourished with the life-blood of the tradition can possibly have the power to confront it authentically.'[118]

The extent to which Schoenberg adequately confronts tradition is arguable however. Consider Pierre Boulez's criticism that Schoenberg is actually bound by an unyielding idea of tradition, even if he shifts certain of its contents. Boulez, while applauding Schoenberg's innovations up to a point (that point being the latter's atonal works prior to the introduction of twelve-tone technique), asserts a dead-end with do-decaphony, which 'went off in the wrong direction so persistently that it would be hard to find an equally mistaken perspective in the entire history of music.'[119] This is not because the technique is too 'radical', as reactionaries would have it, nor because it is (or became) too mathematically formal, as Adorno's critique holds. If anything it is not formally radical *enough*, or to be more precise, not rigorous enough in its re-alisation of the revolutionary potential afforded by the disruption of traditional forms. Boulez points out that, from the beginning, Schoenberg's own traditionalism holds the inevitability of ultimate failure of the twelve-tone system. As he points out, the piece that inaugurated the technique (the Five Pieces for piano, opus 23, that Boulez calls Schoenberg's 'no-man's land of rigour') has the form of a waltz: as Boulez puts it,

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[117] Ibid., p.29.
[118] Adorno, 'Schoenberg,' p.155.
[119] Boulez, 'Schoenberg is Dead,' p.271.

a 'very "expressionistic" meeting of the first dodecaphonic composition with a type-product of German Romanticism.'[120] Boulez complains that Schoenberg's shift of organisation of tonal material does not extend to a more radical structural reorganisation, 'extending from the generation of the constituent elements to the total architecture of a work.'[121] More specifically, he notes that Schoenberg's 'exploration of the serial domain had been carried on unilaterally: it was lacking on the rhythmic level, even on that of sound, properly speaking—the intensities and attacks.'[122] The flaw with Schoenberg's twelve-tone work, for Boulez, is that it has not adequately upset the framework inherited from the western tradition, a 'very unhappy heritage owed to scarcely defensible scleroses of a certain bastard language adopted by romanticism.'[123] Boulez finds in Schoenberg the attempt to maintain something unchanging in the western musical tradition: in this sense, twelve-tone both becomes such a principle, but also implicitly reaffirms the persistence of that which, due the narrowness of its domain, it has failed to confront. This contrasts with Boulez's own demand for 'the constant reconsideration of what is transitory that the artist must accept, and with it reconsideration of his own beliefs and attitudes.'[124]

That twelve-tone technique has become a dead-end is a position shared by Adorno, though his criticism is rather less damning of Schoenberg himself[125] than that of

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[120]Ibid., p.271.

[121]Ibid., p.272.

[122]Ibid., p.274.

[123]Ibid., p.273.

[124]Boulez, cited in Cunningham, 'A Time for Dissonance and Noise,' p.64.

[125]Though perhaps more of certain followers: 'Schoenberg himself distinguished almost mechanically between the preparation of twelve-tone material and composition, and on account of this distinction he had reason to regret his ingenious technique. The heightened logical consistency of the following generation, however, which obliterated the distinction between the preparation of the material and actual composition, not only exchanged integration for music's self-alienation but incurred the loss of articulation, without which form is almost inconceivable.' Adorno, *Aesthetic Theory*, p.196.

Boulez. Adorno similarly finds that the twelve-tone technique has become rigid, but this is described as an inevitability, rather than a fatal decision. Initially at least, Adorno contends, twelve-tone developed progressively from free atonality, just as the latter had, in its time, emerged out of 'large tonal chamber music.'[126] The trouble is that in establishing itself as a definable logical schema, independent of the material in which it developed, it becomes static: 'no longer open and accessible to dialectical correction.' Adorno continues:

> [Technical-aesthetic and cognitive systems] become models. But in denying themselves self-reflection and making themselves static, they become moribund and cripple the very impulse that produced the system in the first place. There is no middle way that avoids the alternative. To ignore the insights that have coalesced into the system is to cling impotently to what has been superseded. Yet the system itself becomes a fixed idea and universal recipe.[127]

The hypostatisation of method is the termination of that technique's truth in art, that is its ability to reveal something—the *untruth* of its conditions. Inasmuch as that truth is valuable, and indeed constitutive of art, it is imperative that art resist its incorporation into a logical totality, and yet 'as the aesthetic subject is less and less able to orient itself on something which is both distinct from it and yet in harmony with it,' it

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[126] Adorno, 'Schoenberg,' p.162 Adorno gives a rather more severe assessment of the move from atonality to twelve-tone a few years later, as the 'violence and rupture in the transition from the experiences of free atonality to the systematisation of twelve-note technique', in which 'order is derived from the need for order and not from the truth of the matter.' Adorno, 'Vers une musique informelle,' pp.274–5.

[127] Adorno, 'Schoenberg,' p.166.

cannot avoid that direction.[128] Art here finds itself in a double-bind, since the reverse pole of this indifferent logical organisation—what Adorno calls the 'nominalistic artwork', which 'should become an artwork by being organised from below to above, not by having principles of organisation foisted on it'—itself ends in isolation from any signifying norms that give social meaning to the work: 'Unchecked aesthetic nominalism liquidates ... all forms as a remnant of a spiritual being-in-itself. It terminates in a literal facticity, and this is irreconcilable with art.[129]

The rather pessimistic picture presented here is that of art's dissolution through its own development. However, in Adorno's essay 'Vers une musique informelle', he does offer an idea of musical development that would avoid this impasse, and yet, as an idea, it must perhaps remain *just* that. Although inevitably, given that it is offered in response to the deleterious consequences for art of a defined system, his *musique informelle* recalls the tendency which 'mocks all efforts at definition,' Adorno does nevertheless offer its 'parameters' as 'a type of music which has discarded all forms which are external or abstract or which confront it in an inflexible way' as well as being 'objectively compelling ... in the musical substance itself.'[130] These criteria meet perhaps their strongest antithesis with the tendency towards mathematisation in music, which is, Adorno avers 'always a compositional defect. ... Anything which only seems right everywhere, cannot be right anywhere.'[131] This thesis of the importance of the immanence of development in terms of artistic materials is quite familiar, though usually, in Adorno's works, presented as a progressive impossibility. The presentation here is slightly more optimistic inasmuch as Adorno offers informal music as a

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[128]Ibid., p.166.
[129]Adorno, *Aesthetic Theory*, p.300.
[130]Adorno, 'Vers une musique informelle,' p.272.
[131]Ibid., p.308.

regulative idea, 'a little like Kant's eternal peace. Kant himself thought of this as an actual, concrete possibility which is capable of realisation and yet is nevertheless just an idea.'[132]

Is there, however, something rather conservative in Adorno's prescription? Although he specifically refuses a 'a repeat of the style of 1910'—that is, Schoenberg's atonal period—there is, in his refusal to countenance certain 'formalist' interventions into compositional process, a rather narrow conception of musical 'material'. Indeed, Boulez here seems rather more radical in his suggestion that, 'perhaps one could enlarge the serial domain with intervals other than the half-tone: microdistances, irregular intervals, complex sounds.'[133] That Adorno's 'tastes' are in the western, and perhaps even more narrowly, German, tradition of 'serious' music is well-acknowledged, especially given his apparently dismissive critiques of jazz. In his contemplation of the musical material of any given epoch, how it has developed and how it might develop, there is little awareness that progressive forms may come from different developmental trajectories. But this problem of restricted scope goes even further, to the heart of the developmental aspect of Adorno's dialectic of tradition and modernity, in the concept of dissonance. That concept, as David Cunningham points out, where it is considered as the dismantling of tonality, makes too central the concept of harmony as the musical category upon which this dialectic of the new moves, which 'has the effect of either marginalising other forms of experimentation, in the spheres, for example, of rhythm or timbre, or, as in total serialism, presuming that such spheres can be assimilated to the same essential procedures as those underlying the negation of tonality.'[134]

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[132]Ibid., p.322.
[133]Boulez, 'Schoenberg is Dead,' p.275.
[134]Cunningham, 'A Time for Dissonance and Noise,' p.67.

Clearly the question of the relation of mathematical forms to musical development, as so despised by Adorno, is not the same as that of the interrelations of different musical traditions, not least because, while the latter might be offered as a factor simply beyond Adorno's purview, the former is precisely that logic of dominating authority that art, for its truth content, needs to resist. But if it is acknowledged that a *unilinear* development of composition (constituted as a *single* tradition and its ongoing negation, such that the 'negated is nevertheless retained in the negation'[135]), however dialectically acute, may not be adequate to allow an expanded field of conceptual modernity, then the terrain opens up to developments that are not just one negation after another in a Hegelian movement of history, even if, as with Adorno, it lacks teleological resolution.

Material

The narrowness of Adorno's conception of music's historical development can be considered in terms of what he considers its material. It is worth noting from the outset that the idea of art as working with 'material' again recalls the concept of craft, not least because one of the most obvious characteristics of craft is its material specificity and the nature of productive methods that are tightly interwoven with the material's characteristics. Of course where these materials are typically considered as physical substances, it must be stated that 'material' in the context of the present argument means much more. Nevertheless, the craft-like work process that the concept of mate-

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[135] 'If [the composer] turns critically against tradition through the use of an autonomous material, one completely purged of concepts such as consonance, dissonance, triad and diatonicism, the negated is nevertheless retained in the negation. Such works speak by virtue of the taboos they radiate.' Adorno, *Aesthetic Theory*, p.203.

rial suggests provides a perspective on artistic production that foregrounds the activity of the work itself rather than the status of the work produced. Interrogating the concept of material then may lead to an expanded idea of the critical value of the *craft* of artistic production.

Artistic material is, for Adorno, the totality of the conditions that the artist confronts. Material is distinct from the *content* of an artwork, inasmuch as the latter is what transpires in the work (mediated by form), whereas the material precedes the production of the work: 'material is what is formed' in the process. Adorno continues:

> Material ... is what artists work with: it is the sum of all that is available to them, including words, colours, sounds, associations of every sort and every technique ever developed. To this extent, forms too can become material; it is everything that artists encounter about which they must make a decision.'[136]

This scope of consideration for artist material is very broad: the inclusion of technique is particularly interesting, since technique is also the 'mastery' over material,[137] but inasmuch as it is also something that has a particular state of development at any given time, in accord with the social and productive conditions of that time, it too is considered as part of the total material available for work. Thus technique and material are mutually mediated in their historical development. Similarly, Adorno's acknowledgement that 'forms too can become material' is interesting for a parallel reason, since 'material is what is formed'. Thus again there is a mutual mediation of form and

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[136] Ibid., p.202.
[137] 'The aesthetic name for mastery over material—technique...' Ibid., p.290.

material. The consideration is opened up not just of developmental forms in artworks (which are already, as he points out, the return of 'unsolved antagonisms of reality'[138]), but also social forms themselves (particularly those of quantitative equivalence) of the sort that the artwork may critically adapt. Despite Adorno's avowed inclusion of forms as material however, he does not appear to follow through with the idea that hypostatised forms can be worked with in any way that is not ruinous to the artwork produced. By Adorno's thinking, forms that have become static only enter into the artwork as neutralising methodical forms. To put it another way, it seems that Adorno does not countenance the possibility that a properly artistic *decision* could be made about static form as material. As I will argue below, however, if such forms are considered as material rather than method, this actually opens an interesting development, whereby hypostatised form becomes a peculiarly resistant type of material, its rigidification not the neutraliser of tension, but rather a heightened provocation for artistic technique.

Important to Adorno's thinking here is that 'material is not natural material even if it appears so to artists; rather, it is thoroughly historical,'[139] a point which is perhaps more obvious with material that is conceptual rather than supposedly raw physical 'stuff', though it applies equally in the latter case. (The antithesis of nature and history is in any case, for Adorno more generally, a dialectical relation, such that it is not just that artistic material is not 'natural', but that the concept of nature itself depends on that of history—and similarly the converse.[140]) Adorno's 'artistic material' is constituted by the condition of its historical moment, and the work thereby produced takes up this material and re-presents it in refracted form. Thus, as Peter Osborne notes: 'the critical

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[138] Ibid., p.7.

[139] Ibid., p.203.

[140] See Theodor W. Adorno, 'The Idea of Natural History,' trans. Robert Hullot-Kentor, *Telos*, no. 60 (June 1984): 111–124.

potentiality of a work is determined by the materials out of which it is produced.'[141] In this regard, the importance of the concept of material becomes evident: Osborne points out Peter Bürger's assertion that the concept of material is central to Adorno's aesthetics as the 'basic category through which the aesthetic and social dialectics are mediated.' The trouble is however—a point also raised by Cunningham with regard to modern music as I noted above,[142] and one important as well to Bürger and Osborne— that '[Adorno] can recognise only one material in a given epoch.'[143] That is to say, the *total* material of the epoch can only allow its forms to come from the same line of development; there are, by this conception, no parallel lines of development, from which forms (their fluidity or stasis notwithstanding) can cross over.

In this light, some consideration must be given to what constitutes the material engaged by the Oulipo worked on in their proposal of constrained writing. If Adorno is taken at his word and 'forms too can become material', it is plausible to consider the rigidified forms employed by the Oulipo as *constraints* as material, albeit material of a somewhat resistant character. This is all the more so with the definitive forms imported or 'translated' from mathematics, which here take on a logical impermeability. While Adorno himself considers such formal rigidity to be an artistic weakness, it is nevertheless the case that a decision is taken here, a choice made about the material: the constraint is nothing if not deliberate. The constrained form then becomes part of the palette of materials, selected or prepared, that are necessary for the construction of the Oulipian work. In Oulipian methods, the constraint is the most definitive prescription as a part of the material, but it then imposes its own demands on the remaining material

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[141] Osborne, 'Adorno and the Metaphysics of Modernism,' p.44.
[142] See above, p.254.
[143] Bürger, cited in Osborne, 'Adorno and the Metaphysics of Modernism,' p.44.

that must be chosen for the construction of a work. Indeed that the whole process is rendered more *conscious* is an oft-cited justification for the principle of constraint, and one of the primary distinctions from Surrealist practice.

This *imposition* of forms appears antithetical to Adorno's own presentation of what constitute the immanent domain of artistic construction. Inasmuch as mathematical relations may be found in the artwork, for Adorno, 'they can only be grasped in relation to a historically concrete configuration, they cannot be hypostatised.'[144] Yet this is precisely what the Oulipian use of constraint does: it takes abstract mathematical form and applies it arbitrarily. In some respects (but only some) this is comparable with Schoenberg's twelve-tone technique because this too, at least in the terms that Adorno criticises, is an instance of hypostatised form in the artwork. Putting this in terms of the employment of material, as was indicated above, Adorno notes that, with twelve-tone technique, the more traditional 'reconciliation' of material and composition is lost. Adorno states, that with twelve-tone technique: 'the composer's material, the row, is preformed—or, as many would not hesitate to assert, manipulated by him'— this does not represent much concern for 'the connection between *what* is composed and the *materials* of composition.'[145] That the material is 'preformed' is significant in that it suggests that the forming of the material proper to artistic production has been supplanted by a *given* form that is insensitive to the rest of the material, and thus resistant to composition.

The trouble here for Adorno, of a lack of reconciliation of a particular part of the artistic material with the composition itself—and twelve-tone technique can le-

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[144] Adorno, *Aesthetic Theory*, p.390.
[145] Adorno, 'Vers une musique informelle,' p.285.

gitimately be called material, but, crucially, preformed or *treated* material[146]—comes about as a result of a development in the tonal tradition. This is precisely Schoenberg's self-conception, as noted above. It thus takes on the position of an authority of form in the tradition from which it meant to distance itself. As Adorno writes, 'while inflicting the most deadly blows on authority through his work, he seeks to defend the work as though before a hidden authority and ultimately to make it itself the authority.'[147] In this sense, for Adorno, Schoenberg's relation to tradition is not one that challenges tradition as such, but rather the specific manifestations of it at any particular moment. While this can be considered, in Adorno's terms, as the 'logic of music itself', there remains a desire for order, with the risk (the risk that is realised in the twelve-tone technique) that a new form that breaks the old authority, in its own orderliness, becomes the replacement authority.[148] In that case, the problem with Schoenberg's serial technique, where it might be criticised in Adorno's terms as arbitrary, is rather that it is still too traditional, as Boulez indicates; that is, right from the start, it is not arbitrary *enough*. Boulez's prescription is for a more comprehensive disruption. Adorno, with Schoenberg, will only allow a linear progression.

It is thus its inherent arbitrariness to its domain of application that distinguishes Oulipian constraint from something like twelve-tone technique. The former does not mean to set itself up as a universal authority of literary composition, neither as the wider practice of constraint as such, nor any particular manifestation of it. Precisely what determines it as constraint, as opposed to convention, norm, 'nature', or any such

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[146] '... comparable to an industrial form of production: a ruthlessness in the treatment of the material.' Ibid., p.285.

[147] Adorno, 'Schoenberg,' p.151.

[148] 'The vulgar notion that the twelve-note technique has its origins in the longing for order does contain a grain of truth, ... despite its blindness towards the role played in its emergence by the logic of music itself.' Adorno, 'Vers une musique informelle,' p.275.

'given' of the medium, is this lack of inherent necessity. Indeed, constraint needs to retain its distinction from the 'conventional' and must not become too widely accepted, too *normal* (and this is one of the problems of longevity for the Oulipo). The distinction between the constraint and the *conventional* context, against which constraint is defined, is noted by Marcel Bénabou: 'people accept the rule, they tolerate technique, but they refuse constraint.' That is, they object to what is perceived as the 'unnecessary' rule—one that is 'exaggerative and excessive.'[149] Considering this in relation to his criticism of the use of hypostatised form in artworks, it can be seen that Adorno—while he does not appear to have encountered the Oulipo's work and would likely not have been much impressed had he done so—does not address anything that is quite like it. His criticism of twelve-tone technique is precisely as something immanently developed as a necessity of a strengthened artistic construction that has defeated itself by that same strength. His criticisms of mathematisation tend to acknowledge certain aspects of mathematical proportion and so on, but object to their becoming abstracted. The critical point is based around the lack of a connection between method and material, but it is to counter the supposition that such method itself demands that it *ought* to be congruent—not least by virtue of its claim to the same line of historical development as the matter—and that its forms can be isolated as universally applicable. What is offered by the Oulipo however, is, I suggest, a *radical* arbitrariness of method.

Peter Osborne writes that 'once [Adorno's] unilinearity is recognised as an inadequate representation of the complexity and essential unevenness of the process of historical development, ... a whole series of aesthetic possibilities begin to emerge centred upon the "non-contemporaneous" moment of the dialectics of development.'[150] It

[149]Bénabou, 'Rule and Constraint,' p.41.
[150]Osborne, 'Adorno and the Metaphysics of Modernism,' p.43.

is then possible to look again at formal interventions that would, on the face of it, seem to be prohibited by Adorno's prescription for art as a defeat for the vital tension of the work. Osborne here identifies the temporal aspect of this opening, that is, that there are numerous traditions and social developments which are not necessarily synchronised as a single progressive vector. These can then be seen to possess forms which may migrate to each other, liberating what might otherwise be dead-end processes. The Oulipo's relating back to their anticipatory plagiarists, the Troubadours, Grands Rhétoriqueurs and others as practitioners of a kind of literary craft is not so easily dismissed as nostalgia then, if it is allowed that the line of development is not even, not always a straight line—indeed not always a *single* line.[151] Many of the Oulipo's forebears are, in literary history, generally considered marginal—as Perec contends, 'systematic artifices, formal mannerisms (that which, in the final analysis, constitutes Rabelais, Sterne, Roussel …) are relegated to the registers of asylums for literary madmen.'[152] Raymond Roussel here is one of the clearest anticipatory plagiarists of the Oulipo,[153] but was, in his time (and still is, though is now valued for it), considered something of an eccentric. Indeed this kind of marginality is (or was) perhaps vital for the Oulipo themselves. It is likely that the status of the group as outside the bounds of conventional literary history gives them a peculiarity that guards against constraint becoming that which defeats it—convention.[154]

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[151] In any case, the Oulipo are not alone in these historical recuperations; Ezra Pound, for example, was also fascinated by the Troubadours, as well as other historically and geographically disparate poetic forms.

[152] Perec, 'History of the Lipogram,' p.98.

[153] Roussel's 'procedure' involved constructing narratives in accordance with an arbitrary statement and its homophonic equivalent. The similarity to Oulipian constraint is clear from Michel Leiris's 1936 interest in his 'voluntary submission to a complicated, difficult rule (and especially the fact of having to focus his attention on solving a problem whose givens are as foreign, detached, futile as possible).' Michel Leiris, 'How I Wrote Certain of My Books,' in *Brisées: Broken Branches*, trans. Lydia Davis (San Francisco: North Point Press, 1989), p.51.

[154] In the epilogue, I will consider whether they have managed to retain this status.

Jacques Roubaud makes the provocative assertion that 'the claim to craftsmanship reflects an affirmation of amateurism; it is a voluntary archaism.'[155] But this archaism of certain formal devices in a different context may yet render them rather different in critical terms to their earlier appearance. There is thus a difference appreciable in their adoption in the *now* of the early Oulipo (the 1960s), inasmuch as the *meaning* of such rational interventions in a 'creative' process is different in a time where such forms of craft—craft-forms—are specifically demoted/deprecated by the dominant concept of art. If these forms are considered as craft, they are novel, because the meaning of craft has changed, and here the significance of Roubaud's 'voluntary' comes to the fore, in conjunction with the earlier assertions of the Oulipo of their self-consciousness of method. Craft is no longer the integrated harmonious productive activity of historical retrospection; thus to engage in such an activity now is in defiance of the general current of social necessity (including the social necessity of art).

The emergence of artistic possibilities can also be considered in terms of the remaining spaces of un-administered life in the social totality, or even that aspects of rational domination may yet be artistically refracted in ways unconsidered by Adorno, lateral to the progressive negation of the 'line' of development. Adorno himself notes that art must confront itself with *anti-art*, which 'implies nothing less than that art must go beyond its own concept in order to remain faithful to that concept,'[156] but does not allow that this might include some rethinking of 'craft'.

With this allowance in mind then, I want to propose that the Oulipo's use of arbitrary formal interventions, primarily mathematical, represents the instantiation of the

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[155] Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.85.

[156] Adorno, *Aesthetic Theory*, p.40.

radically arbitrary as artistic material. This form comes not from the main line of writing tradition, and ultimately not even from the marginal mannerist tradition, but from an unrelated discipline, mathematics. It thus cannot be seen as the hypostatisation of method that has its origins in motivic or thematic practice in writing, as Adorno sees something like twelve-tone technique. It is quite the opposite. Thus as material, it demands subjective engagement, rather than providing ready-made form in accordance with an idea of what the work *should* be. It is also worth pointing out that this artisanal aspect makes it quite distinct from chance-based operations, such as those of John Cage, whose aim, as Adorno says, is 'to transform psychological ego weakness into aesthetic strength;'[157] that is, to let the material itself speak rather than the artistic subject. There is no rejection or suppression of the voluntary in Oulipian literary method. The point is, rather, to consider this arbitrary form as something to be worked with, that technique must master: the designation of constraint as material (in Adorno's sense) makes this clear and brings back to the fore the material-engagement sense of craft (*Handwerk, travaux manuels*). This is therefore an attempted recuperation of craft (though it never wholly went away in art) as a form of non-alienated labour with material, even as both the activity of labour and this material itself appear in capitalist modernity in a necessarily alienated form.

The arbitrary constraint, since it has logical form by definition, has the implication of a logical (and thus predictable) trajectory (and this again differs from chance operations): an end is to be met in fulfilling the demands of the constraint with a text. As Roubaud proposes, 'a constraint must "prove" at least one text.'[158] The 'proof' of the text is that it be traced back to its axiomatic grounds—its constraint(s); thus there is an

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[157] Adorno, 'Vers une musique informelle,' p.283.
[158] Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.91.

instrumental demand in this property of the constraint.[159] Where a certain 'artistry' (in a pre-modern sense) is required to meet a pre-determined end, the activity is typically called (and thereby denigrated as) craft.

But can mathematical constraint really escape the damaging instrumentalisation of the commodity form? It is arguable what the 'origins' of mathematics are, whether a fully materialist account can be given of the discipline. I do not intend to take a position on that, but note that, for Adorno, it appears as the epitome of method without material, and thus aesthetically and philosophically null—Adorno would seem to concur with Hegel's dismissal of mathematics as 'defective cognition . . . of a kind that philosophy must disdain.'[160] There is then, as I noted in chapter 2, a particular perversity to the use of this form as the radical arbitrariness of the Oulipo (which is, as well, its justification): its inappropriateness and its arbitrariness are grounded in the same social fact, that mathematically deductive logic is antithetical to the idea of artistic production in modern consciousness—precisely that its arbitrary method (which is fine in terms of its own coherence) is indifferent to the truth of oppression that art reveals.

How then can this instrumentality be read critically in the work of the Oulipo? For Adorno, 'that art is possible in the midst of rationality, and that it employs its means, is a response to the faulty irrationality of the rational world as an over-administered

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[159]The constraint for which no text could be written could be an interesting fantastical structure, but clearly it could no longer be a 'constraint' since there is nothing for it to constrain.

[160]'Mathematics is proud of the self-evidence of this defective cognition, and flaunts it even in the face of philosophy, but it is based solely on the poverty of its purpose and the defectiveness of its material, and is therefore of a kind that philosophy must disdain.—The purpose or concept of mathematics is magnitude. This is precisely the inessential, unconceptual relationship. Accordingly, the movement of knowing proceeds on the surface, does not touch the Thing itself, not the essence or the concept, and is therefore no conceptual comprehension.' George Wilhelm Friedrich Hegel, *The Phenomenology of Spirit*, trans. Michael Inwood (Oxford: Oxford University Press, 2018), §45.

world.'[161] And yet art must subvert those means: 'art mobilises technique in an opposite direction than does domination.'[162] Would the importation of mathematics arbitrarily not maintain the direction of domination rather than reformulate it? Or is it possible that the method's *lack* of immanent reformulation is actually itself subversive? Inasmuch as the Oulipian constraint involves a problem, and the resultant work is then, in those terms at least, a 'proof' of the required deduction, it has no literary relevance. It does not by any necessity touch the literary purport of the task of writing. There are cases, of course, where the constrained form is incorporated into the content of the work quite deliberately, Georges Perec's *La Disparition* being perhaps the most famous. In fact, Jacques Roubaud makes the claim that the recounting of the constraint in this case is a consequence of an Oulipian axiom (although it is one of his own positing). The constraint in this text is, he writes:

> . . . at once . . . its developmental mechanism, and at the same time the meaning of the text. . . . It is thus both the story of what it recounts and the story of the constraint which creates that which is recounted. This highly involuted aspect of constraint (which is undoubtedly not proper to Oulipian constraint, but which is in this case practically pure) is a direct consequence of the . . . axiom: constraint is a principle, not a means.'[163]

Note, however, Roubaud's caveat, that this is 'not proper to Oulipian constraint': that is, it is a consequence, rather than a pre-condition—it is *not* itself an axiom (and the point is thus, in this respect, fundamentally misrepresented by Christian Bök as

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[161] Adorno, *Aesthetic Theory*, p.73.

[162] Ibid., p.74.

[163] Roubaud, 'Mathematics in the Method of Raymond Queneau,' pp.86–87.

'the constraint, if enacted, must mention its own existence'[164]). Careful interpretation is required here, since Roubaud's affirmation of the narratological or thematic consequence of his lipogrammatic constraint does *not* imply that the consequences of all constrained forms must be readable in such terms even if they have consequences of some sort. In any case, as I stated, this is Roubaud's position, and it is not definitively Oulipian; indeed Oskar Pastior appears to take the polar opposite position: 'an oulipian text cannot, should not, speak *of* itself—it *speaks*, quite simply, or it doesn't speak.'[165] Whatever the legibility of the constraint in the final text, my argument here is that the critical interpretation of the process of textual production under constraint is indifferent to whether those consequences are manifest in the literary reading of the resultant work.

It is also this latter point that maintains the method's critical interest, despite the paradox of its being instrumentalised. Since the instrumentality does not directly render the work itself useful (socially, as commodity form), the technique, in itself, maintains a kind of futility, a genuinely useless craft. There are, in a sense, two processes at work in the Oulipian process of writing: the instrumentalised logic of meeting a constraint, and the artistic logic of the work (about which the Oulipo makes no demand). The relation of the two, as a material condition of writing, is a difficult context to work with. It demands a skill—a *technē*—of writing to meet its instrumental demands, but at the same time, those instrumental demands are not socially ordered as an end for

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[164]Christian Bök, 'Oulipo and Unconscious Tyranny,' in *The Noulipian Analects*, ed. Christine Wertheim and Matias Viegener (Los Angeles: Les Figues Press, 2007), p.160. The odd formulation here of the constraint's 'mentioning' itself is indicative of Bök's assimilation of the Oulipo—whose major concern he posits as 'rules about rules'—to his own movement of conceptual writing, where the idea and its performance are primary—a point which I will return to in the Epilogue.

[165]Oskar Pastior, 'Rule of the Game, Threnodials, Translations,' in *All That is Evident is Suspect: Readings from the Oulipo 1963-2018*, ed. Ian Monk and Daniel Levin Becker, trans. Ian Monk (San Francisco: McSweeney's, 2018), p.133.

the artwork. They are contained by the *decision* to use constrained form. Now for this to have some kind of critical truth, in terms that are informed by Adorno's aesthetics, it must offer some kind of incorporation of its material in terms that dominate it in a refracted form of the dominance of mathematical form socially; we might say, the constrained genesis of the work, representing a certain 'unfreedom' speaks for the 'victim', as Adorno affirms of the artwork. This is the image of mathematical logic in its social applications, the fact that it is used to dominate social forms of all sorts instrumentally; but here it is incorporated into an artistic project and made useless, while retaining instrumental form.

Take even the relative simplicity of François Le Lionnais's *Boolean Poetry*. The method draws on mathematical set theory, and the consideration of any given textual work as a set of terms:

> C'est ainsi qu'un dictionnaire donné—par exemple, le Dictionnaire de l'Académie—constitue un ensemble dont chaque mot est un élément. Un poème forgé uniquement avec des mots de ce dictionnaire est un *sous-ensemble*. Un autre poème, un autre *sous-ensemble*. Le Lecteur imaginera sans peine ce que l'on appellera la *réunion* de ces deux sous-ensembles— ce sera la liste des mots qui se trouvent *soit* dans l'un, *soit* dans l'autre poème—et l'*intersection* de ces deux sous-ensembles—ce sera la liste des mots qui se trouvent *à la fois* dans l'un et dans l'autre poème.[166]
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> [*It is thus that a given dictionary—the* Dictionnaire de l'Académie, *for example—constitutes a set of which each word is an element. A poem*

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[166]François Le Lionnais, 'Poèmes booléens,' in *La littérature potentielle* (Paris: Gallimard, folio essais, 1973), p.258.

formed with words from this dictionary alone is a sub-set. *Another poem is another* sub-set. *The reader will imagine without difficulty what will be called the* union *of these two sub-sets—that will be the list of words which are found in one or the other poem—and the* intersection *of these two sub-sets—which will be the list of words which are found* at the same time *in the one and the other poem.*]

Le Lionnais notes that his resultant poems do not represent the totality of the intersection and that 'cette possibilité de choix permet d'échapper à toute mécanisation et tout automatisme. Elle garantit la liberté créatrice (ou expressive) de l'auteur à l'intérieur d'un procédé donné.'[167] ['*This possibility of choice allows the escape from total mechanisation and total automatism. It guarantees the creative (or expressive) freedom of the author within a given process.*'] In fact, by the standard of some Oulipian constraints, it is far from programmatic, though the narrowness of the constraint here depends on the choice of source material. But the description of this process in specifically mathematical terms is highly significant: Le Lionnais makes explicit that 'les notions que nous avons décrites appartiennent à deux branches des mathématiques: Théorie des Ensembles et Algèbre de Boole'[168] ['*The notions that we have described belong to two branches of mathematics: set theory and boolean algebra.*'] The process of poetic composition, where the right word would seem to be, lyrically at least, essential, meets the operation of a mathematical formalism that is, properly speaking, wholly indifferent to the nature of what it structures (that is, after all, the basis on which set theory operates—the fact of membership of the set, rather than the reason for or meaning of that membership). The set theoretical intersection appears here in

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[167] Ibid., p.262.
[168] Ibid., pp.268–8.

the constructive process as a formally disinterested operation, but upon which the authorial subject must work, both to produce a poem, but also to prove the viability of the intersection *as* a poem. It is this latter that is the more specifically Oulipian point, as opposed to questions of authorial 'success' in a literary sense: Le Lionnais himself notes that 'la procédé ... n'offre de possibilités intéressantes que dans des cas exceptionels.[169] ['*The procedure ... offers interesting possibilities only in exceptional cases.*'] The point at stake is the process.

Throughout this thesis, I have indicated that the interesting critical point in Oulipian work is in the method (or the process) rather than the end-work. This is where the innovation is: as Bénabou states, 'to create structure—Oulipian act *par excellence*—is ... to propose an as yet undiscovered mode of organisation for linguistic objects.'[170] In fact it is arguably the case that the Oulipian process itself must include its consequential text, but that this end-work, in literary terms, is not what is at stake, thus there should, with this concession, be just one 'proof' text (of course there may be any number of other texts utilising the same constraint but this enters into a different domain of reception). The situation is clearly summed up by Roubaud:

> ... a constraint having been defined, a small number of texts (only one,
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> in some cases) are composed by deduction from this axiom, which then
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> ceases to preoccupy the Oulipo; the former then enter either into the public
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> domain or into that of the 'applied Oulipo' (whose status is but ill-defined).
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> ... In fact there even exists a tendency, which might be qualified as *ultra*,
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> for which *every* text deduced from a constraint must be classed in the

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[169] Ibid., p.262.

[170] Bénabou, 'Rule and Constraint,' p.46.

'applied' domain, the only admissible text, for the Oulipian method being

the text that formulates the constraint and, in so doing, exhausts it. This,

it seems to me, is to omit the deductive aspect of the method.[171]

Admittedly this may seem a perverse way to interpret writing, but it is crucial to the Oulipian constraint qua constraint. The repetition of the constraint tends towards convention, towards tradition—whatever other critical interpretation can be made of that, it is simply the case that what designates the status of constraint has been eroded.

In critical terms, the parallel 'logic' introduced in the method as a deductive procedure of composition is interesting as long as it is potential. That is, the tension that is present in the mismatch of deductive and 'creative' processes comes to an end with the completion of the work. It is of course also the case that this tension could not emerge without working through towards a work. Important here is the fact that constraint, however, is not a means: as Roubaud states, 'constraint is a principle, not a means.'[172] I take the means here to be in relation to an end constituted by the literary work, that is, by specifically literary intentions, which is of course beyond the principle of the Oulipian constraint itself. It does retain the demand for an instrumentality, however— 'the constraint is the problem; the text the solution', as Jouet asserts[173]— inasmuch as the logical aspect of it remains to be demonstrated by the production of a work that fulfils it. There is an interplay of instrumentality here in the Oulipian method, with the incongruity of the formal deduction and the literary direction not aligning in terms of purpose except at the point where the work is finally done, and the incongruity is resolved. Whatever tensions then pertain to the work would be the subject of a different

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[171] Roubaud, 'Mathematics in the Method of Raymond Queneau,' p.91.

[172] Ibid., p.87.

[173] Jouet, 'With (and Without) Constraints,' p.4.

kind of analysis. Of course to consider the work (process) in this way, as the object of critical reception, is also, implicitly, to consider it as a work (end). This leads to a paradox: Oulipian method is artwork and also it is not: it is, because we can draw from it the critical-interpretative response that the artwork demands; it is not because for it to retain its character as method, it cannot be a work in its own right.

Epilogue

The focus of this thesis has been an interpretation of the work of the Oulipo at a particular historical juncture, that is, a crisis of art's autonomy in the increasingly rationalised and technological social context of the 1960s. I do not claim that this is a *total* diagnosis of the Oulipo or of their methods in either the breadth of the work of their early years, or of the developments that have happened in the half-century or so since then. Nevertheless the question arises of whether the Oulipo can still be appraised in these terms. In later years, as the group itself has become better known (though still not exactly famous), and particularly as some Oulipian novels by certain of the group's members have become widely-known,[174] the reception and associations have perhaps become more actual than potential. The group is remarkably long-lived. The fact that the Oulipo has never insisted on a theoretical foundation, a dogmatic philosophical or political stance; their congenial and playful ethos; and the fact that leaving the group is forbidden (even in death)[175]—all these factors are at least partially responsible for

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[174]Perec's *A Void* and *Life a Users Manual*, Calvino's *If on a winter's night a traveller* and *Invisible Cities*, Queneau's *Exercises in Style*, Roubaud's *Great Fire of London* series, and more recently Anne Garréta's *Sphinx*, to mention only a few with identified constraints. Harry Mathews has also produced a number of well-respected novels, though he remains aloof about his methods.

[175]This in accordance with the group's unwritten constitution. For example, Levin-Becker reports that 'shortly after obituaries for Caradec began to appear in French newspapers [in 2008], the Oulipo announced that he was "definitively excused" from attendance at subsequent meetings, owing to the handicap of being deceased.' Levin Becker, *Many Subtle Channels*, pp.20–21.

the group's near sixty year life-span. At the same time, however, despite—or perhaps because of—this longevity and raised profile, it may be reasonably asked whether the group's vitality has declined since the 1970s. By this suggestion, I do not mean that the membership of the group has diminished, that they are less active, less well respected, or even less productive of literary work; rather, the question is whether the conditions that made their work distinctive, and distinctively strange, in the early years have perhaps faded somewhat. Has the *ouvroir*—the small circle of literary artisans—given way to its English namesake, a *writers' workshop* that is more pedagogical and performative than innovative or subversive?

As early as 1986, Noël Arnaud stated that 'today, the Oulipo finds itself shaken to its foundations by its very success. ... Its physiognomy is changing as pedagogy instills itself in its veins. Its personality is dissolving: it is becoming a "writers' workshop" among many other "writers' workshops."' This is doubtless a 'dangerous' situation, but Arnaud concludes—one wonders how seriously—by affirming that 'Oulipians will rise up renewed, restored to their initial vigour, all questions answered, all dramas resolved.'[176] In fact, Oulipian workshops, with a directly pedagogical function, ran from 1976 until the late eighties, when 'the demand for them became so great that what had begun as a secondary activity threatened to make major inroads on the time of the few Oulipians who regularly took part in it,'[177] but the social role was set in place. Another quarter of a century on and Oulipian technique is well-represented in the domain of practical 'creative writing'.[178] The group is also, by now, well-integrated

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[176] Arnaud, 'Prolegomena,' pp.xiv–xv.

[177] Oulipo, *Oulipo Compendium*, p.246.

[178] Aside from numerous websites offering Oulipian technique as a solution to writer's block, the University of Essex has an undergraduate module called 'Creative Writing: Oulipo and the Avant Garde', which aims 'to enable students to combine different Oulipian methods in new ways and to create similar methods of their own invention applicable to their own creative writing'. *LT359-6-FY-CO: Creative*

into the cultural establishment, in France at least, with the 'DifDePo' project funded by the French National Research Agency and a recent exhibition at the Bibliothèque nationale de France.[179] Furthermore the group has taken on a rather more performative role in wider society. Since 1996, the Oulipo has held its increasingly well-attended '*jeudis*', staged once a month to read out texts to an audience of several hundred. Daniel Levin Becker, the group's youngest member at the time of writing—and whose activities in the group appear to be primarily documentary—describes the scene:

> Normally during *jeudis* the group reads in front of a projection of what is called the *galaxie oulipienne*, an astral map of the members' faces spiralling out from the centre in rough chronological order of their recruitment. … [The readings] give the audience a reason to care, to buy a book afterwards, to put a face to the name on the spine, to rub elbows with other elegantly dishevelled *mordus*. … [The venue] is a place where new material can be tested before a sympathetic audience and where old material can be repurposed and given new valence.[180]

In the same vein, Marcel Bénabou relates that when, in 1989, he was tasked by an editor with producing a new book on the Oulipo, his intention was, rather than offering a text about Oulipian *work*, 'de donner quelque chose comme une série de

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Writing: Oulipo and the Avant Garde, `https://www1.essex.ac.uk/modules/default.aspx?coursecode=LT359&level=6&period=FY` (accessed August 20, 2019). The *Cambridge Introduction to Creative Writing* presents the Oulipo as a resource for the 'challenges of experiment'. Suggested exercises are N+7 and a model drawn from Queneau's *Exercises in Style*. David Morley, *The Cambridge Introduction to Creative Writing* (Cambridge: Cambridge University Press, 2007), pp.74–78.

[179] Alison James, 'Perec and the Politics of Constraint,' in *The Afterlives of Georges Perec*, ed. Justin Clemens and Rowan Wilken (Edinburgh: Edinburgh University Press, 2018), p.168 n.11.

[180] Levin Becker, *Many Subtle Channels*, p.27,36 Levin Becker's book acts as effective publicity for the group; it is accessible and journalistic, comprised mainly of anecdotes and vignettes of the Oulipian 'personalities'.

photos de famille, largement commentées, de l'Oulipo et de ses membres.'[181] ['*To give something like a series of generously explained family photos of the Oulipo and its members.*'] Although that particular book never came to fruition, it provided the model for a collection of personal recollections by Oulipians, finally published in 2004 as *Moments oulipiens,* which focuses on personalities, memories, stories rather than the theory or technique of Oulipism.

While the group was never overtly antagonistic to wider society, in its earlier years it maintained a semi-clandestine status that longevity and public recognition, even the recognition as '*mordus*', turns into an acceptable personality, a reproducible and familiar 'brand' in the literary landscape. There is, perhaps, to use Adorno's words, 'the danger of the dangerless' apparent here.[182] And if, taking this to an extreme, it has become the case that, as Mark Wolff puts it, 'Oulipian writing depends on who writes, not on how one writes', then it is not hard to agree with his assessment that 'the current insistence of the Oulipo on the personal qualities of the group's membership reveal the limits of their innovations within the discourses and practices of the literary field.'[183]

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[181] 'Il n'était pas question pour moi, bien entendu, de reprendre une fois de plus le discours sur les vertus libératrices de "l'écriture sous contrainte", dont l'Ouvroir de Littérature Potentielle s'est fait le chantre opiniâtre et que certains oulipiens, comme Queneau, Perec ou Calvino, ont magistralement illustrées. Il me fallait explorer un autre terrain. J'avais donc proposé pour cet ouvrage le titre *Portraits oulipiens*: mon intention était de donner quelque chose comme une série de photos de famille, largement commentées, de l'Oulipo et de ses membres.' Marcel Bénabou, 'Foreword,' in *Moments Oulipiens* (Bordeaux: Le Castor Astral, 2004), p.7. ['*It was, of course, out of the question for me to take up the discussion, once again, of the liberating virtues of "constrained writing", of which the Oulipo has been the dogged apologist and that certain Oulipians, like Queneau, Perec or Calvino, have magnificently illustrated. I had to explore another territory. I had thus proposed for this work the title* Oulipian Portraits*: my intention was to give something like a series of generously explained family photos of the Oulipo and its members.*']

[182] 'Where art turns into decorative art, or where what I have called the 'danger of the dangerless' holds sway—where alienation from the concrete world becomes a wallpaper pattern.' Adorno, *Aesthetics: 1958/59*, p.152.

[183] While I agree that there are questions here regarding the contemporary Oulipo, I disagree with Wolff's appraisal of the early Oulipo; specifically the contention that they were characterised primarily by an attempt at scientific reproducibility in literary production: 'a new function for texts, one that

What Wolff identifies here is that there is a risk that the focus on personalities has taken over from the rigour of methodical innovation as that which defines the Oulipo. There are two results of this: on the one hand, an increasing vagueness about what constitutes potential literature; on the other, a willingness to accept devices that have *become* conventional according to an Oulipian *type* as still 'experimental'. Some recent defences of the Oulipo do little to counter these risks. Peter Consenstein, for example, offers an affirmation of the Oulipo inasmuch as he offers an affirmation of literature: 'literature changes. Art changes. The Oulipo facilitates those changes. It ends when literature ends, which may mean never.'[184] A similar avowal of the near-eternality of the Oulipo, bolstered this time by recourse to evolutionary theory, is offered by Marc Lapprand.[185] The volume in which these essays appear also contains several new pieces of constrained writing, and it is striking that perennial favourites such as the lipogram, N+7 (in the book's introduction they are described as 'provocative') and *beau présent* are wheeled out, all of which by now could well be described as Oulipian standards.[186]

The problem of *convention*, in fact, starts to approach the heart of the issue here. If, as I have argued, the critical value of the Oulipian approach lies predominantly in the peculiarity of the method—the introduction of alien and formal material (particularly, mathematical material) to literature—and that this is *definitive* of the critical

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emphasised the reproducibility of structure,' with its concomitant tendency towards 'anonymous and autonomous' textual production; or with the idea that there is much ground for linking the Oulipo with N. Katherine Hayles's 'posthumanism'. Mark Wolff, 'Rules of the Oulipian Game: Authorship and Posthuman Literature,' *Contemporary French and Francophone Studies* 11, no. 1 (2007): pp.113–4,117.

[184]Consenstein, 'Forever Never Ends,' p.190 The assertion is made in response to the pessimistic but rather flimsy book *The End of Oulipo?* Elkin and Esposito, *The End of Oulipo?*

[185]Marc Lapprand, 'Oulipo Forever,' in *Verbivoracious Festschrift Volume Six: The Oulipo*, ed. G. N. Forester and M. J. Nicholls (Singapore: Verbivoracious Press, 2017).

[186]Forester and Nicholls, *Verbivoracious Festschrift Volume Six*. More recent N+7s are to be found in Wertheim and Viegener, *The Noulipian Analects*. A *beau présent* is a form of reverse-lipogram, in which only the letters of a given name may be used for composition.

or modernist sense of constraint that is at stake here, then the becoming conventional of constraint is the *end* of constraint in that sense (though not necessarily in every sense). This is not to say that there is no interest in these becoming-conventional devices (nor that there necessarily *is*), but only that the criticality of such devices with regard to a crisis of modernism—acute, as Adorno identified it, in the period of the Oulipo's emergence—is one that cannot perpetually retain its valency over the course of changes in society, in literature and in art. The 'problems' of the Oulipo's public acceptance and broader institutionalisation are only the wide-scale manifestation of the same general movement of conventionalisation. Again, this is not to imply that the Oulipo more broadly are necessarily beyond the possibility of any critical appraisal. That their devices, their activities and their public presence may have value or interest and indeed that they may be progressing towards different interpretative possibilities is not precluded (although the assertions of 'eternality' tell us very little about what these may be); only that the critical situation in the form at least that I have proposed appears no longer viable. This, in the most general terms, is really only to consider the Oulipo's work under the principle that every *critical* context is necessarily historical.

In fact, a risk of conventionalisation was likely inherent in the Oulipian project from the start, not just in the shifting boundary between convention and constraint over time, but in the definitive boundary between constraint and its *other*—that is, what is *not* constrained in literary process.[187] This need not apply only to a narrow concept of constraint: any formal intervention in the Oulipian mode needs not to be *total*, for two reasons. First, it would constitute a total determination of the text in

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[187]For an extensive analysis of the field of norms, rules and constraints in writing, see Bernardo Schiavetta and Jan Baetens, 'Définir la contrainte?' *Formules: revue des littératures à contraintes*, no. 4 (April 2000).

advance—notionally speaking, since this is presented here as a logical rather than prac-tical possibility—and thus the *mechanical automatism* that the Oulipo caution against. Second, the *unconstrained* here needs to retain some accepted form to be recognisable as a medium of constraint: genre-bound narrative forms, certain poetic conventions, norms of grammar and semantic coherence. Without this, what is left is simply a proce-dure: take for example the quasi-lipogram or perhaps quasi-*slenderising* operation[188] presented by Julianna Spahr and Stephanie Young at the *noulipo* conference in 2005 in which the removal of the letter 'r' from the text is simply a mechanical operation that demands no work of integration (resulting in this case in a text comprising many non-words, or perhaps near-words) and the critical significance of this—whatever its value—thus needs to be detected in the significative gestures of something done to language and its results, lying just *beyond* the margin of standard language (one com-mentator writes: 'it almost sounded like Elmer Fudd Speak') rather than in the process of linguistic construction itself.[189]

It seems plausible then that there was a certain *inevitable* conservatism in the Oulipo, and the counterposition of the strange and the non-strange, the excessive and the expected, from the outset. As Christelle Reggiani notes, 'la contrainte est une rhétorique de l'invention sentie comme puissante précisément parce qu'elle dépasse l'attente culturelle définie par la règle.'[190] ['*The constraint is a rhetoric of invention whose power is felt precisely because it exceeds the cultural expectation defined by the*

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[188]See Oulipo, *Oulipo Compendium*, p.228.

[189]Julianna Spahr and Stephanie Young, '"& and" and foulipo,' in *The Noulipian Analects*, ed. Chris-tine Wertheim and Matias Viegener (Los Angeles: Les Figues Press, 2007). The response is from Joseph Mosconi, 'Politics of Constraint: The Panel,' in *The Noulipian Analects*, ed. Christine Wertheim and Matias Viegener (Los Angeles: Les Figues Press, 2007), p.167.

[190]Christelle Reggiani, 'Contrainte et littérarité,' *Formules: revue des littératures à contraintes*, no. 4 (April 2000): p.15.

rule.'] It follows that constraint is distinctive for as long as it resists becoming conventional itself. This is not to say that constraint simply becomes *convention*, which would be to ignore certain formal differences of these two concepts,[191] but that the use of the constraint can itself become *conventional* where it is widely accepted. If this happens, it may still be interesting or even, in some sense, useful (for creative writing workshops, say), but it does not have the critical interest that I have described in the previous chapter. That is, *it does not refract the arbitrary methodical application of external rule as a social critique.* This is despite the fact that conventional constraint still retains some characteristic of constraint: as Chris Andrews notes, prescriptive rules of composition are not the same as empirical regularities, but Andrews's direct mapping of constraint–convention onto rule–regularity is rather too neat.[192] The wider point is that where the interruptive perversity of constraint, its arbitrariness, is lost, something different is at work. This is why pieces with *motivated* constraints are less critically acute. It is also the reason that more recent criticisms of the Oulipo for not realising the political potential of constraint are generally wide of the mark: there are of course significant grounds for critical interpretation of the Oulipo with regard to the socio-historical condition of their emergence—as I have attempted here—but it is not a question of manifest content or 'committed' literature.[193]

Other legacies of the Oulipo can be found in their influence on other non-affiliated writers, artists or movements. A number of contemporary writers, associated with the

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[191] See Chris Andrews, 'Constraint and Convention: The Formalism of the Oulipo,' *Neophilologus* 87, no. 2 (2003): 223–232.

[192] 'Once we have distinguished the empirical regularities of language and genre from the prescriptive rules that are sometimes useful in explanation and teaching, it becomes clear that the constraint, as it is used by Oulipo, closely resembles a prescriptive rule, while the generic convention is a regularity.' Ibid., p.227.

[193] See for example the papers on politics and gender in Wertheim and Viegener, *The Noulipian Analects*.

terms *conceptual* or *uncreative writing* and the web archive *UbuWeb*, cite the Oulipo as influential on their work but are similarly critical of their apparent a-politicalness and conservatism. Christian Bök for example (who has produced tightly-constrained univocalic texts and a genetically encodable poem[194]) asserts that 'even though the wacky rules of Oulipo might imply a freedom from such conventional storytelling, the content of such restricted literature often seems skewed towards normality.'[195] Similarly, an affiliate of Bök and perhaps the most prominent member of the movement, Kenneth Goldsmith, has accused the Oulipo of having 'embraced a blandly conservative narrative fiction which seems to bury the very interesting procedures that went into creating the works.'[196]

These writers thus consider their own practice as a proper continuation and extension of Oulipian principles in ways that are—in their conception—more radical, more responsive to contemporary themes and more overtly politicised. Bök writes: 'UbuWeb goes on to accentuate [the] affinities between the idea of the "constraint" in poetic writing and the idea of the "conceptual" in visual artwork.'[197] Bök considers Oulipian constrained writing then as one of four 'limit cases' of writing which interest the conceptual writers: 1. the unoriginal text (readymade); 2. the constrained text

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[194]Each of the chapters of Bök's 2001 *Eunoia* consists of a text using a single vowel. His *Xenotext* project proposes a poem that can be encoded into a DNA sequence which in turn synthesises a 'response' poem. Bök makes the (dubious) claim that this provides a 'near-permanent storage of the poem.' Christian Bök, *The Xenotext: Book 1* (Toronto: Coach House Books, 2015), p.150. (One rather scathing commentator points out that the poem 'will not be "read" unless a lengthy and durable Rosetta Stone also survives that reveals how to read the code.' A. M. Juster, *The Immortal Poetry Experiment*, `https://www.c2cjournal.ca/2016/07/the-immortal-poetry-experiment/` (accessed August 20, 2019).)

[195]Christian Bök, 'UbuWeb and Intentional Freedom,' in *The Noulipian Analects*, ed. Christine Wertheim and Matias Viegener (Los Angeles: Les Figues Press, 2007), p.222.

[196]Goldsmith, *Interview*.

[197]Christian Bök, 'UbuWeb, The Conceptualists and,' in *The Noulipian Analects*, ed. Christine Wertheim and Matias Viegener (Los Angeles: Les Figues Press, 2007), p.220.

(mannerist); 3. the unreadable text (illegible); 4. the authorless text (aleatoric).[198] Goldsmith similarly aligns the Oulipo with a form of conceptualism which he considers their most interesting aspect: 'while I like the idea of "potential literature," it strikes me that their output should have remained conceptual—a mapping, so to speak; judging by the works that have been realised, they might be better left as ideas.'[199] The trouble with these associations is that they are a false conflation: the Oulipo's work was not a variety of conceptual art.

Conceptual writing proposes the same relation in writing that the conceptualism of the 1960s had towards developments in the visual arts, thus willingly adopting Brion Gysin's claim in 1959 that writing was fifty years behind painting—'he might still be right', states Goldsmith.[200] The justification for this, it is stated, is that text and the production of text have undergone a radical shift in the last generation or so, specifically regarding digital technologies that allow easy duplication and distribution and a huge base of potential text-producers, both human and machine. Goldsmith states:

> What we're dealing with here is a basic change in the operating system
> of how we write at the root level. The results might not look different,
> and they might not feel different, but the underlying ethos and modes of
> writing have been permanently changed.[201]

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[198] This schema was presented at a 'Masterclass' given by Bök at the University of Westminster, 23 May, 2016.

[199] Goldsmith, *Interview*.

[200] Kenneth Goldsmith, *Uncreative Writing: Managing Language in the Digital Age* (New York: Columbia University Press, 2011), p.13.

[201] Kenneth Goldsmith, 'Why Conceptual Writing? Why Now?' In *Against Expression: An Anthology of Conceptual Writing*, ed. Craig Dworkin and Kenneth Goldsmith (Evanston: Northwestern University Press, 2011), p.xxi.

In this sense, for Goldsmith, writing is undergoing revolutionary change just as art did (though in different ways) over the course of the nineteenth and twentieth centuries. Undoubtedly our era is seeing shifts in the way that text is produced and in the transmissibility of huge quantities of data. What art forms do to respond to these circumstances is thus an interesting question. What space *literature* makes here has been, to date, however, perhaps more of a staking of territory in art discourse than any continuation of something specifically literary.

An extended investigation of conceptual writing itself is not my main concern. Nonetheless, it is worth pointing out that conceptual writing's attempt to recuperate a supposedly radicalised Oulipism by recourse to its 'conceptual' (art) aspect, risks missing the more distinctive *work* of Oulipian practice. This is perhaps clearest in the conceptual writers' attempt to oppose *expression* or at least what they see as the literary establishment's ideal of the writer as the authentic subject of literature (hence the designation of 'uncreative writing', and the title of their anthology *Against Expression*). Dworkin asks, for example, 'what would a non-expressive poetry look like? A poetry of intellect rather than emotion? One in which the substitutions at the heart of metaphor and image were replaced by the direct presentation of language itself, with "spontaneous overflow" supplanted by meticulous procedure and exhaustively logical process?'[202] The question is of course (perhaps provocatively) crude in the lack of mediation in its terms—as Adorno says, 'both aspects [the formal and the expressive] have become inextricably mediated by each other. ... Expression is a phenomenon of interference, a function of technical procedures no less than it is mimetic.'[203] But similarly

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[202]Craig Dworkin, *Introduction to the UbuWeb Anthology of Conceptual Writing*, http://www.ubuweb.com/concept/ (accessed August 20, 2019).

[203]Adorno, *Aesthetic Theory*, p.156.

the Oulipian project, in its most interesting critical aspects, is not about the suppression of expression, but about a *working* of formal materials. It is of course not wholly unrealistic to see certain resonances of Oulipian practice in conceptual writing, particularly, as James Kurt asserts, in the early years where the use of restrictive devices to produce texts was not quite the definitive characteristic of Oulipian practice that it tends to be now.[204] While it is true that the early Oulipo did not focus on the idea of constraint in quite the productive sense that the term later came to take on—specifically in what Roubaud calls its 'Perecquian' period[205]—and works like Queneau's *CMMP*, or the S+7 method in themselves come closer to this model of textual reordering, Kurt's assimilation underplays the characteristic peculiarity of the introduction of mathematics to literature, as itself a 'modernist' development in a broadly Adornian sense. For even if the concept of constraint itself is variable across the group's development, it remains the case that the mathematical 'translation' introduced something formally oppositional and new to the literary palette. That this demanded work means that it was never simply the *idea*. Even in the *CMMP*—in many ways not a typical Oulipian work since the focus in it is the work itself and it is less clearly a work arising from mathematical interventions—its value is not simply in its idea. This is evident from the discussions the group have, in their early meetings, of ways in which the CMMP can be used, processed or worked with.[206] In this sense, in fact, the CMMP itself becomes more like material for literary composition.

Sol LeWitt asserts that 'ideas alone can be works of art; they are in a chain of development that may eventually find some form. All ideas need not be made physi-

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[204] James Kurt, 'The Beginning of Oulipo? An Attempt to Rediscover a Movement,' *Textual Practice* 29, no. 5 (2015): 885–903.

[205] Roubaud, 'Perecquian OULIPO.'

[206] Bens, *Genèse de L'Oulipo*.

cal.'[207] The statement is paradigmatic of sixties conceptualism: the initial concept of the work (or, in LeWitt's outline, the ideas that are its components) is all that is of artistic value. The physical working through of these ideas is of no consequence and merely follows mechanically—indeed, as LeWitt also states, 'the idea becomes a machine that makes the art.'[208] That is, all that is important in an artwork is contained in its concept. Inasmuch as the Oulipo concern themselves with *potential* literature, it is perhaps easy to see why an assimilation would be made with conceptualism. But where the similarity extends to the work as such not being the focal point of Oulipian interest, it is simply not the case that everything that is of value is in an initial idea. It is in any case arguable, that in LeWitt's work, as opposed to his *statements* about his work—consider the physicality (and indeed the labour in the production) of his wall-drawings—this isolation of the 'idea' from the execution is not really sustainable. Unlike, say, LeWitt's instructions, the constraint is not (or does not purport to be) programmatic; it is instead a component of artistic material. As I described in chapter 4, the point where critical valency is most discoverable is the craft-like working with these initial conditions—call some part of it 'idea' if you will. The idea is not the work. The work is the work; even if, critically, the process of the work is the more interesting part it still requires *work* and *a work*. It thus follows also that the alignment, made by Dworkin and others, of Oulipism with conceptual writing's attempt to refuse 'expression' is misguided. All the complex mediations of material and technique are in place with the Oulipian work process. (In any case, the idea that LeWitt represents a desubjectivised artistic production is misleading since in this case, as Peter Osborne

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[207] Sol LeWitt, 'Sentences on Conceptual Art,' in *Theories and Documents of Contemporary Art: A Sourcebook of Artists' Writings*, ed. Kristine Stiles and Peter Selz (Berkeley: University of California Press, 1996), p.827.

[208] Sol LeWitt, 'Paragraphs on Conceptual Art,' *Artforum* 5, no. 10 (June 1967): p.80.

observes, 'the productive infinity of the subject has merely been withdrawn from the realisation of the work back into its *idea*.'[209])

Is the Oulipo still critically viable? The question perhaps cannot be answered so generally. The answer would depend on the terms in which it was appraised. What can be said, however, is that the historical situation in which the Oulipo emerged is just that, historical. Certainly *if* it is the case, then, that the Oulipo are now merely repeating the same set of gestures, this would appear to have limited capacity for critical engagement over a longer period. This constitutes the danger that the group has fallen into stasis, has itself become conventional. It has not been my intention in the preceding to offer a closed or total description of the Oulipo, only a critical interpretation which necessarily focuses in on limited aspects connected to its original conditions of emergence, and to its complex relations with other more or less contemporary developments in French modernist culture, including Surrealism and structuralism as well as Bourbaki in mathematics. Nevertheless, in the terms of this thesis at least, even if it may still be useful to address the tensions of freedom and constraint, literature and science, tradition and the new, the critical moment of the Oulipo has likely passed. This is not to say that the Oulipo has failed, only that, like any critical artistic response, they have a historical specificity. Adorno writes: 'once the new principles of construction have crystallised out, they entail total and pure consequentiality.'[210] It is arguable that this consequentiality is, in the case of the Oulipo, directly connected to their effective homogenisation in the cultural establishment. Where at one stage there could be found a tension in the crossing of incongruous domains in their methods, this now appears to be more like an acceptable eccentricity. Any remaining critical interest, therefore,

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[209] Osborne, *Anywhere or Not At All*, p.66.
[210] Adorno, 'Vers une musique informelle,' p.275.

would need to be broached in terms different to those I have set out here.

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