

COGNITIVE RATIONALITY AND INDETERMINISM IN THE CONTEMPORARY
DETECTIVE NOVEL, WITH SPECIAL REFERENCE TO THE WORK OF UMBERTO
ECO, CARLO EMILIO GADDA AND STANISLAW LEM

by

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submitted in accordance with the requirements
for the degree of

DOCTOR LITTERARUM ET PHILOSOPHIAE

in the subject

THEORY OF LITERATURE

at the

UNIVERSITY OF SOUTH AFRICA

PROMOTOR: PROF R C GRÄBE

JUNE 1994

ABSTRACT

Cognitive Rationality and Indeterminism in the Contemporary Detective Novel, with Special Reference to the Work of Umberto Eco, Carlo Emilio Gadda and Stanislaw Lem

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Theory of Literature

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The study examines cognitive rationality as tool for problemsolving within the context of a movement from determinism and monolithic universal Reason towards indeterminism and plurality. It is contended that theories of literature do not provide an adequate conceptual framework, and therefore, extensive use is made of pluralist fallibilism (Popper, Helmut Spinner) and chaos theory. The philosophy of Friedrich Nietzsche is viewed as a decisive influence in the shift towards plurality and scepticism. In chapter 2, Conan Doyle's Sherlock Holmes stories, a novel by Agatha Christie and Gaston Leroux's *Le mystère de la chambre jaune* are discussed as examples of optimistic rationalism. Chapter 3 indicates that Eco's *Il nome della rosa* emphasizes the conjectural nature of truth and objective knowledge, underpinned by a 'soft' rationalism which amounts to monopolistic pluralism. Chapter 4 analyses the defeat of cognitive rationality by the complex interaction of a multiplicity of independent causal series. The detectives' relationship with the feminine exemplifies the interpenetration of rationality and the instinctual, while the mystery of the feminine is a metaphor for impenetrable complexity. Chapter 5 shows that hypotheses concerning random complex systems remain inconclusive. However, as the trajectory of a complex system can be regulated, so reason can be viewed as the underlying regulative pattern (strange attractor) for an infinite proliferation of hypotheses. Thus, despite shifting conceptions of rationality and order, all the detectives in the study accept objective truth as regulative principle and are involved in a search for objective knowledge.

Keywords: rationality; plurality; chaos theory; fallibilism; Sherlock Holmes; Umberto Eco; Carlo Emilio Gadda; Stanislaw Lem; detective novel; indeterminism; randomness.

PREFACE

In order to facilitate reading the text, translations of short quotations in languages other than English are supplied in square brackets. Translations of substantial quotations appear in the Appendix. Unless a specific source is indicated, the translations are my own.

Quotations from literary texts are in English where possible. In the case of Eco's *Il nome della rosa*, I mainly worked with the Italian original, and therefore, page numbers of both the original version and the translation are given. With respect to *Quer pasticciaccio brutto de via Merulana*, Gadda's extensive use of dialect prompted a decision to follow the way of least resistance: I worked with the translation and only occasionally consulted the original. Regrettably, I am unable to read Lem in the original Polish.

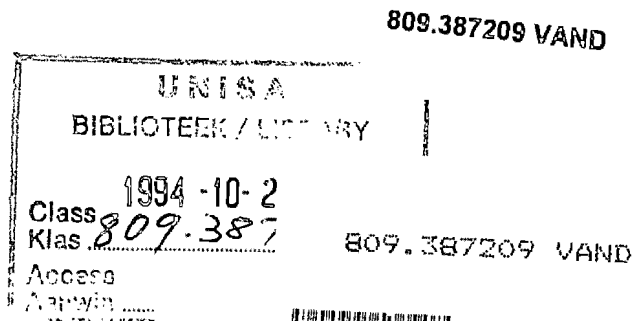
It goes without saying that my own translations are simply meant to give the reader an accurate idea of the contents of quotations. The translations are literal and probably quite inelegant.

VOORWOORD

'n Proefskrif is die produk van 'n verskeidenheid faktore. My ouers, dr en mev G P L van der Linde het 'n bevoorregte omgewing daargestel waarsónder alles anders sou verloop het. Prof Peter Haffter, afgetrede hoof van die Departement Romaanse Tale by Unisa het (onwetend) my belangstelling geprikkel in literêre teorieë, en my die waarde geleer van 'n sekere akademiese onverbidlikheid. My kollegas was altyd bereid om in te staan gedurende tydperke van afwesigheid met studieverlof. Baie dankie aan my promotor, Prof Ina Gräbe vir haar simpatieke en skerpsinnige leiding.

'n Boek kom nie klaar sonder doelbewuste selfsug nie. My vrou, Rianie, en seuns, Leonhard en Waldo het dit nie altyd maklik gehad nie. Sonder hulle liefde en bystand sou die hele onderneming veel moeiliker gewees het.

Laastens, die besef dat dit alles genade is, nie verdienste nie.



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CONTENTS

INTRODUCTION.....	1
CHAPTER 1: Indeterminism and plurality.....	8
CHAPTER 2: A world shaped in the image of reason.....	34
CHAPTER 3: Reasonableness and conjectural knowledge.....	53
CHAPTER 4: In the labyrinth: multidetermination.....	66
CHAPTER 5: In the labyrinth: random complexity.....	94
CHAPTER 6: By way of conclusion.....	132
SOURCES CONSULTED.....	136
APPENDIX: Translations.....	145

INTRODUCTION

0.1 This study examines the detective story and detective novel as a vehicle for the fictionalisation of topics related to the question of rationality. The analysis is concerned primarily with cognitive rationality, that is, rationality as a tool for problemsolving and instrument for knowledge and understanding (cf Spinner 1987:29-30). Such a delimitation naturally presents itself, as the solution to a problem or the clarification of an enigma is the central aspect in any detective novel.

Underlying this is the assumption that the world can be known and understood through rational analysis. Analysis is rational in so far as it is grounded in coherent and consistent argumentation or objectively verifiable data, or if it can be tested and corroborated or refuted (cf Schnädelbach 1987:67-73).

In the chapter on Holmes and his successors, it is demonstrated that rationality in the traditional detective novel is grounded in clear and certain perception (cf Schnädelbach 1987:71). Reason is assumed to be stable and homogeneous. The natural order of phenomena is assumed to correspond to the structures of reason. Therefore, it can be represented faithfully through a transparent discourse generated by rational analysis. A deterministic-mechanistic view of the world (cf Pannenberg 1977:2-5), coupled with the idea of totalizing Reason results in the view of reality as a closed, coherent system. Against this background, the detective's inferences do not construct, but merely uncover the inherent order of the world (cf Gargani 1979:12). Despite the empirical basis of Holmes's conjectures and the *ad hoc* nature of his explanations, his approach is in agreement with Hegel's dogmatic affirmation of an all-embracing *Vernunft*: '*Was vernünftig ist, das ist wirklich; und was wirklich ist, das ist vernünftig*' (Hegel 1956:14) ['What is rational, is real, and what is real, is rational'.]

The optimistic perspective on cognitive rationality is maintained in the chapter on *Il nome della rosa*. Eco's detective acknowledges that ultimate truth is unattainable and that knowledge, being the result of interpretation, is conjectural, not certain (cf Popper 1979:9). He professes a pluralist tolerance and implicitly rejects the idea of reason as one and absolute, without radically questioning the possibility of knowledge and understanding through rational analysis.

The chapters on Gadda and Lem offer a bleaker outlook. Gadda's *Pasticciaccio* suggests that the objective presence of causal relationships can be accepted as a premise for analysis. However, any event or action is determined by such a multiplicity of causes, some remote and insignificant or

indirect, that the actual causal relationships can only be hypothesized, never fully clarified or conclusively verified. The detective in Gadda's text formulates possibilities, but fails to find decisive corroborating evidence.

In principle, Gadda's text is in agreement with Leibniz's statement that, 'nihil est sine ratione seu nullus effectus sine causa', which Heidegger translates as 'Nichts ist ohne Grund oder keine Wirkung ohne Ursache' (Heidegger 1958:43). ['nothing is without a foundation and there is no effect without a cause'] Heidegger calls this the 'Satz vom Grund', and notes:

der Satz enthält keine bloße Feststellung, er
 spreche auch eine Regel aus, die Ausnahmen zulässt.
 Der Satz sagt etwas, was sich notwendig so verhält,
 wie es sich verhält. Jedes und alles Seiende hat
 notwendig einen Grund (Heidegger 1958:20).

According to Heidegger, the 'Satz vom Grund ist der Grundsatz aller Grundsätze' (Heidegger 1958:21). [it is 'the fundamental proposition of all fundamental propositions'] In the philosophy of Kant, 'Vernunft heisst und ist ratio, d.h. Vermögen der Grundsätze, d.h. des Grundes. Die Vernunft ist der gründende Grund' (Heidegger 1958:131). ['reason is called and is ratio, that is, the ability to state axioms, to establish the foundation. Reason is the foundation which establishes a foundation'] For Kant, the term *ratio* is to be used 'in dem Doppelsin ein Vernunft und Grund' (Heidegger 1958:131)['both in the sense of reason and foundation'], while reason (*Vernunft*) is

als Vermögen der Grundsätze allgemein das Vermögen,
 etwas als etwas vorzustellen. Das "ich stelle etwas
 als etwas vor mich" ist die strengere Fassung des
 ego cogito des Descartes, das "ich denke"
 (Heidegger 1958:132).

In other words, any given event is grounded in that it is not accidental, but can be justified and analysed in terms of causality. Such an analysis would be grounded to the extent that it is a faithful representation of objective phenomena, generated by reason. The accurate representation of the causal relationships between phenomena is grounded in the *ego cogitans*.

In principle, the only modification to Leibniz's statement implicit to the *Pasticciaccio* is that *ratio* is changed to the plural: 'nothing which is, is without grounds and no effect is without causes'. The effect of this modification is a problematization of *Grund*, in that a clearcut description of events in terms of direct linear causality becomes virtually impossible, and the truthfulness of the conjectures generated through rational analysis cannot be determined: in other words, reason does

not provide a basis for certain knowledge and faithful representation.

The two texts by Lem are shown to imply a radical subversion of *Begründung*. It is suggested that the internal coherence and consistency of argumentation do not provide a guarantee for truthfulness, but can be a purely formal property. Hypotheses are generated through a meticulous analysis of the available data, yet this does not result in an understanding of events. The more or less plausible explanations in *The investigation* remain mere conjectures, impossible to corroborate. Most importantly, the solution in *Chain of chance* is the result of a random combination of actions and events, not of rational analysis. This implies that what is described as 'truth' and 'order' is in fact dependent on probability and generated by random combinations which create a semblance of orderliness. Therefore, 'truth' and 'order' are not fixed entities, though the probability of their occurrences could be approximately calculated. They are only consistent insofar as it is likely that the same coincidence of random elements would be repeated.

Without degenerating into irrationalism, Lem's texts demolish the notion of deterministic order and the naive faith in reason as instrument of knowledge and understanding. The solution offered in *The investigation* cannot be empirically corroborated; the one in *Chain of chance* is the result of a 'random causality' (Lem 1978:126, 179), which does not constitute a *Grund*, as randomness itself cannot be verified (cf Pagels 1983:106-107).

All the texts discussed are somehow concerned with cognitive rationality. The various investigations are rational in that each involves the analysis of objective data, the formulation and testing of hypotheses, and the identification and testing of evidence. Yet, there is a vast difference between the Holmes narratives, in which reason is supposed to be all-embracing, stable and homogeneous, and the texts by Eco, Gadda and Lem, which implicitly agree with the view of rationality as an open concept and the statement 'dass es keine Explikation von "Rationalität" für alle Kontexte geben kann' (Schnädelbach 1987:81-82) ['that there is no definition for rationality which would be valid for all contexts']. The dissolution of a monolithic universal Reason is the first line traced in the present study.

The second line is the increasing problematization of rationality as the foundation for knowledge, objective truth and understanding. Its status remains uncontested in the Holmes narratives, is problematized by the pluralist indeterminacy of Gadda and Eco, and violently eroded by Lem.

The third line, parallel to the others, is the modification and subversion of the detective novel framework. This is touched upon in the various text analyses, but not discussed in detail; the 'deconstruction' of the detective novel as narrative structure by Eco, Gadda Lem and others

warrants a separate study. With regard to this aspect, the present study merely aims to show that indeterministic realities produce particular shifts in rationality and a concomitant transgression of certain narrative conventions.

0.2 Analytical method

The primary aim of each text analysis is to reconstruct the 'argument' advanced either implicitly or explicitly by the text concerning the problem of cognitive rationality within indeterministic contexts. The theoretical framework for this is supplied mainly by the critical rationalism of Popper (1974, 1979, 1989) and Lakatos (1978), the possibilist pluralism of Naess (1972), and Spinner's fallibilist pluralism (1974, 1987), as well as the basic concepts of chaos theory.

A further aim is to clarify the way in which rationality and hypotheses are 'framed' in each text. Especially relevant in this regard are aspects such as the attributes of the detective, narratorial bias and comments, comments made by various characters, and the relative status of hypotheses as indicated by all these elements and by the outcome of each hypothesis, that is, whether it is refuted or corroborated, whether it leads to a solution and so on. Also relevant is the nature of the evidence introduced to support a hypothesis; here, occasional reference is made to the law of evidence.

The critique of *Grund* advanced in some of the texts could be seen as related to the deconstructionist critique of metaphysics. It was felt, however, that the most effective theoretical framework would be provided by texts which deal explicitly with knowledge, rationality and indeterministic systems. Moreover, to the extent that each of the texts discussed advances a certain philosophical argument or programme, it is done coherently and consistently, while each 'programme' implies its own critique of the others. As a result, the deconstruction of any or each of the programmes was considered superfluous. In any case, within the context of possibilist pluralism (cf Naess 1972:75-78, 92-94), deconstruction is but one of many possible approaches, with no claim to universal applicability or validity.

0.3 Choice of texts

Only texts which contain the basic elements of the detective novel were considered for discussion, namely, a crime, a detective, and an investigation through which clues and possible causal factors are identified. Thus, a fairly narrow focus was preferred to Tani's concept of the 'anti-detective

novel', which extends the scope of the term even to include certain metatextual narratives, such as Calvino's *Se una notte d'inverno un viaggiatore*. As used by Tani, the term covers both texts which contain some generic process of detection and texts which more or less respect the conventions of the detective novel (cf Tani 1984:41-45). Tani's study proposes a typology of the 'anti-detective novel'; our concern is entirely different.

Mulder (1989) uses the term to denote texts in which rational analysis and closure are subverted. This definition only covers the texts analysed in chapters 4 and 5, and, to a certain extent, Eco's *Nome della rosa*. It is therefore not generally useful for our purposes.

In addition, preference was given to texts in which the method of investigation and/or the detective's findings are commented upon, for example, by the narrator or the detective himself. Such comments provide valuable clues to the 'arguments' advanced in each text, to the conceptions of rationality proposed, and to the relative status of hypotheses. Unfortunately, many - perhaps even most - traditional detective novels are very parsimonious in this regard; the comments introduced are quite negligible.

It was also considered desirable that the texts discussed manifest a certain awareness of the problem of cognitive rationality. In other words, it was required that it be possible to integrate each text into the 'programme' of the study without forcing or violating it. Again, most traditional detective novels examined were not found to be particularly useful, by contrast to the self-conscious reasoning in the texts by Eco, Gadda and Lem and Holmes's explicit propagation of a particular 'philosophy' of detection.

Furthermore, the texts discussed had to be representative. A text was accepted as representative on the grounds of its status as a classic, or if it could be viewed as a typical specimen of the detective novel subgenre. The texts discussed in chapter 2 were selected for these reasons. Eco's *Il nome della rosa* deserved inclusion on account of its phenomenal popularity, self-conscious use of literary conventions and elaboration of a definite argument. It has also been linked by Eco himself to the contemporary debate on the 'crisis of reason' (Eco 1991: 244-245). The inclusion of Gadda's *Pasticciaccio* was justified by the detective's pluralist conception of causality, which ties in with the problematization of *Grund* and the question of whether indeterministic events can be understood and explained through cognitive rationality. The two texts by Lem reflect his thorough grounding in the 'hard sciences', and both contain extensive formulations of the indeterministic worldview suggested by the events narrated.

The sequence of text analyses was dictated by the lines of development referred to above (see

0.1).

0.4 Post-modernism

There was a strong temptation to use the term 'post-modern detective novel'. This could have been justified by aspects of the texts discussed, such as the use of a 'lowbrow' subgenre and of parody, the problematization of causality and so on (cf Bertens 1986a:135).

However, the explanatory power of the term seemed rather dubious. The question was, of what use would it be to classify some of the texts discussed as 'post-modern(ist)'? would it clarify their position with respect to cognitive rationality? For the informed reader, the adjective 'post-modern(ist)' may have specific connotations or create certain expectations. Yet one's use of the term would have to be justified and the term clarified through an analysis of particular textual elements. Even if that could be achieved, the question would remain, what does it 'prove', other than that the texts are indeed 'post-modern(ist)'? It could in fact be a circular problem: one would decide in advance which textual elements are to be regarded as 'post-modern(ist)'; if these could be identified and analysed in the text, then it would be considered to qualify for the appellation 'post-modern(ist). *A quoi bon?*

Nevertheless, it seemed possible to link some of these texts to a post-modernist *Weltanschauung*, on account of their rejection of totalizing rationality (cf Hassan 1987:168; Lyotard 1986:134). At a very general level, such a connection can be justified. Again, however, the label 'post-modern(ist)' as such would have little or no explanatory power. Particular topics would have to be discussed; and it was felt that the topics which are central to this study could best be discussed, not with reference to the general statements of 'post-modernist' philosophers, but to the texts by Popper and others mentioned above.

In brief, the label 'post-modern(ist)' was avoided because of its lack of precision, which is indicated (somewhat hyperbolically) by Eco:

Malauguratamente, 'post-moderno' è un termine buono à tout faire. Ho l'impressione che oggi lo si applichi a tutto ciò che piace a chi lo usa. D'altra parte sembra ci sia un tentativo di farlo slittare all'indietro: prima sembrava adattarsi ad alcuni scrittori o artisti operanti negli ultimi vent'anni, poi via via è arrivata sino a inizio secolo, poi più

indietro, e la marcia continua, tra poco la categoria del post-moderno arriverà a Omero (Eco 1986:528).

The study could, nevertheless, be linked to Lyotard's concept of the death of the master narratives (cf Lyotard 1987:39-41), in particular to the death of classical rationality as foundation for knowledge and objective truth. The 'crisis of reason' and, indeed, the question of rationality as such is a central topic in contemporary philosophy: 'Das Haupt- und Kernthema, um das sich die kontinentaleuropäische Philosophie unserer Tage bewegt, ist das Thema der Rationalität und ihrer Grenzen' (Zimmerli 1986:327). ['the key and principal theme at the heart of contemporary West European philosophy is the theme of rationality and its limits'] This 'crisis of reason' is central to the rejection of determinism in a variety of disciplines.

Chapter 1 presents an outline of those aspects of indeterminism and plurality which provided a general framework for the text analyses which follow thereafter.

CHAPTER 1

Indeterminism and plurality

1.0 Introduction

The existence of a 'crisis of reason' has been acknowledged explicitly at least since 1960, when the collective volume *La crise de la raison dans la pensée contemporaine* appeared (Breton et al 1960). It is also discussed specifically in another collective volume, *Crisi della ragione* (Gargani et al 1979), and appears in various guises throughout the ramifications of contemporary philosophy. Within this context, there is a renewal of interest in Nietzsche's philosophy: 'Ohne jeden Zweifel trifft zu, dass im Zusammenhang der erwähnten gegenwärtigen Rationalitätsdiskussion die Philosophie Friedrich Nietzsches eine Renaissance erfährt' (Zimmerli 1986:330). ['there is no doubt that, in the context of the abovementioned contemporary discussion on rationality, the philosophy of Friedrich Nietzsche has experienced a revival']

1.1 Nietzsche's 'death of God'

One of the key topics in Nietzsche's philosophy is the 'death of God': 'Gott ist tot! Gott bleibt tot! Und wir haben ihn getötet!' (Nietzsche 1965:141). ['God is dead! God remains dead! And we killed him!'] 'God' here denotes the Christian God, as well as the extra-sensory world as defined by Heidegger: the 'übersinnliche Welt der Ideale, die das über den irdischen Leben bestehende Ziel für diese Leben enthalten und es dargestellt von oben und so in gewisser Weise von aussen her bestimmten' (Heidegger 1977:220). ['the extrasensory world of ideals, which contains the otherworldly goal for the earthly life, and thus, determines it from the outside, and, in a certain sense, from above'] In this sense, the 'death of God' suggests that man can no longer give purpose and meaning to his life in terms of an ultimate truth or absolute universal *Grund*. The 'tolle Mensch' who announces the 'death of God' therefore calls out in desperation, 'Gibt es noch ein Oben und ein Unten? Irren wir nicht, wie durch ein unendliches Nichts? Haucht uns nicht der leere Raum ein?' (Nietzsche 1965:140-141). ['Is there still an above and below? Do we not stray, as through infinite nothingness? Does not empty space breathe upon us?'] (Nietzsche 1964e:168)

Nietzsche replaces the concept of truth as the faithful representation of that which is with the idea of truth as subjective, an illusion, a value judgement: 'Die Wertschätzung "ich glaube dass Das und Das so ist" als Wesen der Wahrheit' (Heidegger 1961:509). ['the value judgement "I believe that

this and that is so"'] The possibility of objective truth is denied; truth is viewed as subjective, and, therefore, necessarily relative. Thus, Nietzsche asks whether 'jene volkstümlichen Wertschätzungen und Wert-Gegensätze auf welche die Metaphysiker ihr Siegel gedrückt haben, nicht vielleicht nur Vordergrund-Schätzungen sind, nur vorläufige Perspektiven...' (Nietzsche 1964a:8). ['the popular valuations and antitheses of value upon which metaphysicians have set their seal are not perhaps merely superficial estimates, merely provisional perspectives' (Nietzsche 1964c:7)] More radically, if there is no solid and stable basis for truth, then it could become problematic to distinguish 'true' from 'false'; 'truth' could then be reduced to a more or less plausible narrative: 'Ja, was zwingt uns überhaupt zur Annahme, dass es einen wesenhaften Gegensatz von "wahr" und "falsch" gibt? Warum dürfte die Welt, die uns etwas angeht, nicht eine Fiktion sein?' (Nietzsche 1964a:46). ['Indeed, what is it that forces us in general to the supposition that there is an essential opposition of "true" and "false"? Why might not the world *which concerns us* - be a fiction?' (Nietzsche 1964c:50). Such a narrative would be arbitrary and without any claim to authority. It would be the result of interpretation, therefore inevitably partial and contingent (cf Nietzsche 1964a:30-31).

The 'death of God' is not a sudden, decisive rupture, but a process of leavetaking: 'Dies ungeheure Ereignis ist noch unterwegs und wandert - es ist noch nicht bis zu den Ohren der Menschen gedungen' (Nietzsche 1965:141). Absolute *Grund* as presence passes away in the course of time; becomes a *Gewesene* in the flow of becoming. It cannot simply be discarded, does not simply pass into oblivion; the traces of its presence, the 'Grüfte und Grabmäler Gottes' remain (Nietzsche 1965:141). ['This prodigious event is still on its way, and is travelling - it has not yet reached men's ears...the tombs and monuments of God?' (Nietzsche 1964e:169)]

In agreement with his dissolution of truth and *Grund*, Nietzsche also rejects the idea of the inherent orderliness of the world: 'Der Gesamt-Charakter der Welt ist...Chaos, nicht im Sinne der fehlenden Notwendigkeit sondern der fehlenden Ordnung' (Nietzsche 1965:127). ['The general character of the world, on the other hand, is to all eternity chaos; not by the absence of necessity, but in the sense of the absence of order' (Nietzsche 1964e:152)] The attribution of order and intentionality to the world is an arbitrary construct, an attempt to shape the world in the image of man, *Vermenschung*, that is, 'alles Hineintragen von Ordnung, Gliederung, Schönheit, Weisheit in die "Welt"' (Heidegger 1961:350). ['to integrate everything into the world as order, organization, beauty, wisdom'] According to Heidegger (1961:353), Nietzsche's idea of the world as chaos implies that it cannot be grasped and rendered transparent through language: it is 'eine abwehrende Vorstellung, der zufolge vom Seienden in Ganzen nichts ausgesagt werden kann. Das Weltganze wird so zum grundsätzlich Unansprechbaren und Unsagbaren'. ['a defensive idea, according to which nothing can be stated about that which is as a whole. The world as a whole thus becomes radically unapproachable and ineffable']

Nietzsche announces a 'neue Gattung von Philosophen', and anticipates the 'Philosophen der Zukunft', whose precursors are the 'freien Geister' their 'Herolde und Vorläufer' (Nietzsche 1964a:53-54). ['new kind of philosophers...philosophers of the future...free spirits...heralds and precursors] Such a 'philosophy of the future' would not be motivated by the will to truth, since it 'ist nicht mehr als moralisches Vorurteil dass Wahrheit mehr wert ist als Schein (...) es bestünde gar kein Leben wenn nicht auf dem Gründe perspektivistischen Schätzungen und Scheinbarkeiten' (Nietzsche 1964a:46). [nothing more than a moral prejudice that truth is worth more than semblance...there could have been no life at all except upon the basis of perspective estimates and semblances' (Nietzsche 1964c:50)] The world as it 'truly' is cannot be known, only as it appears to be; but this is of no importance, as 'truth' is not inherently superior to appearance. Objective knowledge is unattainable, only a multiplicity of subjective perspectives which do not add up to a unified whole remains.

The 'neue Gattung von Philosophen' could claim 'als Versucher bezeichnet zu werden' (Nietzsche 1964a:53). ['these philosophers of the future might rightly, perhaps also wrongly, claim to be designated as "*tempters*"' (Nietzsche 1964c:57)] Their philosophy would therefore be elusive, fragmentary, tantalizing; tentative, essayistic in the basic sense of the word *essai*, an attempt. It would be a philosophy of *spunti*, of pre-texts for further philosophizing, not of systembuilding. Thus, it would reflect the fragmentariness and opacity of the world as chaos. It would not claim any didactic purpose, in that it would neither seek to provide guiding principles for human conduct in the light of universal truths, nor explain the world to promote enlightenment and the common interest.

Instead of knowledge production and enlightenment, Nietzsche proposes the 'Verschönerung der Wissenschaft': a *Wissenschaft* which, like art and poetry, would entertain, not enlighten. It would contain 'so viel Unbestimmtheit, Unvernunft und Träumerei (...) dass man in ihr "wie in den wilden Natur" und doch ohne Mühsal und Langeweile wandeln könnte (Nietzsche 1964b: 255). ['the embellishment of science - as much indecision, irrationality, and dreaminess as will enable us to walk about in it "as in savage nature', but without trouble and boredom' (Nietzsche 1964d:312)] A 'philosophy of the future' would therefore abandon the quest for certainty and precision; would be read like a fictional narrative, without reference to its truth value. Its guiding principles would not be clarity, consistency and coherence, but playfulness and contradictoriness.

Philosophical thought Nietzsche alleges to be driven, not by reason, but by the instinctual: 'das meiste bewusste Denken eines Philosophen ist durch seinen Instinkte heimlich geführt und in bestimmte Banen gezwungen' (Nietzsche 1964a:9). ['the greater part of the conscious thinking of a philosopher is secretly influenced by his instincts, and forced into definite channels' (Nietzsche

1964c:8)] The imperialist arrogance of classical rationalism is viewed as symptomatic of the drive which develops especially in a dominant philosophy: 'sobald nur eine Philosophie anfängt, an sich selbst zu glauben', driven by a 'tyrannische Trieb', the will to power, 'Sie schafft immer die Welt nach ihrem Bilde' (Nietzsche 1964a:15). ['as soon as ever a philosophy begins to believe in itself...tyrannical impulse...it always creates the world in its own image' (Nietzsche 1964c:14)] This is exemplified by Hegel's assertion that, '*Was vernünftig ist, das ist wirklich; und was wirklich ist, das ist vernünftig*' (Hegel 1956:14).

By contrast, a Nietzschean philosopher of the future could only offer partial perspectives, possible versions of the world, the world as possibilities (cf Heidegger 1961:623). In the absence of an ultimate *Grund*, there is no universally valid reason why things should be as they are, not otherwise. Therefore, one would no longer say, 'Hier könnte, sollte oder müsste geschehen'; but, 'wenn man von irgend etwas erklärt, dass es so sei, wie es sei, dann denkt er: Nunn, es könnte warscheinlich auch anders sein' (Musil 1978:16). ['Here such and such might, should or ought to happen. And if he is told that something is the way it is, then he thinks: Well, it could probably just as easily be some other way' (Musil 1982:12)]

1.2 The erosion of Grund

The erosion of *Grund* as defined by Heidegger (see 0:1) is a central topic in contemporary philosophy: 'Il dibattito filosofico ha oggi almeno un punto di convergenza: non si dà una fondazione unica, ultima, normativa' (Vattimo & Rovatti 1979:7). ['the philosophical debate has today at least one point of convergence: there is no single, ultimate, normative foundation'] The concept of a monolithic, universal Reason which provides a solid basis for truthful representations has become unacceptable. At the same time, the analysis of phenomena in terms of causal relationships determined by fixed, objective laws is problematized. It is acknowledged that reason is not a natural given, but underpinned by a code of norms and conventions (Gargani 1979:40). In brief, there is a shift away from determinism, the pivot in the articulation between ideas such as order, causality and rationality (Morin 1988:420).

Einstein's dissolution of two of the basic concepts of classical rationalism, the absolutes of time and space is a key moment in this development. Both in Newtonian physics and in Kant's philosophy, time and space are postulated as absolute *a priori* givens, and time is assumed to be unidirectional (Gribbin 1987:13, 21-22). Einstein, however, theorized that the rate at which time elapses is influenced by gravity. The theory was corroborated experimentally in 1975 (cf Calder 1982:72).

The effect of gravity on time is illustrated dramatically by the theory of black holes. A black hole is a star which has collapsed so that all its mass is condensed into a single point. Around the black hole, a 'gravitational point of no return' forms, called the event horizon (Bartusiak 1988:65). Within the event horizon of a black hole, as light would be trapped, so time would stand still (Calder 1982:75-76). For an observer on Earth, time near a black hole would be perceived to pass extremely slowly; conversely, for an imaginary space traveller orbiting the black hole, Earth time would be perceived to pass very quickly, while for him, it would pass at the 'usual' rate (Calder 1982:148-150). Moreover, according to Einstein's theory, time passes more slowly with respect to objects travelling at high speeds than it does on Earth (Calder 1982:152-158).

Besides subverting the notion of linear, absolute time, Einstein replaced the concept of a flat, geometric space with that of 'curved' space, in which light is bent, instead of travelling in a straight line (cf Calder 1982:84-107). Curved space-time could be compared to a rubber sheet, 'indented' by large masses with strong gravitational forces (Bartusiak 1988:63). A black hole 'indents the fabric so much that space actually curves in on itself' (Bartusiak 1988:65). Any passing object or light beam will follow the natural depression caused by the indentation; therefore, in the vicinity of a black hole, light is bent and time is slowed down (Calder 1982:76, 101).

After Einstein, quantum physics further subverted the concept of a stable, predictable world by theorizing a microreality partly determined by the observer (Pagels 1983:65, 95). It proposed the view that physical reality could change according to the experimental setup used to observe it (Pagels 1983:143-145). By contrast to classical physics, in which the role of the observer was minimized, quantum physics stated that,

Die Naturwissenschaft beschreibt und erklärt die Natur
nicht einfach, so wie sie 'an sich' ist. Sie ist
vielmehr ein Teil des Wechselspiels zwischen der Natur
und uns selbst (Heisenberg 1984:66).

The indeterministic worldview implicit to quantum physics is encapsulated in Bohr's principle of complementarity and Heisenberg's uncertainty principle. Put very simply, the uncertainty principle states that the position and momentum of a particle cannot be measured simultaneously (Pagels 1983:89). The principle applies to a large number of measurements, not to individual events (Pagels 1983:90). The principle of complementarity

asserts that there exist complementary properties
of the same object of knowledge, one of which
if known will exclude knowledge of the other
(Pagels 1983:94).

An electron could, for, example, be described both as a wave and a particle, 'provided we also realize that the experimental arrangements that determine these descriptions are similarly mutually exclusive' (Pagels 1983:94). Depending on the experimental setup, it will be observed to behave, and will be described either as a wave or a particle. It can be observed at different points in time, each constituting an event; but there is no fundamental law which would enable the observer to know or predict with certainty what it does or will do when it is not being observed (Gribbin 1986:231-232).

Randomness and unpredictability are characteristic of the behaviour of subatomic particles. Generally, every time subatomic particles are involved in interactions, the outcome depends on chance' (Gribbin 1986:238). There might be a strong probability that a particular outcome will ensue, or the odds may be even, but the outcome can never be predicted with certainty.

The indeterminism outlined above does not corroborate Nietzsche's statement that, 'Der Gesamt-Charakter der Welt ist...Chaos...im Sinne...der fehlenden Ordnung' (Nietzsche 1965:127). Quantum physics deals with subatomic phenomena, therefore general statements about the macroworld cannot simply be derived from its findings. It does not deny the existence of stable systems with predictable behaviour. Even the random microreality it proposes is not equivalent to mere disorder. Heisenberg's uncertainty principle, for example, has been subjected to the severest tests, but not a single exception to it has been found; its validity is unquestionable (Schroeder 1990:113). Thus, even though it runs counter to classical determinism, it has the nature of a fundamental law.

The theories referred to also do not corroborate the idea that the world, 'das Weltgänze' cannot be grasped and rendered transparent through language (cf Heidegger 1961:353). One of the basic assumptions underlying the scientific enterprise is that the world can be known and that knowledge can be communicated. The scientist may acknowledge the ambiguity of verbal language, but uses it to make truthful statements about the objective world.

Physical indeterminism neither denies the possibility of knowledge of the world nor the existence of deterministic systems. It states that there are numerous phenomena which cannot be explained in terms of classical rationality, contexts in which the principles postulated by classical rationality do not apply. Thus, it implicitly rejects the idea of a monist, self-legitimizing Reason, and moves away from a stable, unified reality to a plurality of possible realities (cf Barbieri & Vidali 1988:9).

1.3 Plurality

It is widely accepted that the post-modern is characterized by radical plurality, that is, not plurality within a unified framework but within a diversity of possible frameworks (cf Welsch 1987:4-5). In this context, Nietzsche's 'death of God' can be viewed as denoting the dissolution of monolithic, universal Reason. A post-modernist mode of philosophizing rejects all attempts at totalization (cf Hassan 1987:168; Lyotard 1986:34; Welsch 1987:5). Accordingly, it gives rise to a 'Pluralität von Rationalitätsformen' (Welsch 1987:7), to a network of local or contingent rationalities (cf Vaca 1979:281), to the acknowledgement that rationality is an open concept, of which no universally valid definition can be formulated (Schnädelbach 1987:31-32).

Various attempts have been made to construct a typology of rationalities. Lenk, for example, enumerates and briefly defines 21 types (Lenk 1986:20-22), and indicates that the list can be extended. The two types which are directly relevant to the present study are rationality as scientific verifiability and Spinner's 'Okkasionelle Rationalität' (cf Lenk 1987:20-23).

Spinner distinguishes two main orientations, *okkasionelle Rationalität* and *prinzipielle Rationalität*, which reflect the dual nature of reason (Spinner 1987:31). The latter is equivalent to the traditional view of rationality, which postulates general, abstract, preconceived criteria for rational knowledge and perception (Spinner 1987:31-32). It is oriented according to presumed universal values and general rules (Spinner 1987:32). *Okkasionelle Rationalität*, by contrast, is not bound to universal norms, fixed principles or general rules. Context-dependent, it is constituted according to each particular situation, and aims to find a solution to each case, which is not presumed to be necessarily valid for any other, similar cases (Spinner 1987:32).

For our purposes, the view of rationality as directed towards knowledge production, problemsolving and understanding, or cognitive rationality is especially important (cf Spinner 1987:29-30, 35-36). In agreement with the dual nature of reason, it can be either contingent or grounded in general rules and universal principles.

Both contingent ('okkasionelle') and norm-bound ('prinzipielle') rationality are linked to corresponding paradigms, or, in Spinner's terminology, 'differentielle Erkenntnisstile', differentiated styles or modes of cognition (Spinner 1987:36-37). Contingent rationality is linked to an additive mode of cognition, of which the post-modern variant views reality as a conglomerate of particulars which constitute a fragmented, non-hierarchical picture of the world (Spinner 1987:40-41, 46). Typical forms produced by this style of cognition include collages, montages and compilations of data (Spinner 1987:42). It is characterized by fragmentation and disconnectedness (Spinner

1987:46).

Prinzipielle Rationalität is linked to a theoretical style of cognition, characterized by a striving for precision and the tendency to integrate the objects of knowledge into global theories or systems (Spinner 1987:43). Such theories can be confirmed through pro-information, and tested through contra-information (Spinner 1987:45, 47). According to Spinner, this does not apply to the additive style of cognition, as it does not take the systematization of knowledge so far that the confirmation or refutation of a hypothesis would affect any other, related hypothesis (Spinner 1987:44).

However, in a context such as the detective novel, where a set of events is explained through interconnected hypotheses, this statement seems open to question. In the detective novel, a correct solution normally cannot be found if the hypothesis concerning any aspect of the case is false and not corrected, although the detective is not concerned with constructing global theories, but with solving individual problems. For this reason, Popper's theory of fallibilism, which constitutes a pluralist approach to the problem of knowledge, yet can be related to a theoretical style of cognition has been integrated into the theoretical framework for this study (see 1.6).

The additive style of cognition results in the laconic statement of empirical findings, historical reports, and so on. These are neither legitimated in terms of, nor grounded in existing theories, knowledge or arguments (Spinner 1987:50). The analysis of traditional detective stories in chapter 2 supports this, but also demonstrates that the accuracy of empirical findings can be proposed as validation of dogmatic rationalism. To the extent that the detective investigates particular, unrelated cases, without attempting to extrapolate a theoretical system from his findings, he operates within the framework of an additive style of cognition. However, in the traditional detective novel, his findings are presented as validation for normative rationality. It will also be seen in all the text analyses that, despite the particularized, empirical nature of each investigation, the detective's approach is not atheoretical. This contradicts Spinner's assertion that the additive style of cognition is completely free of theoretical presuppositions (Spinner 1987:50), and agrees with the assumption that observation is always informed by particular hypotheses (Popper 1979:258-260).

1.4 Deterministic chaos

Chaos theory ties in with the indeterminism outlined in 1.2. It studies systems which exhibit random behaviour. According to Chaitin (1975:48), a 'series of numbers is random if the smallest algorithm capable of specifying it to a computer has about the same number of bits of information

as the series itself'. In other words, the series cannot be compressed into a simple rule which can be used to generate it. Similarly, the behaviour of chaotic systems is too complex and inconsistent to be predicted in terms of basic general rules.

Such systems are aperiodic, that is, their behaviour never reproduces itself exactly within a given period of time; the opposite is true of periodic systems (Feigenbaum 1989:50). Examples of chaotic systems include the stock market, demographic patterns and the weather. They are unpredictable, since, 'given infinitesimally different starting points, we often end up with wildly different outcomes' (Cvitanovic 1989:3). Given two slightly different initial states of a system, its future behaviour would be unpredictable, as successive states may differ more and more widely, and the differences would be impossible to predict (cf Lorenz 1989:370).

The reason for this is that aperiodic systems exhibit sensitive dependence on initial conditions, that is, small perturbations cascade upwards through the system (Gleick 1987:22). They 'blow up' and produce a chain of effects throughout the system which cannot be explained in terms of direct causality. This is called the 'butterfly effect': the flapping of a butterfly's wings produces a tiny change in the atmosphere. As a result, over a period of time, the behaviour of the atmosphere deviates from expected patterns. Eventually, an unforeseen event happens - or does not happen: it cannot be predicted what the outcome of these deviations will be (Stewart 1989:141). The deviations will occur at irregular time intervals and none will be repeated exactly; if any deviation were to reproduce itself, the system would become locked into repeating the same pattern, and thus turn into a periodic system. This does not happen because tiny perturbations do not remain small, but blow up in an unpredictable manner (Gleick 1987:22-23).

Edward Lorenz, the meteorologist who first theorized sensitive dependence on initial conditions, also described the so-called Lorenz attractor. He took a system of three equations for the rising of hot gas in liquid, known as convection. These he selected because their 'solutions afford the simplest example of deterministic nonperiodic flow of which the writer is aware' (Lorenz 1989:371). Lorenz used the changing numerical values of the three equations' variables to construct a picture of the system's behaviour. Each set of three numbers was taken to establish coordinates which specified 'the location of a point in three-dimensional space' (Gleick 1987:30). The resulting picture showed that the system's behaviour neither reached a steady state, nor reproduced itself. Instead, it 'traced a strange, distinctive shape, a kind of double spiral in three dimensions, like a butterfly with its two wings' (Gleick 1987:30). This is the Lorenz attractor.

Ruelle and Takens proposed a closely related concept, namely, strange attractors (Gleick 1987:133). The strange attractor is situated in phase space, 'the totality of all possible states of

a physical (...) system', 'a space (...) the elements (phase points) of which (...) represent the states of the system' (Anosov 1991:150). In phase space, a point denotes the state of the system at a given moment in time. The trajectory of the system's behaviour in time can be charted as a series of points, each representing a successive state of the system (Gleick 1987:134-137). Thus, for example, the behaviour of a 'rotor, a pendulum swinging through a full circle, driven by an energetic kick at regular intervals' can be plotted with the aid of a computer (Gleick 1987:143). Eventually, the picture becomes impenetrably complex, almost amorphous. It can, however, be simplified by constructing a Poincaré map, which involves converting it to two dimensions, sampling the system periodically, instead of continuously, and reducing the continuous line representing each swing to a point (Gleick 1987:142; Hobbs 1991:154). Thus, it can be shown that a regular pattern, a 'trajectory towards which all other trajectories converge' (Gleick 1987:150) underlies the system's complex behaviour. The trajectory of a strange attractor never closes on itself; it is infinite and multidimensional (Cambel 1993:70). It is important to note that the 'system will be somewhere on the strange attractor, but one does not know where' (Cambel 1993:73). Though infinitely complex and unpredictable, the strange attractor is not simply disorderly; it displays 'an infinite regress of detail, a never-ending nesting of pattern within pattern' (Hofstadter 1987:384). According to Ruelle (1991:64), strange attractors 'look strange: they are not smooth curves or surfaces'; moreover, 'the motion on a strange attractor has sensitive dependence on initial condition'.

Strange attractors can be extrapolated from the behaviour of dissipative systems, that is, systems in which a 'noble' form of energy, such as mechanical, electrical or chemical energy is changed into heat (Hofstadter 1987:381; Ruelle 1989:47). These systems will reach a steady state unless they are constantly fed some noble energy; only in this instance do they 'exhibit an interesting behaviour' (Ruelle 1989:47). Strange attraction does not always develop spontaneously. There also seem to be chaotic systems in which it does not occur, such as stock market trends, the climate and others (Gleick 1987:307). Therefore, it cannot be regarded as a universal rule or fundamental structure.

The transition from stable to chaotic behaviour has been investigated mathematically by the theoretical physicist Mitchell Feigenbaum, with reference to, amongst others, fluids changing over from smooth to turbulent flow, demographic patterns and the noisiness of a variety of oscillators. The feature common to all these phenomena is that their behaviour remains orderly within a certain range of values for an external parameter such as temperature; beyond that range, the behaviour becomes erratic (cf Feigenbaum 1989:50). Feigenbaum found that, for all systems following the period doubling route to chaos, there is a critical value of the parameter, beyond which the systems' behaviour becomes erratic (Hofstadter 1987:375; Feigenbaum 1989:50). A periodic

system repeats itself at regular time intervals. In period doubling, the system will first take double the initial period of time to repeat itself, then four times the period, and so on (cf Gleick 1987:206). For some values of the parameter beyond the critical point, the systems can become aperiodic; for most, it will be periodic, but the periodicity will be hard to detect: firstly, 'the period will be extremely high. Secondly, the orbit will be much more chaotic than before' (Hofstadter 1987:375). Most importantly, for all these systems, the rate of the onset of complex behaviour is predetermined at the value 4.6692016...(Feigenbaum 1989:50). Thus, Feigenbaum discovered and precisely calculated certain universal constants in dynamic systems' transition from orderly to erratic behaviour. Like the Lorenz attractor and strange attractors, this indicates that the behaviour of chaotic systems can be regulated, though unpredictable.

A similar finding was made by Barnsley, who used the 'chaos game' to illustrate the generation of recognizable shapes through randomness. The simplest form of the game involves plotting the results of flipping a coin by marking points on a piece of paper. Gradually, not a collection of random points, but a recognizable shape will appear (Gleick 1987:236).

While Feigenbaum and others revealed the hidden order underlying chaotic systems, the mathematician Benoit Mandelbrot demonstrated that simple processes can generate infinite complexity. This is exemplified, amongst others, by the Mandelbrot set, 'the most complex object in mathematics' (Gleick 1987:221). It is produced by 'the iteration in the complex plane of the mapping' of a simple equation (Gleick 1987:227; for an explanation of the rule, see pp 231-232). In the complex plane, the numbers from minus infinity to infinity 'lie on a line stretching from the far west to the far east', while the imaginary numbers lie on a line which 'stretches to infinity in the north and the south' (Gleick 1987:215). The set contains an infinite variety of shapes, shapes within shapes, repeating but not reproducing themselves (Gleick 1987:221-228). It is an example of a fractal. Fractals are a family of highly complex geometrical shapes introduced by Mandelbrot; their regularities or irregularities can be statistical and a multiplicity of internal shapes are repeated, but not reproduced at all scales (cf Mandelbrot 1982:1, 20; Dewdney 1985).

A number of parallels have been suggested between chaos theory and deconstruction. Hayles asserts that, 'Deconstruction shares with chaos theory the desire to breach the boundaries of classical systems by opening them to a new kind of analysis' (Hayles 1988:314). This is not accurate: chaos theory cannot be applied indiscriminately, and does not cover periodic systems. It is also not accurate to state that, 'both discourses invert traditional priorities: chaos is deemed more fecund than order, uncertainty is privileged above predictability' (Hayles 1988:314). Chaos theory does indeed demonstrate the fecundity of randomness, but does not 'privilege' uncertainty; it simply focuses by definition on the complex behaviour of aperiodic systems. It seems dubious

to compare the 'textual indeterminacy' which Derrida attributes to 'the inherent inability of linguistic systems to create an origin' to the 'initial uncertainties' concerning initial conditions in chaotic systems (Hayles 1988:316). The concept of textual indeterminacy can be extended to almost any verbal text, while sensitive dependence on initial conditions is peculiar to aperiodic systems. It is a property of the behaviour of physical systems, and does not undermine the texts used to describe them.

The brief overview in this section shows that chaos theorists neither claim that 'chaos is always already' present in all systems, nor propose 'an apocalyptic break with logocentrism' or rationality (Hayles 1988:316). Chaos theory and deconstruction have completely different methodologies and applications, and it is clear that the former does not reject the notion of objective knowledge.

Both chaos theory and deconstruction are linked to indeterminism. For the purposes of the present study, however, chaos theory seems more useful. Firstly, it deals explicitly with randomness, the key motif in the texts most important to our study. Lem refers to a 'random universe', to a 'chain of chance', to 'random causality'; Gadda's *Pasticciaccio* centres on the concept of multiple causality, analogous to Cournot's definition of chance as multidetermination, that is, the intersection of a plurality of independent causal series (Morin 1988:423). Secondly, chaos theory exemplifies the shift away from, but does not invalidate classical rationality, in that it studies systems classical science cannot account for, without denying the existence of stable, regular systems. Thirdly, it is aimed at the analysis of aperiodic systems in terms of random processes. It does not decompose the system into its constituent parts, but studies its behaviour in time. The central insights of chaos theory, it seems, are that randomness can produce a kind of order, and that simple processes can generate infinite random complexity.

It seems rather dubious to assert that, according to the theory, 'chaos possesses a deep structure of order' (Hayles 1988:307). The notion of deep structure suggests that randomness can be reduced to, and is generated by a fundamental algorithm. However, Chaitin (1975:48) showed that this is not true for random numerical systems. The universal constants identified by Feigenbaum and the attractors theorized by Lorenz, Ruelle and others also merely indicate that the behaviour of chaotic systems can be regulated. They suggest that phenomena are never simply anarchic or irrational. The 'butterfly effect' amounts to a diffuse, decentred causality which operates unpredictably within a network of relations and can result in ignorance instead of clarity: if the initial conditions are not precisely known, then future knowledge of the system's behaviour is impossible (cf Feigenbaum 1989:76).

1.5 Fallibilist pluralism

Indeterminism implies that certainty and verifiability have to be discarded as criteria for truthful statements about the objective world. Instead, 'we must regard all laws or theories as hypothetical or conjectural; that is, as guesses' (Popper 1979:7).

According to classical empiricism,

we should reject all propositions...for which
the evidence is insufficient, and accept only those
propositions for which we have sufficient evidence:
which can be proved or verified by the evidence of
our senses (Popper 1979:127).

This principle cannot be preserved. The demand that a hypothesis should only be accepted 'if it can be justified by positive evidence' if it can be 'shown to be true, or, at least, to be highly probable' (Popper 1989:228) is unacceptable within a falsificationist framework of reference. For the falsificationist or fallibilist, it is impossible to provide positive reasons 'to justify the belief that a theory is true' (Popper 1989:228). A hypothesis cannot be positively justified or proved, in that it would always be possible for an ingenious thinker to find gaps or weaknesses in it (Popper 1979:80). Moreover, certainty and verifiability are not always desirable, as statements which can be proved usually concern trivial problems (cf Popper 1989:229).

Fallibilism is concerned with knowledge production, and deals primarily with scientific rationality, which is a 'subspecies' of cognitive rationality (cf Schnädelbach 1987:72). Unlike classical rationality, fallibilism does not insist that claims of truthfulness should be supported by sufficient grounds (Spinner 1974:24). Its basic tenet is that 'the rationality of science lies not in its habit of appealing to empirical evidence in support of its dogmas...but solely in the critical approach' (Popper 1989:229). A hypothesis would only be regarded as empirical if it could be falsified. It is not required to be positively confirmed, only to be refutable (Popper 1971:15).

Similarly, Einstein stated that all knowledge is hypothetical; that a scientific hypothesis can never be justified *a priori*; that there is no *a priori* foundation for knowledge by which hypotheses can be justified (Spinner 1974:44-45).

According to Popper, knowledge production always starts from problems, not observations. Faced with a problem, the investigator proposes a solution, which is then criticized. This results in a redefinition of the problem, on the basis of which a better solution can be proposed; and so on (Popper 1979:258-260). The aim of a hypothetical solution is to explain the known facts of the

case. The facts to be explained, the *explicandum*, must be deducible from the *explicans*, the premisses constituting the explanation. The *explicans* is constituted by the specific initial conditions and the universal law in terms of which these conditions can result in the *explicandum* (Popper 1979:349-350).

Such an explanatory procedure seems most useful with respect to deterministic systems. In a chaotic system, however, it may be impossible to determine the specific conditions which resulted in a particular phenomenon; in the case of a system which undergoes a transition from, or fluctuates between stable and erratic behaviour, it would only sometimes be possible. Popper's structure of explanation can, however, accommodate Cournot's idea of multidetermination, according to which a phenomenon can be produced by the intersection of a multiplicity of independent causal series (Morin 1988:423), in that the *explicans* does not have to be singular and simple. The structure can also lead to a kind of infinite regress: the *explicans* could be turned into an *explicandum*, and so on, *ad infinitum*.

In any event, the information offered in support of the *explicans* must not be contained in the *explicandum* itself, as that would result in circular argumentation. The universal law which is part of the *explicans* also has to be shown to apply to test cases independent of the *explicandum* (Popper 1979:381). Failing that, one would only have an *ad hoc* explanation.

According to Popper (cf 1971:198-201), hypotheses cannot be verified, only corroborated or refuted. Popper distinguishes between the probability of a hypothesis and its corroboration: the first term refers to the chances of its being valid in terms of the probability calculus, the second, to its having passed a number of severe tests. A test 'will be said to be more severe the greater the probability of failing it' (Popper 1983:244; cf 224-225, 243). Any genuine test is an attempt to refute the theory (Popper 1983:244).

In this context, it seems, a hypothesis could be described as plausible if there is *prima facie* evidence of its possible validity. Such evidence could include previously corroborated hypotheses concerning similar problems. On the basis of its plausibility, a hypothesis could be used as a working, that is, a provisional, probably inadequate hypothesis.

A seemingly implausible hypothesis should not be rejected out of hand, as it may yet be corroborated. This leads us to Spinner's fallibilist pluralism. Popper himself clearly acknowledges pluralism as implicit to fallibilism: 'I do not assert that there is one (...) theory which best accounts for or explains any given evidence. On the contrary, the idea of a plurality of competing conjectures...is essential to my methodology' (Popper 1983:69). Spinner points out that facts as

such are not sufficient to falsify a hypothesis; only facts reinforced by alternative hypotheses are (Spinner 1974:87).

Even though, within a fallibilist-pluralist framework, a hypothesis can be neither proved nor taken as incontrovertible foundation for knowledge (cf Spinner 1974:101), Popper postulates the idea of objective truth as regulative principle (Popper 1989:229). Truth as an arbitrary construct or fiction (cf Nietzsche 1964a:46) - what Popper calls subjective truth - is virtually useless from a fallibilist perspective, especially because 'these subjectivist theories...are irrefutable (in the sense that they can too easily evade any criticism)' (Popper 1989:227). In terms of objective truth, however, a hypothesis 'may be true even though nobody believes it, and even though we have no reason to think that it is true' (Popper 1989:225). Following Tarski, objective truth is defined as the correspondence of statements to the facts about phenomena they describe or explain (Popper 1989:229). This does not mean that it is a fixed, absolute given; it is not an absolute *a priori* yardstick (Popper 1979:317-318).

Competing theories are not measured against fixed external criteria, but evaluated comparatively, amongst others, with respect to which of them make more precise assertions and stand up to more severe tests, describe or explain the facts in more detail, and so on (Popper 1989:232). As no hypothesis can ever be immune to criticism, there can never be precise correspondence to the facts, except with regard to trivial problems; for interesting problems, objective truth is unattainable.

Better correspondence to the facts can only be obtained through the proliferation of alternative hypotheses (Spinner 1974:89), another reason why no hypothesis should be rejected out of hand. Even if it is laid aside for the time being, it should not be discarded as a possible alternative (cf Naess 1972:88-89. 95-96). It is also possible that a hypothesis which has been refuted will at a later stage be corroborated, or will at least have to be reconsidered if its refutation is refuted.

Fallibilist pluralism does not exclude the possibility that two or more hypotheses may provide equally valid solutions to the same problem. In this respect, it agrees with the notion that, 'Two mutually inconsistent systems may both correspond to reality' (Naess 1972:132).

1.6 Synthesis

The theories outlined in 1.1 tot 1.5 provide the conceptual framework for the text analyses in

chapters 2 to 5. Some aspects of the theories will be used actively, others as part of a general framework of reference. Theoretical concepts which are only used in connection with particular texts will be explained in the analyses. As a general orientation for the reader, a brief overview of the interaction between texts and the conceptual framework is offered in this section.

The texts analysed in chapter 2 do not reject the notions of a universal foundation for knowledge and objective truth. Rationality is reduced to its cognitive aspect, and viewed as stable and homogeneous. The hypotheses advanced by the detectives are not tested and alternatives are either summarily discredited or suppressed. Theories or knowledge systems alternative to those proposed by the detectives are excluded. This amounts to a form of theoretical monism (cf Spinner 1974:74).

The detectives in these texts insist that hypotheses which correspond to the facts can be found through an accurate 'reading' of observable data. This applies especially to Holmes, who professes complete objectivity and strives for certainty and precision. The world he and his successors investigate is presented as inherently stable and orderly, therefore transparently accessible to rational analysis. The perfect harmony between cognitive rationality and an objective world assumed to be shaped in the image of reason ensures a linear progression from observation to unflinchingly accurate inferences. By contrast to Nietzsche's 'philosophers of the future', the traditional literary detective presents his hypotheses with complete assurance, not as possible versions of the world, but as the true state of affairs.

However, faced with a problem, a set of facts to be explained, Holmes and his successors in reality offers conjectures. These are so readily confirmed that they are accepted as statements of fact. Yet they are based upon informed guesswork, upon an interpretation of the data (cf Popper 1989:14). In this sense, the truths uncovered by traditional literary detectives are not self-evident, although Poirot for example claims that one only needs to systematize data to find a solution.

As indicated earlier on, pluralism is a vital component of Popper's theory of conjectural knowledge (see 1.5). Inasmuch as Holmes and his successors are played off against exponents of the commonsense theory of knowledge, according to which truth, accessible only through the senses (Popper 1979:60), is manifest, right there in front of you (Popper 1989:7); and inasmuch as the 'Holmesians' acquire knowledge and understanding through conjectures, their dogmatism is surprising. They modify their hypotheses if necessary, but that in itself does not amount to a pluralist accommodation of alternatives: the various hypotheses do not co-exist or compete as alternative or complementary solutions to the same problem; one simply succeeds and replaces another because one is found to be wrong, the other to be right. This amounts to an

oversimplification and even distortion of the theory of corroboration (cf Popper 1983:217-255; 1989:231-234).

Eco's detective, unlike Holmes and his followers, explicitly describes truth as the result of interpretation. Underlying his investigation is the assumption that observable phenomena are signs which can be 'read' in the light of the observer's background knowledge. This knowledge can include specialized factual information, previous experience, knowledge of relevant texts (in William's case), and so on. It enables the investigator to show that phenomena carry a multiplicity of meanings.

Up to this point, William's method is not unlike Holmes's. The latter, however, assumes a direct and evident correlation between phenomena and the meanings attributed to them. Thus, the hypothetical nature of his 'readings' is downplayed. By treating phenomena as signs, William implies that there is no necessary connection between them and his inferences (cf Culler 1975:18). His conjectures are clearly indicated as such. Thus, they could in principle be falsified through alternative 'readings'. In this respect, and in his tolerance for alternative viewpoints, William's approach is compatible with Spinner's fallibilist pluralism (see 1.5).

Both William and the detectives discussed in chapter 2 display an unambiguous epistemological optimism: they suggest, albeit in different ways, that the book of the world can be decoded. To the extent that William adopts a pluralist-fallibilist approach, instead of viewing truth as a natural given, he offers tentative perspectives, like a Nietzschean 'philosopher of the future' (cf Nietzsche 1964a:8). However, his conjectures are not merely subjectivist, and therefore, his pluralism is not equivalent to indifferent relativism. His conjectures are based upon observable data and background information not fabricated by himself, and accessible to all the members of his audience. The conjectures can be tested objectively, and are not merely arbitrary constructs. His analytical method can be applied to a variety of independent phenomena to test its explanatory power. It seems, therefore, that the idea of objective truth as regulative principle is implicit to Eco's novel, in that it does not equate interpretation with subjectivism, but suggests that it could produce objective knowledge.

There is a further similarity between William and traditional detectives: as in the case of Holmes and his successors, William's authority is never seriously challenged. Neither his findings nor his method is subjected to critical scrutiny. Moreover, his implacable opposition to, and explicit condemnation of dogmatism suggest that pluralism should be viewed as the only legitimate perspective on knowledge. Eco's novel presents pluralism as both prosecutor and judge of non-pluralist viewpoints. This, together with the lack of hypotheses alternative to, and challenging

William's raises the question of whether the pluralism proposed in Eco's novel does not amount to a self-legitimizing dogma. William's approach as such is compatible with fallibilist pluralism, yet in the context of the novel as a whole, it amounts to monopolistic pluralism (cf Spinner 1974:238-239). Such a *Monopolpluralismus*, to use Spinner's term, presents itself as a pervasive *Weltanschauung*, as foundation or *Begründung* of knowledge. In this respect, it resembles a totalizing monolithic Reason.

Part of the problem, if one could call it that, is that William is quite a successful detective. The same cannot be said of Gadda's Don Ciccio Ingravallo. While the crimes in *Il nome della rosa* are committed for specific, clearcut reasons, the motives for the crimes in Gadda's *Pasticciaccio* are never clarified. Various possibilities are uncovered, but none achieves a high degree of corroboration.

Ciccio's investigation becomes entangled in multidetermination, the puzzle of a multiplicity of independent causal series (Morin 1988:423). The detective himself is also convinced that any action or event is the result of a tangled web of causes (Gadda 1983:9). Each of the causal series involved may be stable and predictable. However, the ways in which they intersect to produce a particular effect, and the point of intersection cannot be unravelled or predicted. This is analogous to a chaotic system of which the physical properties may be known, but whose behaviour over a period of time is erratic and unpredictable.

Faced with a particular effect, such as the murder of *signora* Balducci, Don Ciccio uncovers a number of possible causal chains branching off in different directions. The investigation turns up a network of possibilities, but very little positive evidence. Similarly, in terms of the 'butterfly effect' (see 1.4), if one tries to work backwards from a particular effect in a chaotic system, one would be caught up in an infinite labyrinth of possible causes, without ever achieving precise knowledge of the first link in the chain; the effect is produced by random interactions.

The concept of attractors also applies here: as Don Ciccio searches for a way out of the labyrinth, certain patterns keep recurring, without replicating themselves: chaos is not a- or irrational. Moreover, Ingravallo is guided by objective truth as correspondence to the facts. Despite his awareness of complexity, his aim is to construct a hypothesis which would account for all the known facts of the case clearly and economically. Like the detectives in chapter 2, he strives for a clearcut solution.

Don Ciccio's investigation is not only affected by randomness, but also by the instinctual. This recalls Nietzsche's statement that the philosopher's thought is channelled into certain directions

by the instincts (Nietzsche 1964a:9). Thus, for example, the detective's desire for one of the suspects prevents him from investigating her possible involvement in the Balducci murder. The contamination of cognitive rationality by the instinctual results in the suppression of certain hypotheses, and thus, contradicts Don Ciccio's pluralist conception of causality. While, in the Holmes narratives, the instinctual is suppressed to such an extent that it becomes the handmaiden of a 'pure', homogenized reason, in the *Pasticciaccio*, its disruptive energy cannot be contained. In the Holmes narratives it is smoothed over to protect the presumed homogeneity of reason; in Gadda's novel, its activation undermines pluralism. At the same time, however, the object of Ingravallo's desire, the ineffable feminine becomes a metaphor for the infinite complexity which defeats his investigation.

In the texts by Lem, the instinctual is almost wholly marginalized. They focus exclusively on the problem of cognitive rationality faced by random events. The detectives' methodology is quite scientific: in *The investigation*, Sciss proposes a 'structural' analysis of the data through statistical correlation; in *Chain of chance*, a team of experts tries to reproduce the crimes under closely monitored conditions. Again, objective truth as correspondence to the facts seems to be accepted as regulative principle; the aim is to find a hypothesis which would account for all the facts without introducing new unknowns (cf Kahn 1990:1857). The proliferation of hypotheses is not only motivated by the desire for better correspondence (cf Spinner 1974:89), but is also symptomatic of the investigators' failure to come up with a satisfactory explanation. It is motivated by the search for objective knowledge, yet underlines the inability of cognitive rationality to act as foundation for truthfulness.

None of the hypotheses advanced in *The investigation* achieves a significant degree of corroboration. The solution proposed is contradicted by some of the data and not supported by direct evidence. It can, however, be accepted in the absence of better alternatives. The solution proposed in *Chain of chance* is to some extent corroborated; again, there does not seem to be a better alternative. The lack of a high degree of corroboration indicates that the conjectures produced by cognitive rationality with respect to random events are little more than mere possibilities.

Lem's texts illustrate the difficulty of finding a basis for objectively truthful statements about random events. The patterns described by the investigators are neither grounded in rationality, nor in a stable order inherent to the phenomena concerned. In so far as any degree of truthfulness can be attained, it is the result of chance occurrences: there is a random probability that a set of events corresponding to a particular hypothesis will occur. If it does, the hypothesis may be viewed as truthful, but will not constitute a validation of cognitive rationality. This is analogous to the

indeterminacy of subatomic events: in subatomic interactions, there may be a strong probability that a particular outcome will ensue, or the odds may be even, but the outcome is governed by chance (Gribbin 1986:238).

Linking back to, but not echoing Nietzsche (1965:127), Lem presents the world as a chaotic system. In *Chain of chance*, for example, the initial conditions of all the cases involved are not known. As a result, the cases cannot be exactly simulated in the experimental setup. The errors that creep in blow up because of sensitive dependence on initial conditions, and the whole simulation experiment fails.

The functioning of the causal factors identified can be explained quite accurately for a particular case, in which they interact with the narrator-investigator himself, but only guessed at with respect to the others. Their future behaviour cannot be predicted at all, because of the number of random variables involved and because the occurrence of suitable agents is governed by chance. Similarly, in a chaotic system a small perturbation will cascade upwards through the system, but the route and eventual outcome of this process cannot be known beforehand. The most Lem's investigators could do would be to describe the approximate parameters of the causal factors' trajectory, which recalls the concept of strange attractors (see 1.4).

In the novels by Gadda and Lem, the proliferation of hypotheses could be continued virtually *ad infinitum*. Further proposals may not be radically different from those already made, but may only contain small variations. The process could be infinite because the variables in a random system often do not change according to a fixed pattern, and new factors could be introduced at random because of sensitive dependence to initial conditions. The point is that the system can be assumed never to reproduce the same pattern. Therefore, it cannot be explained once and for all.

Moreover, fallibilist pluralism suggests that, just as there cannot be a single 'best' reading of a text, only more suggestive, as opposed to more trivial ones, so there can at best be one or more hypotheses which could be described as the best available in terms of explanatory power and economy. For a chaotic system, one may end up with a series of hypotheses corresponding to successive states of the system. Only *ad hoc* hypotheses will be possible, no general explanation for the system's present and future behaviour. These hypotheses may at first only introduce small variations, but will eventually become widely different as a result of sensitive dependence on initial conditions.

No hypothesis can, however, be arbitrary, as the investigator has to work with the data available to him. These set the parameters of the investigation and establish certain bounds for plausible

hypotheses. The concepts of strange attractors and universality (see 1.4) suggest that a chaotic system's behaviour can be regulated, though infinitely complex and unpredictable. Therefore, over a period of time, successive hypotheses will be bounded by the pattern underlying the system's behaviour. Here, it should be remembered that a strange attractor is infinitely multidimensional. Thus, the proliferation of hypotheses can be infinite, but not unbounded or arbitrary.

Each new hypothesis may use previous ones as input, just as successive readings of a text build on previous ones. The reader is also bound by the data, that is, the text, but as successive readings introduce new variations, the trajectory of readings may become increasingly complex, even though the text itself may appear simple and straightforward. This recalls the Mandelbrot set, infinite complexity generated by the iteration of a simple equation (see 1.4). A graphic plotting of the Mandelbrot set and similar structures reveals infinitely complex and varied, yet quite symmetrical patterns (see for example Dewdney 1985). This suggests that even an infinite proliferation of readings will be patterned, despite its random complexity.

Such a regulated pattern could be extrapolated from the trajectory of a large number of readings or hypotheses over a period of time. It does not constitute a kind of deep structure, but indicates that random complexity is never merely arbitrary. If it was, then hypotheses would have been valued only for their playfulness and contradictoriness, like Nietzsche's 'philosophy of the future', not for their economy and explanatory power, and chaotic systems would have remained completely beyond the reach of cognitive rationality. However, even when they are defeated by indeterministic events, the detectives in our study neither propose the demise of reason itself nor deny the possibility of objective knowledge as such. The objective world may be a deep text, but it never degenerates into primordial chaos.

1.7 Why the detective novel?

It was suggested in the introduction that the problem of whether the texts analysed in chapters 3 to 5 could be described as post-modernist is rather trivial. Moreover, a reading of the texts in the light of the theories outlined in 1.2 to 1.5 suggests conclusions not entirely in agreement with certain post-modernist ideas.

It has to be conceded that the texts possess certain traits accepted as typically post-modernist. Eco, for example, respects the convention of the slightly excentric, super-intelligent detective (cf 1.8). The detective's name, William of Baskerville, as well as some of his habits and mannerisms self-consciously link him to Sherlock Holmes. This intertextual connection highlights the literary or

textual nature of the convention (cf Bertens & d'Haen 1988:81). The texts by Gadda and Lem establish a basic detective novel framework, but undermine the principal convention of the subgenre, namely, the inevitability of a clearcut solution (see 1.8; cf Bertens & d'Haen 1988:88; Mulder 1989:252-253).

These texts, as well as Eco's seem to support the post-modernist notion that there is no ultimate order, authority or centre, that there are no positively confirmed truths (Bertens & d'Haen 1988:31; Bertens 1986:28-29). This is in agreement with the fallibilist principle (already formulated by Popper in 1934, and before him, by Einstein) that knowledge is always conjectural and can never be positively confirmed (see 1.5).

However, any hypothesis which presents itself as a mere linguistic construct severed from objective reality (Bertens & d'Haen 1988:31) denies the idea of objective truth as regulative principle and places itself beyond refutation. By contrast, the detectives in the texts analysed implicitly accept this principle, and especially in the texts by Gadda and Lem try to come to grips with indeterminate objective reality through the proliferation of falsifiable hypotheses (see 1.6). With one or two exceptions in *The investigation*, these are bounded and regulated, not arbitrary. The indeterminism set out in 1.1 to 1.6 and implicit to the texts analysed is not equivalent to Hassan's indeterminacy (Hassan 1980:123), according to which all knowledge is speculative, therefore no conception of the world can claim to be more truthful, and thus more well-founded than any other (Bertens & d'Haen 1988:31-32). Pluralist-fallibilist hypotheses are conjectural, yet in so far as they are falsifiable, they always achieve varying degrees of corroboration, and thus, of approximation to objective truth (cf Popper 1989:232). One could be regarded as more truthful than another if it achieves a higher degree of corroboration, that is, passes more severe tests, possesses greater explanatory power and so on. Even in the case of seemingly random events, Hassan's notion does not seem to apply, since a hypothesis which introduces new, unknown variables can be viewed as inferior to an explanation in terms of known factors (cf Kahn 1990:1856).

Like chaos theorists and pluralist fallibilists, the detectives in the texts analysed neither aim to discover the true essence of phenomena, nor assume that such an essence exists. Instead, they investigate specific problems in the context of particular systems. Viewed from this perspective, the post-modernist idea that, 'Wij weten niets over de grond, het ware zijn, van de dingen' (Bertens & d'Haen 1988:31) implies a false premise (the investigator strives to know the 'true essence' of phenomena) and constitutes a pseudo-problem (this 'true essence' cannot be known). A universally valid principle such as the geometric conversion discovered by Feigenbaum does not aim or pretend to say anything about the 'true essence' of chaotic systems, but successfully demonstrate that

their behaviour is regulated in a particular manner (see 1.4).

The texts analysed in chapters 2 to 5 neither share the naive rationalist optimism of the Holmes narratives, nor the radical scepticism of some versions of post-modernism. Lem's *The investigation*, for example, suggests that random events cannot be explained in terms of direct causality, and that only a proliferation of possibilist *ad hoc* hypotheses (cf 1.5) can be proposed in connection with such events; this, however, is not generalized into a kind of epistemological defeatism.

The chain of chance demonstrates that exact knowledge of a system with sensitive dependence on initial conditions is impossible, and that the corroboration of hypotheses about it may depend upon chance. This, however, is not viewed as indicative of the impotence of cognitive rationality: events in a random system are unpredictable, but the global behaviour of the system follows discernible patterns. Thus, the occurrence of the causal factors identified by the detectives can be predicted, but not how and when they will be activated. Similarly, in a chaotic system such as the weather, longterm predictions are impossible, but certain global patterns can be discerned. Even the term 'post-modernism' itself would have been quite useless if the conglomerate of cultural phenomena it denotes did not form certain global patterns or possess specific common denominators.

In summary, the texts by Eco, Gadda and Lem all use and modify conventions of a 'low-brow' subgenre, the detective novel. In this respect, they can be described as post-modernist. The choice of this narrative framework, however, does not seem to be motivated primarily by 'purely literary' considerations, but by the fact that it offers a convenient vehicle for a fictionalized examination of the problem of cognitive rationality within indeterministic contexts. In this respect, the texts reflect the epistemological concerns of post-modernism (cf Bertens & d'Haen 1988:40; Welsch 1987:79, 186). However, they indicate a critical attitude towards certain post-modernist notions about objective knowledge.

This is especially true of the texts by Lem, which are pervasively informed by concepts from the 'hard' sciences, but also holds true for William of Baskerville's successful 'readings' of observable phenomena and Don Ciccio's notion of pluralist causality. A reading of these texts in terms of the theoretical framework outlined in 1.2 to 1.6 suggests that it would be an oversimplification, not supported by recent hypotheses about the behaviour of chaotic systems, to deny the possibility of objective knowledge or reject the idea of objective truth as regulative principle.

Moreover, although the texts do not propose the correspondence of fiction to the 'real' world, they do not deny the ability of the fictional text to construct an argument or suggest conjectures about

objective extratextual phenomena; in other words, to make meaningful or even truthful statements about the world outside the text. Thus, they suggest that fiction, like science, though in a vastly different manner can make a contribution to the production of objective knowledge and our understanding of the 'real' world. It would be restrictive, perhaps even reductive to view it as a mere game of signifiers severed from objective realities.

1.8 The conventions of the detective novel: a brief outline

As background to the traditional detective stories analysed in chapter 2 and the post-modernist variants mentioned above, a brief outline of the standard detective novel framework seems required. The American 'hard-boiled' novel constitutes a sub-subgenre on its own, and differs in important respects from the classical British detective novel. Thus, for example, the former places more emphasis on physical violence, less on ratiocination, and is therefore left out of consideration.

The crime itself is an indispensable element. As a rule, it is introduced early on, even right at the beginning. Neither the crime itself nor the victim is of intrinsic importance; they are mere pretexts for the investigation: 'Nicht als Verbrechen ist er von Bedeutung, sondern als Anlass für die Tätigkeit der Detektion; nicht die sich in ihm ausdrückende Inhumanität wird Thema, sondern die Aussergewöhnlichkeit seiner Begleitumstände' (Nusser 1980:26). ['it is not of interest as crime, but as pretext for the activity of detection; the theme is not the inhumanity it expresses, but its extraordinary accompanying circumstances'] The victim is of interest only as a component of the enigma (cf Nusser 1980:40).

The main elements of the investigation are: observation of the victim and the scene of the crime; the interrogation of witnesses; and the inferences made by the detective. In most cases, for example, in Agatha Christie's novels, there is a restricted number of witnesses, all of whom are regarded as potential culprits. Although all detectives do not attach equal importance to observation, the traditional detective's observations are almost invariably presented as accurate. Some detectives deliberately construct working hypotheses, in other cases (e.g. Simenon's Maigret novels, which are somewhat atypical), the solution gradually emerges through the detective's immersion in the case. The detective's reasoning is seldom completely clarified before the solution. In many cases, he explains in the concluding chapters how the solution was reached; sometimes, the people involved in the case are convened for this purpose.

This creates the impression that the reader is made an active participant in the logical unravelling

of the enigma (cf Brecht 1980:53), which prompted comparisons with mathematical or chess problems and crossword puzzles (Caillois 1983:9). In fact, it would be more accurate to emphasize the reassuring inevitability of the solution; the reader is not required to outguess the detective, but can relax and simply admire his accomplishments (Sciascia 1983:216-217).

The typical fictional detective is somewhat of an outsider and a loner, and has certain excentricities (Alewyn 1985:385; Nusser 1980:5). Despite these distinctive qualities, he is of little interest as a character (Symons 1985:135). He is simply there to clarify the enigma by identifying the culprit and explaining his actions. The 'Great Detective' of the pre-war era is typically asexual or even misogynous (unlike the sexually active hero of the hard-boiled school), and a bachelor (cf Symons 1985:138-140). The most illustrious examples, such as Holmes or Poirot, are private investigators, not policemen (Maigret is an atypical figure: cf Symons 1985:135-136).

As far as the criminal is concerned, there is no set pattern, except that there is almost always a rational explanation for his crimes (cf Narcejac 1975:27). These are committed for definite reasons, such as financial gain, revenge, and so on, not as the result of irrational impulses. The motives for the crime are stated, not explained through psychological analysis; the criminal's psychological makeup as such is of little or no interest in the detective novel, while it could be analysed in considerable detail in the crime novel (cf Symons 1985:162-165 for a comparative discussion of the two forms). The perpetrator is simply a necessary element of the puzzle, in that the crime is always explained in terms of clearcut causal relationships.

In so far as there is a hierarchy of elements, the solution is the most important element in the detective novel. Most of the story is concerned with the investigation, showing the detective at work, displaying his powers of ratiocination; with proposing hypotheses and introducing clues, often misleading; hence the often encountered emphasis on the 'intellectual' nature of the subgenre. Yet all these elements build up towards the inevitable moment of illumination and release of tension provided by the solution. This is the final confirmation of the detective's superiority. It marks the return to a state of equilibrium and indicates that the threat to the existing order has been averted. If the investigation constitutes the unravelling of an enigma through logical reasoning, then the solution represents the triumph of reason, the affirmation of a deterministic universe. It is a re-affirmation of Leibniz's 'nihil est sine ratione sive nullus effectus sine causa sua' (cit in Heidegger 1958:43). By identifying clearcut reasons for the criminal's actions, it re-integrates them into rationality, thus neutralizing and suppressing the disruptive potential of the instinctual.

Within this general framework, there are countless variations. It is virtually impossible, perhaps

even pointless to formulate a watertight definition of the detective novel (cf Symons 1985:13-16). In the hands of its best exponents, it never becomes routine and does not obey hard-and-fast rules. Yet the crime story element is always of paramount importance; it is not merely used as a vehicle for illuminating the 'personality' of a character, for social comment, or for reflecting on philosophical issues (cf Symons 1985:16, 57). A certain amount of sensationalism is therefore inevitable.

CHAPTER 2

A world shaped in the image of reason

2.0 Introduction

The detective story of the tradition initiated by Poe and Conan Doyle and continued by Agatha Christie, Dorothy Sayers, Rex Stout and others proposes the unquestioning acceptance of cognitive rationality as a virtually infallible tool for problemsolving and instrument of knowledge (cf Eisenzweig 1986:14; Narcejac 1975:239). In the Holmes narratives, linear reasoning based on observation grounded in the assumption that phenomena could be 'read' in terms of a direct correlation between visual detail and connotative or denotative meanings is presented as the only true path towards knowledge and understanding. Thus, the narratives implicitly discard the critical and autonomous rationality proposed by Kant (1922:167-176). Through their dogmatic insistence on a particular analytical method, they advocate a monist rationality which is repressive and alienated from the reader, in that s/he is not required to be a critical participant, but a passive admiring onlooker.

2.1 The world according to Sherlock

The 56 short stories which Conan Doyle wrote about Holmes all follow the same basic pattern: the problem to be solved is explained to the detective, usually by a client. Holmes frequently asserts his authority in the initial sequences by drawing inferences concerning either the narrator or the client, or both, which illustrate his intellectual superiority. In the course of the investigation, he identifies vital clues and constructs hypotheses concerning the solution of the problem. The other characters are almost always unable to follow his reasoning or draw the correct inferences from the data presented to them. Once the criminal has been identified, he is confronted, or Holmes explains his reasoning to an admiring audience, or both. The consistent adherence to a basic pattern in the Holmes narratives demonstrates the conventionality of the traditional detective story. Conan Doyle's successors even proposed a codification of the subgenre (cf Symons 1985:93-97), which could be seen as the extreme development of an element found in all traditional detective stories, namely, the desire to project an orderly, consistent reality through a closed, self-sufficient text.

The reader of traditional detective stories is the passive recipient of a fictional world of which the

coherence and consistence are pre-determined by literary conventions. In the Holmes narratives and elsewhere, he is merely an admiring spectator to the detective's accomplishments. This confirms Sciascia's observation that,

il medio lettore di polizieschi, e cioè il miglior lettore di questo genere narrativo, è, insomma, colui che non si pone come antagonista dell'investigatore a risolvere in anticipo il problema, a 'indovinare' la soluzione, a indovinare il colpevole: il buon lettore sa che la soluzione c'è già, alle ultimissime pagine...e che il divertimento, il passatempo, consiste nella condizione - di assoluto riposo intellettuale - di affidarsi all'investigatore...(Sciascia 1983:216-217).

The detective's unassailably superior position is often entrenched through exclusion and repression:

Nei romanzi del genere sono impiegati senza precauzione - senza la precauzione, cioè, che è dell'arte - dei mezzi che con notevole approssimazione si possono definire di terrore: e l'effetto è fuga di pensieri. meditazione senza distacco (Sciascia 1983:216).

Accordingly, the weaknesses and mistakes of Holmes's rivals are highlighted and their theories even ridiculed. The official police is usually presented as rather stupid and unimaginative, sometimes as guilty of smugness and careless thinking.

Thus, for example, Athelney Jones, in *The sign of four*, premises his investigation by asserting: 'Stern facts here - no room for theories' (Conan Doyle 1974:37). He 'realistically' assumes that 'facts' are equivalent to what is immediately evident, yet his observations do not seem to be very accurate. Several important clues have to be pointed out to him by Holmes. Jones constructs a hypothesis before he has all the relevant facts at his disposal, which is not necessarily inadmissible, provided that it is treated as a tentative hypothesis, to be tested and modified as required (cf Popper 1979:258-260). His obtuseness consists in a refusal to modify the hypothesis; he obstinately sticks to it, without being put off by data, brought to his attention by Holmes, which contradict it. Instead, he tries to make the facts fit his theory. He mistakenly wants to use a hypothesis to explain facts not taken into account in its construction, and which it is not powerful enough to explain. His conclusions are based on a series of propositions, each of which, taken separately, seems plausible, but between which no necessary connection is established. Therefore, the conclusions cannot be accepted.

The secondary characters' inaccurate reasoning is further illustrated in *A study in scarlet*. Having found the letters 'RACHE' 'scrawled in blood-red letters' on the scene of the crime, the official detective, Lestrade infers that the criminal 'was going to put the female name Rachel, but was disturbed before he or she had time to finish' (Conan Doyle 1982:33). Holmes, of course, knows that the letters form the German word for 'revenge'. There are several reasons for Lestrade's error. Firstly, his framework of reference is too limited: he does not know any German. A second weakness is that Lestrade's inference is inconclusive and overcomplicated. Its accuracy cannot be established before further data have been collected, as it rests on a new hypothesis (the criminal was 'disturbed'), which would have to be corroborated in turn. By contrast, Holmes's explanation is simple and self-sufficient. It contains fewer premisses than Lestrade's and does not introduce new elements to the case. In terms of simplicity it is therefore superior (cf Chaitin 1975:48). It is also more powerful in that, apart from explaining the letters, it suggests a motive for the crime (cf Popper 1979:143). Lestrade's inferences are not wholly implausible, yet the narrative presents it as obviously false, thereby affirming Holmes's superiority.

Watson, the narrator acts as a foil for Holmes's intellectual giftedness. He states in one of the later stories that his 'methodical slowness' might have irritated the detective, but that it 'served only to make his own flame-like intuitions and impressions flash up the more vividly and swiftly' (Conan Doyle 1985:891). Watson's being intellectually less gifted than his friend is one of the fixed points of these narratives. Time and again, confronted by the same data as Holmes, he fails to draw the correct inferences. In some cases, this is due to his not possessing the relevant knowledge. For example, in *A scandal in Bohemia*, he guesses that the letters woven into the paper of the letter received from Holmes's client indicate the 'name of the maker'. Holmes, with his superior reservoir of factual knowledge, refutes this and provides the correct explanation. In other cases, Watson simply fails to draw any inferences whatsoever from the data he observes. He is unable to achieve the scientist's goal of finding 'an explanation from the data' (Hanson 1961:71). A further problem is that he tends to ignore particulars he regards as unimportant, thereby overlooking important clues, while Holmes repeatedly insists that even the most trivial detail might be vital to the investigation.

Holmes implicitly describes himself as a 'genius' when he states, "'They say that genius is an infinite capacity for taking pains"' (Conan Doyle 1982:36). He is given attributes often associated with the highly gifted: an apparently superhuman intellect, a dislike for everyday routine, eccentric habits, a certain arrogance and intolerance, astounding versatility, being a law unto himself. His drugtaking is a means of escape from 'ordinary' reality, which he finds unbearably boring. The implication is that he exists on a 'higher' plane of consciousness than 'lesser mortals'. In that sense, the drugtaking is a corollary to his intellectual superiority: he is only happy when confronted

by deep, sensational problems, instead of trivial everyday ones.

Holmes's superiority in itself does not explain his rivals' consistent incompetence. It seems implausible that both detectives from the prestigious Scotland Yard and a medical doctor - a trained scientist - would be consistently unable to solve any of the crimes narrated. The dual aim of such distortion is to confirm Holmes's unassailable status as supreme detective, and the repression of a dialogical search for truth. This results in the valorization of monolithic rationalism.

No alternatives to the type of rationality propagated by Holmes are allowed. His arch enemy, Moriarty, his only equal amongst criminals, is in effect a mirror image of himself: pure intellect, but devoted to evil, not to the furtherance of justice. Holmes's brother, Mycroft, his only other equal amongst the secondary characters, is described in terms which calls to mind a contemporary database:

We will suppose that a Minister needs information as to a point which involves the Navy, India, Canada, and the bimetallic question, he could get his separate advices from various departments upon each, but only Mycroft can focus them all, and say offhand how each factor would affect the other... In that great brain of his everything is pigeonholed, and can be handed out in an instant (Conan Doyle 1985:703).

Thus, the Holmes narratives present rationality exclusively as a tool for problemsolving; implicitly define reason only in terms of cognitive rationality (cf Spinner 1987:29). The Enlightenment idea of reason as a vehicle for emancipation (cf Lyotard 1987:31) is not here at play. The knowledge attained by the detective does not enlighten, but confirms the privileged status of a particular type of rationality.

A characteristic of Holmes's approach is his unemotional detachment from the object of his investigation, viewed as a precondition for the emergence of truth. Towards the beginning of *A scandal in Bohemia*, for example, Watson states, 'All emotions...were abhorrent to his cold, precise, but admirably balanced mind' (Conan Doyle 1985:3). Further on, he continues,

He never spoke of the softer passions, save with a gibe and a sneer. They were admirable things for the observer...But for the trained reasoner to admit such intrusions into his own delicate and finely adjusted

temperament was to introduce a distracting factor which might throw a doubt upon all his mental results' (Conan Doyle 1985:3).

Holmes's own view is that, 'Detection is, or ought to be, an exact science, and should be treated in the same cold and unemotional manner' (Conan Doyle 1974:15). He takes a completely impersonal view of his clients; each should be seen as 'a mere unit, a factor in a problem' (Conan Doyle 1974:26). Objectivity, the scission between the knowing subject and the objects of knowledge underpins the deterministic worldview implicit to the traditional detective novel, that is, the assumption that phenomena can be explained clearly and with certainty in terms of cause and effect, of fixed laws and a stable, well-defined order (cf Morin 1988:420). It is a basic assumption of classical deterministic theories that objective reality is stable and wholly independent of the observer (see, by contrast, the discussion of quantum theory in 1.2).

Thus, determinism by implication divides the rational subject into diametrically opposite and completely separate halves: on the one hand, objective rationality and precision; on the other, the emotions and the instincts. The passions are viewed as superfluous and irrelevant to objective knowledge; as belonging to the 'lower realm'. Like certain biological processes, they are relegated to the secret, unmentionable corners of the rationalist subject's existence. In terms of classical rationalism, 'Ciò che è meramente fisico, materiale o semplicemente individuale o specifico, costituisce la bassa empiria' (Gargani 1979:19). ['that which is merely physical, material or simply individual or specific constitutes the lower realm'] Classical rationalism introduces a hierarchical division between mind and body, between rationality on the one hand and the emotions and instincts on the other.

Accordingly, in the Holmes narratives and other texts which advocate classical rationalism,

i riferimenti a ciò che è corporeo, all'orina,
 agli escrementi, alla fame, ai cattivi odori, e
 simili rappresentano da un lato una sconvenienza
 e dall'altro qualcosa di irrilevante...rappresentano
 ciò che è degradante volgare nella vita degli uomini...
 nulla offrono che possa contribuire alla comprensione
 di alcunché pertanto sono destinati a cadere al di
 fuori della stessa razionalità (Gargani 1979:19-20).

Indeed, Conan Doyle deals with crime without dwelling on its more disconcerting aspects. Virtually no information is supplied on the unsavoury aspects of Victorian society. Even though their presence is a *sine qua non*, the criminals in these narratives remain mere pretexts. Conan Doyle's

vision of society in the Holmes narratives is rather prudish and naive; crimes and criminals are viewed at a distance and appreciated for their entertainment potential.

Holmes's asexuality and misogyny tie in with this. He is not in the least influenced by the sexual, and is completely immune to the potentially disruptive charms of the feminine. Female sexuality and seduction are absent from the Holmes narratives. To some extent, this can be attributed to the prudishness of the Victorian era, but a more important motivation is the assumption that cognitive rationality should be safeguarded against the passions. The instinctual and the feminine are repressed because they might threaten the harmonious wholeness of reason, which postulates clinical 'objectivity', assumed to render the world transparently accessible to knowledge and understanding, as a precondition and guarantee for truthfulness.

Grounded in reason, Holmes's observations are presented as invariably accurate, thus demonstrating the certainty achieved only through scientificity. The reader is confronted with a supposedly scientific, that is, clinically objective method of detection, which constitutes a closed, self-sufficient system, immune to doubt. The status of Holmes's method is such that his theories are not viewed as mere statements about the world, but as reality itself; there is no distance between the theories and the objective world, but harmonious coincidence (cf Gargani 1979:9-10)). In the Holmes narratives, no explicit distinction is made between the detective's conjectures and statements of fact. Holmes's inferences are assumed to correspond to the 'true' state of affairs, to give direct access to knowledge of reality itself (see 1.6). Contrary to Popper, Holmes presents correspondence to the facts, or objective truth as quite attainable.

Accordingly, the narrator's admiration for Holmes is wholly unconditional, almost servile: 'Sufficient for me to share the sport and lend my humble help without distracting that intent brain with needless interruption' (Conan Doyle 1985:691). Holmes's inferences are often 'framed' by expressions of astonished admiration (Conan Doyle 1982:38; 1985:45, 58, 253, 260, 345, 346, 422, 470, 602-604). Watson and the other secondary characters' inability to follow his reasoning provide him with opportunities to set out his theories. The few instances of scepticism on the part of his audience do not call into question the validity of Holmes's methods or the accuracy of his findings, but merely provides further opportunities for him to demonstrate his intellectual superiority and confirm the incontrovertibility of his conclusions (cf Conan Doyle 1974:18-20; cf Hüllen 1987:43).

The authority of Holmes's inferences is grounded in premisses which are never subjected to serious questioning. It also derives from the attributes of the detective himself: he is presented as being of superior, even superlative intellect: 'the most perfect reasoning and observing machine' (Conan

Doyle 1985:3); 'extreme exactness and astuteness' (Conan Doyle 1985:36). Holmes himself refers to 'work' (that is, his processes of reasoning) 'of the utmost finesse and delicacy' (Conan Doyle 1985:634).

Frequently, an illustration of his abilities is provided in the early stages of a case. In *The red-headed league*, for example, the narrator endeavours 'after the fashion of my companion to read the indications which might be presented by' their client's 'dress or appearance' (Conan Doyle 1985:24). He concludes that the man can only be described as average, commonplace; that there is 'nothing remarkable' about him 'save his blazing red head, and the expression of extreme chagrin and discontent upon his features' (Conan Doyle 1985:24). Watson simply gives a description of external particulars.

The detective introduces his inferences in this story with a litote, thus diminishing the difficulty of the problem: 'Beyond the **obvious facts**...' (Conan Doyle 1985:25). According to Perelman (1971:291), the litote can be defined 'as a manner of expression which seems to weaken the thought'. By describing the facts as 'obvious', Holmes downplays his own abilities, and thus, highlights the discrepancy between his perspicacity and his rivals' lack of insight. He ironically suggests that one can assume the 'facts' to be obvious to all the members of his audience; the incompatibility of such an assumption with the actual situation casts ridicule upon his rivals (cf Perelman 1971:292).

Holmes's inferences in this story are based on abductive reasoning (big right hand - manual labour; shiny right cuff - 'considerable amount of writing'), that is, conjecture indicating a possibility which can be calculated in terms of probability (cf Harrowitz 1983:220); connotation ('arc and compass breastpin' - Freemasonry); and specialized factual knowledge (which enables him to establish the Chinese origin of the tattoo mark on his client's wrist).

The client's initial reaction to these inferences is one of astonishment. Once Holmes's reasoning has been explained to him, however, he responds with a litote: '...I see there was nothing in it after all' (Conan Doyle 1985:25). The client seems to be unaware that this remark reflects ironically on his own abilities: if there was 'nothing in it' in the first place, then why was he so slow to understand?

Holmes's ironical reference to his 'poor little reputation, such as it is' (Conan Doyle 1985:25) obliquely ridicules the obtuseness of his audience: it indicates an attitude of mock humility, an ironical overestimation of his audience's abilities. The whole passage in question is built upon binary oppositions, such as secondary vs primary levels of signifiers, or implied vs evident

meanings; intelligence vs obtuseness; penetration vs lack of penetration. The first element in each pair is linked to Holmes, which affirms the superior vs inferior relationship between him and the secondary characters.

The official policeman in this narrative, Athelney Jones, belittles Holmes, firstly, by implying that he is only capable of 'starting a chase', and secondly, by insinuating that he is inexperienced (Conan Doyle 1985:38). The reader knows both suggestions to be untrue, which discredits Jones. In addition, he uses the metaphor 'an old dog' in order to claim for himself the authority of extensive experience. A reader who made his acquaintance in *The sign of four*, however, would be aware of Jones's lack of success. The metaphor could therefore also be understood to mean: 'rich in experience of failure'. It acquires ironical overtones which make Jones appear ridiculous.

Jones describes Holmes's methods as 'just a little too theoretical and fantastic'. In fact, as the reader knows, Holmes repeatedly cautions against theorizing on the basis of insufficient data; his own inferences are based on observation and empirical knowledge. Moreover, in *The sign of four*, Jones provides ample evidence of his own tendency towards drawing hasty inferences or constructing a hypothesis and then trying to adapt the data to it, instead of the other way round, like Holmes. Jones finds the superdetective's conjectures 'fantastic' because he himself believes, in agreement with the commonsense theory of knowledge, that truth is self-evident and directly accessible through observation (cf Popper 1979:7, 60). Yet even in terms of this approach, Jones fails, as his observations are often inaccurate.

In an attempt to belittle Holmes, Jones inadvertently uses litote and euphemism, but merely succeeds in weakening his position:

You may place confidence in Mr. Holmes, sir...
 He has his own little methods, which are, if he won't
 mind my saying so, just a little too theoretical
 and fantastic, but he has the makings of a
 detective in him. It is not too much to say
 that once or twice...he has been more nearly
 correct than the official force (Conan Doyle 1985:38).

Throughout this section, Jones is made to look ridiculous by the discrepancy between his statements and the reader's knowledge about his achievements as compared to Holmes's. The contrast is presented in an obvious and unequivocal, perhaps even crude manner. As a result, Jones's inferiority to Holmes almost seems exaggerated.

Sometimes, Holmes's authority is emphasized by the secondary characters' silence. In *The adventure of the naval treaty*, for example, the detective's assertion that the letter received by the narrator was written by a woman is not questioned; although Holmes does not present any evidence for the statement, it is tacitly accepted as accurate. The lack of evidence is not mentioned, which reaffirms the narrator's almost servile acquiescence to Holmes's reasoning.

Elsewhere, the detective interrupts the client's narrative of the problem to indicate that an important clue has been identified: "That is of enormous importance", said Holmes' (Conan Doyle 1985:394). No further explanation is forthcoming, though the client evidently does not understand why that particular aspect of his narrative is viewed as significant. This again indicates that Holmes's abilities are beyond the comprehension of the other characters, and highlights the exclusiveness of his position as the 'one who knows'. He usually explains his reasoning, but the explanation is often deferred, in order to confirm his power and authority (cf Truzzi 1983:76).

The adventure of the naval treaty again offers a stark contrast between Holmes and the representative of the official police, who states categorically, "There was absolutely no clue of any kind" (Conan Doyle 1985:396), Holmes identifies seven clues (Conan Doyle 1985:399). Further on, he tells his client: "The principal difficulty in your case...lay in the fact of there being too much evidence (Conan Doyle 1985:413). Here, the relationship between Holmes and the official police again has the nature of a binary opposition between insight and the lack thereof. Holmes's status as the Master, as the 'one-who-knows' is evident. It is consistent with this that he should explain his reasoning in a 'didactic fashion' (Conan Doyle 1985:413).

The binary opposition initiated/uninitiated is also implicit to the relationship between Holmes and his clients. Thus, mystified by his inferences, James M Dodd, in *The adventure of the blanchéd soldier*, describes him as a 'wizard', and states hyperbolically: "You see everything" (Conan Doyle 1985:920-921). To the uninitiated Dodd, Holmes's reasoning seems an almost impenetrable mystery. The rigid line of demarcation between initiated and uninitiated in these narratives constitutes the foundation for a rigid and unshakeable power structure. The secondary characters (and, with them, the reader) can surrender themselves to the reassuring knowledge that order will be restored and transgression punished by a superior authority. Shaped in the image of classical reason and governed by fixed, universal laws (cf Morin 1988:420), the world presented by the traditional detective novel always returns to equilibrium.

Despite his references to a 'method', Holmes is not concerned with systematic theorizing or systembuilding. Without exception, the problems to be solved by him are of a practical nature. His task is not to uncover universal truths or ultimate meaning, but to find *ad hoc* explanations through

a 'reading' of the available data; to confirm the deterministic order of the world (cf Morin 1988:420; see also 1.2) through rational analysis. Accordingly, seemingly trivial particulars are shown to be meaningful, to fit into an overall pattern.

In the Holmes narratives, the intrusion of violence and disorder into the civilized status quo is neutralized through rational analysis and explanation. The potentially disruptive energy of sexuality is not allowed near the surface. It does not even feature prominently as a motive for crime; the true crime of passion is alien to Holmes's world. Even though the only real challenge to his authority is posed by a woman (Irene Adler, in *A scandal in Bohemia*), she defeats him, not by exploiting her feminine charms, but simply by outwitting him. Thus, the supremacy of intellect remains unscathed.

Even the detective's drugtaking is presented as the counterpart to his mental exertions. It neither results from a biological urge, nor implies a search for physical sensations. It is merely a cure for mental *ennui*. The needs and functions of the body are never allowed to determine Holmes's actions and thought processes. Thus, his position as the representative of a 'pure' rationality which operates within a strict mind-body dualism is entrenched.

2.2.1 Holmes's successors

Holmes established a pattern followed, albeit with numerous variations in detail, by many other literary detectives. Perhaps the most famous of his successors is Agatha Christie's superdetective, Hercule Poirot.

The discussion of Poirot and Leroux's *Rouletabille* demonstrates that the particular model of rationality propagated by the Holmes narratives is an important element of the philosophy implicit to the traditional detective novel.

2.2.2 Poirot

Like Holmes, Poirot is a bachelor, seems to be asexual, and is rather eccentric. His un-Englishness in itself seems to mark him as an oddity. As a private investigator, he is not restricted by official rules and regulations, and is therefore at liberty to proceed in an unconventional manner. The private investigators' ability to cut through to the heart of a problem seems to be linked to their unofficial position, just as their rivals' official status carries the connotation of conscientiously

plodding obtuseness. Thus, officialdom is presented as incapable of effective problemsolving.

There are only minor variations in the basic pattern from one Poirot narrative to the other. The resemblances with Holmes can therefore be illustrated through a cursory analysis of a single text, chosen at random, namely, *The Mystery of the Blue Train* (Christie 1981).

Like Holmes, Poirot has the ability to intimidate his audience. Commissary Caux's manner, for example, changes from peremptory to nervous to subservient when confronted by the master detective:

'...he said peremptorily'

'...the Commissary stammered'

'...replied the Commissary promptly' (Christie 1981:71).

It is taken for granted that Poirot's powers of detection are greatly superior to the official police's. His client's secretary, Knighton recounts the anecdote of Lord and Lady Clanracon who, instead of taking his advice to make use of Poirot's services, 'pinned their faith to Scotland Yard'. Asked what happened to the jewels which were stolen from them, Knighton replies, 'drily,' that they 'were never recovered' (Christie 1981:128 - emphasis mine): the detective's intellectual superiority is accepted as a given, with no need for further comment.

The (false?) modesty with which Poirot downplays his achievements merely emphasizes his superior status: "'Order, method, being prepared for eventualities beforehand - that is all there is to it'" (Christie 1981:134). The reader, aware of the official police's inability to solve the crime, is made to believe that success could have been achieved quite easily by acting in accordance with certain simple and well-known principles. Like Holmes, Poirot uses a pretense of modesty to underline his rivals' incompetence.

Poirot's display of modesty and emphasis on the simplicity of his method apparently demystifies cognitive rationality. The reader is aware, however, that its effective use is restricted almost exclusively to the detective. As in the Holmes narratives, access to knowledge and understanding is limited to an exceptional individual. The rationality he advocates remains unattainable and incomprehensible for the other characters.

In this context, it is to be expected that the detective's feats of ratiocination would be met with astonishment and admiration (cf for example Christie 1981:143, 209). It also is not surprising that the secondary characters' questions do not cast any doubt upon the accuracy of his inferences, but merely justify his explanations.

While Holmes occasionally needs the physical assistance of other characters, Poirot is aided in his reasoning by members of his audience. Thus, for example, Lenox states, "'But I did help, Monsieur Poirot - at any rate I did help'", to which Poirot replies, "'Yes, Mademoiselle. It was you who gave me the first inkling of the truth...'" (Christie 1981:219). This, however, does not detract from his achievements; the secondary characters do not fully grasp the implications of the leads they provide. In this respect, they resemble Adso in Eco's *Nome della rosa* (see 3.2).

Christie's detective states repeatedly that he aims to solve the case by arranging the facts with order and precision (Christie 1981:95, 100). This recalls Spinner's notion of an additive style of cognition (see 1.3). However, Poirot's statements in this regard are somewhat misleading. He does not simply arrange the 'facts' in chronological order on the assumption that this will yield a solution. Rather, he constructs a hypothesis on the basis of the available data and arranges the 'facts' accordingly (cf Christie 1981:95). The hypothesis, and therefore also the hypothesized sequence of events are subject to modification; both are falsifiable (cf Popper 1974:14-15).

Poirot tests his hypotheses, amongst others, against his knowledge of previous cases. For example, one of the prime suspects is the 'Comte de la Roche', a notorious jewel thief, with whom the victim had an affair. The possibility that the 'Comte de la Roche' wanted to steal her jewels and replace them with fakes 'accords' with the criminal's personality (cf Christie 1981:144). "'Robbery with violence and murder'", however, "'does not harmonise with the personality of the of the Comte de la Roche'" (Christie 1981:143). Therefore, it is improbable that the victim was murdered by the Comte, despite all indications to this effect.

The other prime suspect is the victim's husband, Derek Kettering. He had a strong financial motive, and the opportunity to kill her; they were also estranged. Before his innocence could be accepted, a more likely suspect would have to be found, or the circumstantial evidence of his guilt refuted. In other words, the plausible hypothesis that he is the murderer would have to be falsified by a better alternative.

Both requirements are met. That Kettering entered the victim's compartment is not in dispute. One of the secondary characters, however, points out that this does not necessarily confirm his guilt: the murderer might have boarded the train, killed the victim, stolen the rubies, and dropped off; the victim could have been alive when Kettering left the compartment (Christie 1981:173). The evidence that a cigarette-case found on the scene of the crime, possibly a gift from his wife, belongs to him is considered dubious in view of their estrangement. This casts doubt upon the credibility of the witness who offered the evidence, the victim's maid (Christie 1981:210). Poirot suggests that the initials on the case are those of his client's secretary, Knighton, not Kettering's,

and that Knighton and the victim's maid may be accomplices (Christie 1981:211).

One of the witnesses tells Poirot that the jewels have been sold by a notorious criminal, the 'Marquis', and that he has a female accomplice (Christie 1981:179). Poirot finds many similarities between the 'Marquis' and Knighton (Christie 1981:215), which point to Knighton as the culprit.

It is not clear how or why Poirot comes to suspect the maid of in fact being the actress 'Kitty Kidd'. To some extent, this undermines the idea, commonly accepted in the traditional detective novel, that the superdetective arrives at the solution through a process of flawless reasoning. However, this is not regarded as a weakness, and does not cast any doubt on his conclusions. In any case, Poirot learns that the actress became involved with a certain Marquis (Christie 1981:196), and this rather vague piece of evidence, viewed together with the other facts and theories, suggests that she may indeed be Knighton's accomplice.

Having decided that the maid's evidence could be false, Poirot formulates possible alternatives to the obvious solution, namely, that Kettering killed his wife for financial gain. Much of his reasoning in this regard is purely speculative, based upon tenuous factual evidence. Yet his imaginative guesswork results in a neat solution. In this instance, contrary to Popper, but in agreement with Holmes, conjectures result in the attainment of objective truth (cf 1.5).

It is typical of the closed world of Christie's texts that the number of possible solutions is highly restricted, and that the initials on the cigarette case are assumed to refer either to Knighton or to Kettering. As a result, Poirot's guesses are not submitted to extensive testing, and can be corroborated quite easily. The presence of the cigarette case on the scene of the crime is assumed to be necessarily relevant to the case, not accidental, and the number of possible explanations for this presence assumed to be very limited. The analyses in chapter 5 will show that this would be unthinkable in Lem's open, random universe, which can only be approximately understood through a potentially infinite proliferation of hypotheses.

The restriction of possibilities and lack of rigorous testing are typical of the traditional detective novel:

Nei romanzi polizieschi, da Conan Doyle a Rex Stout, queste prove non sono necessarie. Il detective immagina la soluzione e la 'dice' come se fosse la verità: e subito Watson, l'assassino presente o qualcun altro verificano l'ipotesi...E il detective è sicuro di avere indovinato. Nei romanzi polizieschi

l'autore (...) garantisce la corrispondenza tra il Mondo Possibile immaginato dal detective e il Mondo Reale (Eco 1985:169-170).

In Christie's text, as in the Holmes narratives, the uncontested (and apparently uncontested) correspondence between the detective's hypotheses and the true state of affairs entrenches his status and the presumed supremacy of the rationality he advocates and represents. The knowing subject is in complete harmony with the object of knowledge, and the status of cognitive rationality as foundation for objective knowledge and truthful statements about the world is presented as beyond question.

2.2.3 Rouletabille

Gaston Leroux's *Le mystère de la chambre jaune* (1907; 1984) is an example of a sub-subgenre within the detective novel subgenre, the locked-room mystery, which proposes 'the puzzle of a dead body found in a room which seems to be effectively sealed' (Symons 1985:136). Apart from this, the presentation of the detective and his findings more or less follow the pattern adopted by Christie and Conan Doyle.

Like his colleagues, the private investigator in Leroux's novel, *Rouletabille* always seems to be more than a few steps ahead of everybody else. When the official police is still completely at a loss, he asserts: "'Mais j'ai déjà mon idée faite sur le revolver, par exemple...'" (Leroux 1984:30). ['but I've already formed an idea about the revolver, for example'] The narrator's exasperation with such cleverness is expressed through the exclamation 'mon Dieu', while his next response is graduated, thus emphasizing his incomprehension of the detective's reasoning: "'Je ne comprends plus...ou mieux je n'ai jamais compris'" (Leroux 1984:30). ['my God...I don't understand any more...or rather, I've never understood']

Rouletabille is compared to a hunting animal:

Il resta à quatre pattes. En vérité, je ne pouvais mieux le comparer dans ma pensée qu'à une admirable bête de chasse sur la piste de quelque surprenant gibier...(Leroux 1984:99-100).

The comparison suggests that, in addition to his powers of reasoning, the detective is endowed with intuition. Thus, he is able to 'smell' the culprit and sense a solution without relying exclusively on logical processes and observable data; deliberately to jump to a good hypothesis and be

convinced of its validity even though the supporting evidence may be quite tenuous. The comparison stresses the finely tuned functionality of the hunting animal-detective, and optimistically suggests that cognitive rationality is perfectly adapted to problemsolving and understanding objective reality.

The detective is endowed with an emblematic quality which sets him apart from his rivals, as the archetypal hunting machine, perfectly adapted to this purpose. As a result, he is able to see and sense aspects of the problem others cannot:

faisant le tour de tout, de tout ce que nous voyions,
ce qui était peu de chose, et de tout ce que nous ne
voyions pas et qui était, paraît-il, immense
(Leroux 1984:100).

Nowhere in Leroux's text is it suggested that the co-presence in Rouletabille of animal-like instinct and rationality could result in ambivalence. This is partly because the 'dark', 'wild' transgressive aspects of the instinctual are simply glossed over or suppressed. Instead, instinct and intuition are presented as the handmaidens of cognitive rationality. Thus, the illusion of a 'pure', objective rationality linked to the mind-body dualism postulated by Cartesian rationalism and to a deterministic worldview is maintained, as in the Holmes narratives (cf Descartes 1953:330-332; Morin 1988:420; see also 1.2).

Rouletabille is often questioned by the secondary characters, not critically, but because they assume he knows the answers. The investigating magistrate, for example, interposes questions between Rouletabille's inferences: "Comment le savez-vous?" And: "Encore une fois, comment le savez-vous?" (Leroux 1984:45). ['how do you know that? I repeat, how do you know that?'] As in the Holmes narratives, these questions justify the detective's replies, performing the dual function of advancing the narrative and providing opportunities for him to display his powers of reasoning.

Rouletabille's task, as dictated by subgenre conventions, is to clarify, to illuminate, to re-establish order. Yet his inferences are part of the enigma confronting both the reader and the secondary characters, in that his reasoning appears to be fragmented and obscure, 'jusqu'au moment où, en quelques phrases rapides et nettes, il me livrait le fil de sa pensée' (Leroux 1984:51). ['until the moment when, in a few swift, crisp sentences, he confided to me his line of thought'] In this respect, he resembles Holmes, who often confirms his power and authority by deferring an explanation of his reasoning to a dumbfounded audience.

Rouletabille performs two parallel explanatory processes, namely, solving the crime and clarifying his reasoning. This suggests that cognitive rationality can only be explained in terms of itself, by the initiated; it cannot be explained from the outside. Moreover, no events are introduced which lie beyond its grasp. Within the framework of the traditional detective novel, it is presented as self-legitimizing and all-inclusive.

Rouletabille seeks to ground his investigation in the deterministic order assumed to be inherent to objective reality. He aims to establish a correspondence between this order, accepted as a natural given and his own thought processes:

Il s'agit d'être logique, mais logique, entendez-moi
 bien, comme le bon Dieu a été logique quand il a dit:
 2 + 2 = 4!...IL S'AGIT DE PRENDRE LA RAISON PAR LE BON
 BOUT! (Leroux 1984:105).

This approach is criticized by the official detective, Larson, who turns out to be the criminal. His criticism is analogous to that levelled at Holmes by the official police, namely, that more can be achieved through experience and observation than through mere ratiocination: "vous raisonnez trop...Vous ne vous laissez pas assez conduire par votre observation" (Leroux 1984:129). ['you reason too much...you don't allow yourself to be guided by your observations often enough'] Lanson and Holmes's other critics subscribe to a 'commonsense theory of knowledge', that is, 'the mistaken theory that we acquire knowledge about the world by opening our eyes and looking at it, or, more generally, by observation' (Popper 1979:34).

The mistaken assumption of the commonsense approach is that knowledge can be acquired through the accumulation of observations. This implies that observation is free from theoretical and other presuppositions, and that the world is transparent and directly accessible to understanding. Instead, the superdetectives exemplify the idea that observation is always underpinned by a particular analytical approach and linked to specific hypotheses: 'in order to observe, we must have in mind a definite question which we might be able to decide by observation' (Popper 1979:259).

As a result of their commonsense approach, the private investigator's rivals from Lestrade to Lanson tend to opt for obvious solutions; they fail to uncover the patterns underlying observable data and do not advance beyond random observations. Private investigators of the 'Homes tradition', however, seem to support the idea that objective truth is not self-evident but should be sought through conjectures; yet by contrast to Popper's theory of conjectural knowledge (see 1.5) and the texts discussed in chapters 4 and 5, they seem to believe that such conjectures can be

positively confirmed, and thus become statements of fact.

Larsan commits another error frequent amongst Holmes's rivals, namely, to form a hypothesis on the basis of certain data, and then to try fitting all further data into the hypothesis, instead of modifying it where necessary (cf Leroux 1984:130-131). Thus, the dogmatic insistence on 'objective' observation results in erroneous reasoning based on disconnected observations and preconceived notions. Rouletabille pinpoints the problem when he accuses Larsan of "plier en deux cette logique aux nécessités de leurs conceptions" (Leroux 1984:131). ['twisting this logic to suit their ideas'] According to him, Larsan's system "consiste à partir de l'idée que l'on se fait de l'assassin pour arriver aux preuves dont on a besoin" (Leroux 1984:131). ['consists in starting from one's idea about the murderer to arrive at the evidence which you need']

By contrast, Rouletabille, like Holmes and Poirot, approaches every case on the basis of certain methodological considerations. This illustrates the principle that observation is always theory-impregnated (cf Popper 1979:258-260). Rouletabille also forms a certain idea of the criminal, but this is tested against the evidence and modified if necessary.

Larsan views his theories as verified by incontrovertible phenomenic evidence. The correct explanation, he believes, is the one compatible with how phenomena present themselves to the observer. If the relevant phenomena seem only to allow the possibility of a particular sequence of events, then the correct explanation would be a description of that sequence (cf Leroux 1984:181). Through a process of elimination, Larsan reaches the conclusion that the murderer was allowed to escape by the victim's father. This seems to be the only rational explanation. The alleged physical impossibility of an alternative, however, is already derived from a hypothesis regarding the criminal's movements. Thus, the inferences of Larsan, the advocate of 'a-theoretical' objectivity are largely determined by certain preconceived notions.

Larsan presents his theory as incontrovertible, on the grounds that it is the only possibility allowed by the observable data, yet its validity is in fact dependent upon the corroboration of a further hypothesis: "Ici, nous devons admettre que M. Stangerson avait de puissantes raisons pour ne pas arrêter ou ne pas faire arrêter l'assassin..." (Leroux 1984:182). [here, we have to assume that Mr Stangerson had very good reasons for not arresting the criminal or having him arrested'] This theory lacks simplicity in that it introduces new unknown elements to the case, and thereby complicates the problem. The eventual refutation of Larsan's explanation casts an ironical perspective on the narrator's admiring reference to the detective's 'impitoyable logique' (Leroux 1984:183). ['implacable logic']

Ultimately, all these elements merely highlight Rouletabille's superiority. By contrast to Larsan's, his hypotheses have the virtue of simplicity: "Je crois cette hypothèse juste et, dans tous les cas, elle est tout à fait simple (Leroux 1984:215). [I believe this is the right hypothesis, and in any event, it is quite simple'] Even if they did not have greater explanatory power than, and did not falsify competing alternatives, they would have to be preferred on the grounds that they achieve maximum explanatory power and suggestiveness with a lesser number of premisses and without the introduction of further unknowns or variables (cf Chaitin 1975:48; Kahn 1990:1856). Whereas Holmes's rivals is usually discredited, the narrator's positive evaluation of Larsan's reasoning means that Rouletabille's victory is not simply a given of the *a priori* acceptance of a particular theory of knowledge, but is to some extent the outcome of the struggle between alternative hypotheses which are subjected to empirical testing (cf 1.5).

Unlike Larsan, the private investigator does not pretend to be guided exclusively by observable data; his method is not merely based upon observation: "Moi aussi, je me suis penché sur les "traces sensibles", mais pour leur demander uniquement d'entrer dans le cercle qu'avait dessiné ma raison" (Leroux 1984:268). [As for myself, I've also studied the observable tracks, but only to demand that they should enter the circle sketched by my reason'] In other words, the observable data are integrated into an implicit theoretical framework which determines how they should be assessed.

Interestingly, Rouletabille rejects Holmes's methods: "Sherlock Holmes te fera faire des bêtises, des bêtises de raisonnement plus énormes que celles qu'on lit dans les livres..." (Leroux 1984:268). [...will make you commit stupidities, stupidities of reasoning worse than those one reads about in books'] This is based upon a misinterpretation. Firstly, Holmes's inferences are not exclusively the result of observation, and secondly, in the kind of problemsolving performed by the detective, there is a continuous interaction between observation and conjecture (cf Popper 1979:259-260 and 1.5).

Once Rouletabille has formed a hypothesis, he starts looking for observable data which would corroborate it. This does not mean that he would distort or overlook evidence to protect it, but does imply selective observation. He explicitly outlines his approach:

...je ne demande pas aux signes extérieurs de
m'apprendre la vérité; je leur demande simplement
de ne pas aller contre la vérité que m'a désignée
le bon bout de ma raison (Leroux 1984:402).

This confirms the principle that observation is directed by hypotheses. Rouletabille's approach also

agrees with the rationalist notion of reason as the source of truth. What Rouletabille here calls 'la vérité', 'truth', in fact amounts to a working hypothesis. As it is judged to be plausible, data irrelevant to its corroboration can be left out of consideration, bearing in mind that a hypothesis is corroborated through attempts to falsify it. Its plausibility is determined by *prima facie* evidence and criteria such as internal coherence and simplicity. It only becomes acceptable through corroboration. Thus, Rouletabille's theory concerning the murderer's identity, plausible in the light of the available data, only becomes acceptable once it has been corroborated by the discovery of his glasses on the scene of the crime, by information on his past history (Leroux 1984:389, 401, 436-443), and by the refutation of Larsan's alternative hypotheses.

Despite Rouletabille's insistence on reason and rejection of observation as exclusive source of truthful knowledge, he does not adopt an idealist position. Truth for him is not an *a priori* given; it cannot be accepted as such without empirical corroboration. However, he seems to assume that it is grounded in reason, implicitly defined as the ability to construct an accurate representation of the facts (cf Heidegger 1958:132); this recalls Tarski's objective truth as correspondence to the facts (cf Popper 1979:59-69, 314-318). It is clear that he thinks in terms of a monolithic *Vernunft*, and views knowledge as rational in so far as it can be justified through verifiable evidence (cf Popper 1979:127). Thus, Rouletabille, like Holmes and Poirot, seems to regard objective truth as attainable, not merely as a regulative principle. In this respect, and in the concomitant assumption that conjectures can be positively confirmed, they contradict Popper's theory of conjectural knowledge, although they agree with it in accepting that knowledge is produced through conjectures (cf 1.5).

Inasmuch as they suggest that the struggle between competing hypotheses can result in a decisive victory for a single, positively confirmed hypothesis, the texts analysed in this chapter stand in complete opposition both to pluralist fallibilism (see 1.5) and indeterminism (see 1.2). This implies that a set of events is determined by its first element, and that its further trajectory will be stable and predictable (cf Cambel 1993:6). It does not matter that the detective starts with the last element, the murder, and finds the others out of sequence, as each has a fixed place in the set, like the pieces in a jigsaw puzzle. This kind of determinism is demolished by the multidetermination and randomness presented in the texts by Gadda and Lem (chapters 4 and 5).

CHAPTER 3

Reasonableness and conjectural knowledge

3.0 Introduction

None of the texts discussed in the previous chapter explicitly acknowledges that the detective's inferences are based upon interpretation. Yet in all, the main components of the investigation are observation and interrogation. Observation of the scene of the crime and the victim lead to the identification of clues. Observable data are classified as either useful or marginal, which presupposes a body of knowledge in terms of which they are assessed; and viewed as providing certain indications, which implies a framework of reference within which they are interpreted. The interrogation of witnesses enables the detective to reconstruct the crime and obtain information on the victim, the circumstances of his death (in a murder case), and the suspects. The information obtained through observation and interrogation is arranged into a narrative, the story of the crime (cf Todorov 1971:58-59). The story of the crime, often told by the detective at the end of his investigation, thus depends upon a process of rewriting and interpretation.

Interpretation is inevitably provisional and open to criticism, especially within a pluralist-fallibilist framework. However, the traditional literary detective's observations and inferences are presented as almost invariably accurate. His construction of the story of the crime is presented as completely reliable and indicative of his almost infallible ability to sort through the evidence and find the right solution.

Thus, the interpretative or conjectural aspect of his investigation is downplayed. Instead, the correspondence of the detective's observations and explanations with the facts is positively confirmed. There is a perfect harmony between the detective's intellect and objective truth. For him, and for him alone, the world is transparently knowable.

By contrast, Umberto Eco's *Il nome della rosa* (1980; *The name of the rose*, 1983) explicitly presents the detective as an interpreter, and the objective world as a system of signs. Within this framework, the findings of the investigation are necessarily open to criticism and objective truth is unattainable. The world as a network of signs can be rendered meaningful and intelligible through interpretation, but cannot be known and understood with certainty.

Similarly, the historical information presented through the text is not made transparent and easily

assimilable. The world of the text is meant to offer a certain resistance to the reader, as indicated by Eco's assertion that, 'se qualcuno volesse entrare nell'abbazia e viverci sette giorni, doveva accettarne il ritmo'; to which he adds: 'e a chi non piace peggio per lui' (Eco 1986:520). ['if somebody wanted to enter the abbey and live there for seven days, he had to accept its rhythm...bad luck for him']

Nevertheless, as will be shown in the subsequent analysis, Eco's text does not discard the notion that truthful statements about the world can be produced through rational analysis. It constitutes a critique of monism and dogmatism, but does not reject the assumption that objective reality is inherently orderly and coherent. In this sense, it continues the rationalist tradition. In its emphasis on knowledge as the result of interpretation, it is closely related to the fallibilist pluralism outlined in 1.5, yet the fact that Eco's detective arrives at a clearcut solution, even if he does not achieve a decisive victory, links him to the traditional detectives of the previous chapter. He seems to occupy an intermediary position between the optimistic rationalism of Holmes and his successors and the radical indeterminism of the world inhabited by the detectives of Gadda and Lem.

3.1 A detective novel (of sorts)

Il nome della rosa follows the basic format of the detective novel: a series of crimes is committed, it is investigated systematically by one William of Baskerville and his sidekick, Adso, various leads are followed up, and ultimately, the culprit is identified.

The story is set in the Middle Ages, and contains lengthy discussions and overviews of particular aspects of Mediaeval church history. To some extent, it can therefore be described as a historical novel. It does not merely use the Middle Ages as a quaint but casual background; the story is virtually unimaginable outside this historical period, which reflects the tension between monism or dogmatism and pluralism central to the 'argument' proposed by the text. On the one hand, there is the Church, with immense power and the authority to dictate how the Word of God should be understood; on the other, there is a proliferation of religious movements and heresies. Through his pluralist tolerance and moderate rationalism, the detective acts as mediator between these extremes. He proposes to resolve the conflict between opposing viewpoints through dialogue and critical questioning, regulated by a 'soft' rationality (cf section on reasonableness, 3.3).

The name 'William of Baskerville', an obvious allusion to Conan Doyle's *The hound of the Baskervilles*, links William to the archetypal literary detective. Holmes and William share certain habits and attributes: William also seems to have an inexhaustible fund of energy 'when a burst

of activity overtook him' (Eco 1986:24; 1984:16); he, too, experiences 'moments of inertia', when the narrator almost suspects 'he was in the power of some vegetal substance capable of producing visions' (Eco 1986:24; 1984:16), that is, a drug; his habit of chewing a certain plant calls to mind Holmes's pipe-smoking (Eco 1986:24; 1984:16). Adso, William's secretary, is in much the same position as Watson: he is the chronicler of the detective's achievements, but is almost always unable to follow his thought processes. The assistance he offers to the investigator is erratic and sometimes unintentional. Like Watson, Adso is involved in the story both as narrator and secondary character.

Together with Eco's self-conscious use of the detective novel framework, these intertextual connections exemplify the idea, often viewed as typical of post-modern narratives, that texts feed on other texts, that they can be made up of quotations (cf Eco 1986:522, 528).

Following the pattern established in the Holmes narratives, William demonstrates his superior abilities in the opening sequences of the narrative: firstly, by his inferences concerning the Abbot's horse (Eco 1986:30-33; 1984:22-24); secondly, by his inferences concerning the first of the crimes (Eco 1984:40-41; 1984:32-33).

These sequences are preceded by a preface ('Naturalmente, un manoscritto') and a *Prologo*. This is an extension of the structure of the conventional detective novel, which usually either opens with a brief introduction in which the main characters are presented, or begins *in medias res*. The preface underlines the textuality of the novelistic world: the novel is presented as the translation of a translation of an edition of a 14th-century manuscript, of which he is unable to verify the existence.

The technique of *extension*, that is, the addition of elements not contained in the conventional framework of the subgenre modified (cf Genette 1982:298), is used repeatedly throughout the text. The sequence in which the problem is summarized, is augmented through a discussion on the possibility of diabolic influences on criminals' actions (Eco 1986:38-39; 1984:30-31). Theological discussions and historical digressions abound, some necessary for an understanding of the culprit's actions, others only marginally relevant or even irrelevant to the detective story element. The cumulative effect of digressions, discussions and learned quotations slows the reader down to such an extent that the buildup of tension which is part of textual foreplay can be dissipated. By contrast, the traditional detective novel follows a linear progression, excluding all elements not directly relevant to the investigation.

A further deviation from subgenre conventions is the displacement of interest in the investigation

narrative. The focal point of interest seems to be the mystery surrounding the library, not the identification of the culprit. This is already evident in William's first conversation with the Abbot (Eco 1986:43-46; 1984:35-38). He does not follow the usual practice of directly examining the victim's body and the scene of the crime in order to look for clues - the body of the victim has, in any case, already been removed, and cannot be examined. William's first inferences are simply based upon the Abbot's statement of the problem (Eco 1986:41; 1984:33). At a later stage, having observed the scene of the crime from a distance, he makes further inferences (Eco 1986:99; 1984:91-92). Apart from his conversation with the Abbot, William only carries out a single interrogation related to the first crime (Eco 1986:29-105; 1984:21-97), and even that is limited to a few questions put to Severino, the herbalist (Eco 1986:76; 1984:69-69). The rest of his conversation with Severino is taken up with matters not directly related to the investigation. During his first visit to the scriptorium, moreover, William does not interrogate any of the potential suspects, but merely examines the victim's workspace (Eco 1986:84-85; 1984:76-78). The main point of interest in this sequence, however, is the discussion with Jorge, the culprit (Eco 1986:86-90; 1984:79-82). This draws attention to Jorge's anathema against laughter, which eventually turns out to be a useful clue, though at the time, it is not identified as such (cf Hüllen 1987:43).

The techniques of extension and displacement result in intramodal transmodalisation: the augmentation of the standard detective novel framework through historical digressions and discussions result in the slowing down of both narrative rhythm and reading pace, which replaces the taut linear progression usual to typical examples of the subgenre (cf Genette 1982:332).

Il nome della rosa constitutes an amplification of the detective novel framework, in that it is not confined to the subgenre's usual thematic range and deviates from its preference for simple everyday language which focuses attention on the storyline (cf Genette 1982:306). Thus, the framework is made to accommodate a sort of *conte philosophique* (cf de Beaumarchais 1984:530) expanded into a quasi-historical novel.

Implicit to *Il nome della rosa* as a whole is a process of transvalorisation in respect of the traditional detective novel, indicated by the shift from monist rationalism represented by an arrogant superdetective to pluralist rationality represented by a liberally tolerant detective who self-consciously presents his explanations as conjectures (cf Genette 1982:418). The shift is indicated by William's tolerance for a plurality of viewpoints, insistence on critical questioning and debate, and rejection of dogmatism. Objective truth, he implies, cannot be proclaimed as a natural given, but has to be sought through conjecture and critical questioning.

Linked to this is an element of ambiguity not typically found in the traditional detective novel. Thus,

for example, the culprit, Jorge, directly causes only one of the deaths, that of the Abbot himself. Each of the other victims in a way contributes to his own downfall, and is therefore jointly responsible for his own death. Another case in point is the trial at which Salvatore and the narrator's casual lover are condemned to death (Eco 1986:373-393; 1984:369-389). The reader knows the girl to be innocent, and is aware that she and Salvatore are killed for political motives. The inquisitor, Bernardo Gui, who insists that they be put to death, is therefore guilty of legalized murder, yet there is no possibility that he would be punished. Thus, the representative of law and order, driven by the "insane passion for the truth" (Eco 1986:494; 1984:491), becomes an instrument of repression, not of truth and justice. As in the traditional detective novel, his role is to defend the existing order against the forces which threaten to disrupt it; but here, that function is identified with obscurantism, mystification and intolerance, not with equilibrium and harmony. Unlike the traditional detective, William does not defend the *status quo*, but challenges orthodoxy and political expediency. Through his emphasis on autonomous critical thinking, he reflects the Enlightenment ideal of rationality.

3.2 William's investigative approach

William professes an admiration for Roger Bacon, who believed that, 'Reasoning may guide the mind to a right conclusion but it is only confirmation by experience which removes doubt' (Copleston 1965:446). In other words, truth is neither an *a priori* given, nor can it be captured by systems of thought. William states that one should find a hypothesis "nella testa", that is, one should invent it and then see whether it is corroborated by the available data (Eco 1986:171; 1984:166). This is standard scientific procedure: the empirical scientist, having made a number of observations and collected a certain amount of data, formulates a hypothesis which is then tested against further data and observations. If it can be falsified, it has to be modified, or an alternative hypothesis has to be found (Popper 1979:346).

William adopts a 'semiotic' view of truth, in that he views it as inseparable from interpretation, as the result of a 'reading' of observable phenomena, not as a given: "I have never doubted the truth of signs, Adso; they are the only things man has with which to orient himself in the world" (Eco 1986:495; 1984:492). Adso states that his master 'He not only knew how to read the great book of nature, but also knew the way monks read the books of Scripture, and how they thought through them' (Eco 1986:32-33; 1984:24-25). William is able to decipher and interpret the 'book of nature', viewed not only as a reflection of divine omnipotence, but also as a text, a network of signifiers.

This is exemplified by the episode of the Abbot's horse (Eco 1986:30-32; 1984:22-24). The observation of the horse's hoofprints, of some broken twigs and of long black hairs in a blackberry bush enables William to infer the horse's character and temperament, as well as the direction in which it went. The inference can be viewed as based upon previous observations of a number of fast, intelligent horses with a steady gait, which left hoofprints similar to these. From this, he infers that other horses which leave such hoofprints are probably similar in character and temperament. As the Abbot's horse's hoofprints are similar, it is assumed to be a member of this 'class'. William also guesses and describes the horse's appearance: he observes that the cellarer in person is pursuing it, from which he infers that it must be the finest horse in the stables (Eco 1986:32; 1984:24). Therefore, it is likely that the horse will conform to the ideal of equine beauty as defined by Isidore of Seville. William knows the definition by heart, and is therefore able to give an accurate description of the Abbot's horse. He correctly guesses that the horse's name is 'Brunello', one of the most popular names for a horse at the time.

The second and third inferences are the results of informed guesswork, not of flawless logic. The third is a calculated gamble, based purely on statistics; William might just as well have been proved wrong. William's hypotheses are falsifiable; the possibility of better alternatives is not excluded. Like Holmes, he proposes conjectures which account for the available data, advances hypotheses in terms of which the facts can be adequately explained (cf Rehder 1983:267, 274).

Like the investigating team in Lem's *Chain of chance* (see 5.3, 5.4), William looks for a pattern which would lend direction to the investigation. He becomes convinced that "the series of crimes followed the sequence of the seven trumpets of the Apocalypse" (Eco 1986:473; 1984:469). This points to Jorge, who is even more obsessed with the Book of John than the other monks, and who acquired a number of Spanish Apocalypses for the library (Eco 1986:474; 1984:470). William learns this through a reference by one of the other monks to a "mysterious enemy who had been sent to seek books in Silos" and returned prematurely to the "realm of darkness" (Eco 1986:474; 1984:470). Silos is near Jorge's birthplace, Burgos; the 'realm of darkness' is a metaphor for his blindness. It could also be interpreted, amongst others, as a metaphor for death, but the available evidence implicates Jorge, and thus supports the interpretation preferred by William. The hypothesis that Jorge was sent to Silos is corroborated by the "series of acquisitions, all of them Spanish Apocalypses" (Eco 1986:474; 1984:470), and all bought during the period when Jorge succeeded or was about to succeed Raul of Rimini as librarian. The existence of a mysterious librarian between Raul and Robert of Bobbio is indicated by the changes of handwriting in the library catalogue, which was compiled by the successive librarians (Eco 1986:443-444; 1984:439-441). Alinardo hoped to succeed Raul, therefore his reference to a mysterious rival who became blind points to Jorge.

Faced with the enigma of the crimes, William produces a tentative, inadequate solution or working hypothesis (cf Popper 1979:260), namely, that the crimes followed the pattern of the seven trumpets of the Apocalypse. The hypothesis is suggested by a remark muttered by Alinardo: "Too many dead...But it was written in the book of the apostle" (Eco 1986:257; 1984:255). Even when he no longer believes in this theory, having found a better alternative and sufficient other evidence implicating Jorge, William insists on closely watching the stables, where he expected the "sound of the sixth trumpet of the Apocalypse" (Eco 1986:474; 1984:470). He does not simply discard the first hypothesis, but allows for the possibility that it might yet turn out to be preferable to the later alternative. In the stables, Adso casually recalls something Salvatore, the cellarer said about one of the horses, and thus, quite by accident provides the key to the riddle of gaining access to the *finis Africae*, the most secret part of the library (Eco 1986:460; 1984:457). By accident, the first, inadequate hypothesis indirectly provides the key to the corroboration of its alternative. This illustrates the principle that even an inadequate hypothesis should not simply be discarded, as it could yet turn out to be productive (cf Naess 1972:88-90).

Various events and his own erudition enable William to guess that a text, the 'second book' of Aristotle's *Poetics* lies at the heart of the enigma.

On the desk of one of the victims, Venanzio, he discovers notes which contain examples used by Aristotle in the first book of the *Poetics* and the *Rhetoric*. Somebody tries to prevent William from reading the notes, which indicates that they might provide an important clue (Eco 1986:168-169, 287; 1984:164-165, 284). The notes contain, amongst others, the phrase, 'They rape virgins and lie with whores...' (Eco 1986:287; 1984:284). William remembers that Isidore of Seville defined comedy "something that tells of stupra virginum et amores meretricum" (Eco 1986:475; 1984:471). This suggests a link between the crimes, Aristotle, the enigma of the library, comedy and a book Venanzio wanted to read.

Adso has a dream which reminds William of the *Coena Cypriani* (Eco 1986:440; 1984:437). According to the library catalogue, the *finis Africae* houses a text containing, amongst others, a comment on the *Coena* and a book 'de stupris virginum et meretricum amoribus' (Eco 1986:442; 1984:439). This title almost exactly repeats the phrase found in Venanzio's notes and Isidore's definition of comedy. Viewed together with the location of the book, this suggests that it may provide the key to the enigma. Venanzio's notes suggest the connection with Aristotle. According to William's reconstruction of the succession of librarians, the book was acquired by Jorge, whose anathemas against laughter may suggest a motive for preventing the other monks from gaining access to it. With the clues of 'laughter', 'comedy' and 'Aristotle' in hand, it is not difficult for a man of William's erudition to make the connection to the second book of the *Poetics*.

The vital clues are the phrase in the notes which recurs in the title of the forbidden text, and the *Coena Cypriani*. William's erudition enables him to identify these clues.

Venanzio's notes are found through an examination of the scene of the crime (Eco 1986:165-172; 1984:160-168). The *Coena* presents itself by accident, through Adso's dream, while the importance of the notes is confirmed by the attempt to prevent William from reading them. Thus, William's erudition, which recalls Holmes's accumulation of and frequent recourse to specialized factual knowledge, enables him to make an informed guess about the nature of the enigma, but he is greatly helped by events beyond his control. A chance event enables him to find the key to gaining access to the *finis Africae* (Eco 1986:212; 1984:209): while he is trying to help William decode a particular text, Adso accidentally grazes the back of the page with the flame of his candle. This causes a coded message to appear (Eco 1986:168; 1984:163): a palimpsest, written with invisible ink. William breaks the code, but the decoded message, 'Secretum finis Africae manus supra idolum age primum et septimum de quatuor' only becomes intelligible as a result of a chance remark by Adso (Eco 1986:212. 460; 1984:209, 457).

William's hypotheses and erudition give a certain directedness to the investigation. Like Holmes and his successors, he illustrates the principle that observation is always underpinned by hypotheses (cf Popper 1979:258-259). He is able to grasp the importance of seemingly random detail because he knows what he is looking for. His approach is sufficiently open and inclusive to admit the potential importance of casual and seemingly irrelevant or marginal detail. This recalls Holmes's belief that even the minutest observation could provide an important clue (cf 2.1).

The way in which the enigma of the library is unravelled demonstrates that the path towards objective knowledge and understanding does not necessarily resemble an orderly, linear progression, that cognitive rationality does not always advance neatly and systematically, but could follow a seemingly disjointed zigzag course. It is not self-sufficient, but can be aided by 'lucky breaks' which provide unexpected insights or corroborating evidence.

There are numerous examples of this in the history of science. To name but a few: Miescher's discovery of nucleic acid; the corroboration of the theory 'that phage operates by injecting DNA into a bacterium' through an experiment in which the key instrument was a domestic food blender; the idea, formulated in idle conversation, that the 'appropriate candidate' for the 'Perfect Biological Principle...would be the mechanism by which the gene is able to copy itself'; the experimental confirmation of the double helix model of the structure of the DNA molecule, by a researcher who preferred a more complex model, brought to the attention of J B Watson, one of the advocates of the double helix model, by a third party, in a 'distinct breach of etiquette' (Gribbin 1985:192,

210, 228-230; see also Roberts 1989).

In the Holmes narratives, the potential usefulness of chance observations and marginal detail does not undermine the idea of detection as an 'exact science' (Conan Doyle 1974:15). By contrast, in William's case, it underlines the conjectural nature of his explanations. In agreement with the fallibilist theory of knowledge, he is aware that a hypothesis can at any time be refuted or at least improved by new information. This principle is not denied by Holmes, but integrated into the quest for certainty and positive confirmation. In its acknowledgement that objective knowledge often is not the result of a linear progression of accurate observations and irrefutable logic, *Il nome della rosa* is therefore closer to actual scientific practice than Holmes's supposedly 'scientific' method.

William first identifies the culprit on the basis of an invalid hypothesis, namely, that the crimes followed the pattern of the seven trumpets of the Apocalypse (Eco 1986:473; 1984:469). A false assumption leads to the right solution. Viewed superficially, this suggests a certain randomness, but it could also be taken to indicate coherence and compactness. Within the context of *Il nome della rosa*, the latter view is to be preferred. William's hypotheses are based upon and corroborated by various interconnected findings which all point in the same direction. The overall pattern is not disturbed by the fact that some of the findings are made by chance. To some extent, this affirms the inherent orderliness and transparency of the objective world, but also supports William's implicit advocacy of a plurality of falsifiable hypotheses, of fallibilist pluralism (cf 1.5), against the dogmatism of his chief rivals, Jorge and Bernardo Gui.

3.3 Reasonableness and rationalism

In his support for pluralism, William acts as spokesman for the real author. According to Eco, 'People spoke too long of a praxis founded on reason (Vernunft) as if there were only one "reason"'. He contends that,

there is a crisis of reason if we are referring to the reason of Descartes, Hegel and Marx. But if we accept the premise that our behaviour in the world ought to be not rational but reasonable, then I will say - that if there is a crisis of reason, there is no crisis of reasonableness (Eco 1991:244).

Referring to *Il nome della rosa*, he states: 'let us say that Guglielmo in my novel is not rational but reasonable' (Eco 1991:245).

Perelman, who seems to define the concept in terms of classical reason, states that the rational operates according to universal principles and truths; it is transhistorical and supra-individual. The reasonable, however, is context-bound, moderate, open to compromise (Perelman 1979:117-119). Viewed thus, the rational seems closely related to Spinner's *prinzipielle Rationalität*, while the reasonable seems related to his *okkasionelle Rationalität* (see 1.3). The reasonable seems therefore compatible with the idea of a plurality of rationalities, and with pluralism in general.

William's reasonableness amounts to a tolerance of divergent viewpoints and an insistence on critical thinking and the empirical testing of theories. He equates the culprit, whose "excessive love of God and of the truth" sets him against such an approach, with the Antichrist (Eco 1986:494; 1984:491). The dialogue between William and the narrator which follows upon this remark indicates that he does not intend to counter his rivals' fanaticism with an equally 'hard', assertive rationality. Nevertheless, the remark amounts to a condemnation, which is neither questioned nor refuted in the text.

In debate, William adopts a conciliatory, inclusive approach, modestly presenting his viewpoints, without making ambitious claims for their validity. He assures his opponents that he finds their point of view quite understandable, and that he himself merely proposes 'some scattered observations that did not claim to be established articles of faith' (Eco 1986:356; 1984:352). The narrator observes that William 'had spoken in such a meek tone, he had expressed his certainties in such a reluctant way, that none of those present was able to stand up and rebut' (Eco 1986:360; 1984:356). Even in discussion with Jorge, whom he condemns, he concedes, "Perhaps what you say is correct, and I was mistaken" (Eco 1986:141; 1984:134).

However, it is significant that William's condemnation of his rivals is not repudiated. The narrator consistently displays uncritical admiration for his capabilities. His attempt to imitate William's mode of reasoning underlines the master-pupil relationship between them (Eco 1986:453-454; 1984:449-450). Like Holmes, William is presented as the Master, the One-who-knows. Even the culprit admits his intellectual superiority (cf Eco 1986:469, 470; 1984:465, 466). Although William is self-consciously linked to the literary convention of the Superdetective, this in itself does not mean that his superior status should necessarily be taken ironically, *alla postmoderno* (cf Eco 1986:529); such a reading would suggest that even his pluralism may be turned against itself, while the 'straight' reading preferred in this study indicates that it should be taken seriously.

These considerations suggest that the particular model of rationality advocated by William is the one supported by the text as a whole. No viable alternatives are offered; William's 'reasonableness' is presented as the only constructive mode of being in the world. Thus, it acquires a certain

hegemony and all-inclusiveness, which seems contrary to William's advocacy of openness and rejection of dogmatism.

Eco states that William 'believes in no single truth' (Eco 1991:245), yet the investigator himself confesses, "Non ho mai dubitato della verità dei segni, Adso, sono la sola cosa di cui l'uomo dispone per orientarsi nel mondo" (Eco 1986:495; 1984:493): He believes that the world could be rendered meaningful and intelligible through interpretation, that reason is not lost in the labyrinth. Truths can be uncovered which may lead to further truths, and so on. Adso supports this by pointing out that William did in fact succeed in making various accurate inferences (Eco 1986:494-495; 1984:492).

This is balanced out by the seeming lack of order in the universe, the apparent absence of an underlying design; or, at least, by the inability of human reason to find it (Eco 1986:495; 1984:492). The possibility of such a design cannot be denied, but it lies beyond human understanding. The truths arrived at through interpretation are not final and absolute, but provisional and contingent, mere stepping stones.

Thus, William's reasonableness prevents him from making exaggerated claims for the scope of human reason. He seems to suggest that the proliferation of signs can be decoded, but the links between them are not always evident. Meanings can be uncovered, but not an ultimate meaning; interpretation generates further comments and interpretations, *ad infinitum*. There are no absolute criteria for determining the validity of interpretations, and reason itself is neither an infallible source of, nor an absolute guarantee of truthfulness.

Nevertheless, the possibility of absolute truth as such is not denied in *Il nome della rosa*. Though unattainable, objective truth, as distinct from the provisional truths of interpretation, is viewed as absolute: 'truth is indivisible, it shines with its own transparency' (Eco 1986:246; 1984:243). William states that "true learning must not be content with ideas, which are, in fact, signs, but must discover things in their individual truth" (Eco 1986:320; 1984:317).

By contrast, in atomic physics, one of the influences which seem to have shaped the philosophical framework underlying Lem's texts, not the objects of analysis as such, but the theories about them are known. The objective reality of subatomic phenomena is not denied, as their behaviour can be observed, but to a large extent, they are theoretical constructs. Especially as one moves towards the very small, phenomena cannot be observed directly, but one has to rely on the traces they leave in the experimental setup, and hypothesize their nature and behaviour mathematically.

William, moreover, proposes the concept of an *Ur*-sign, an ultimate meaning as the ideal: "I would like to go back from this print of a print to the individual unicorn that stands at the beginning of the chain" (Eco 1986:320; 1984:317). To the extent that the texts by Lem and Gadda present knowledge of such a first origin or *Ur*-sign as impossible, and indicate that objective truth as regulative principle should be defined as correspondence to the facts with reference to a specific problem or set of phenomena, they seem more radically pluralist than William's views on truth. Nevertheless, his treatment of meaning and interpretation is compatible with fallibilist pluralism (see 1.5).

3.4 Synthesis

In his comments on *Il nome della rosa*, Eco writes, 'si tratta di un giallo dove si scopre assai poco e il detective viene sconfitto' (Eco 1986:520). ['this is a detective novel in which very little is discovered and the detective is defeated'] This is not entirely accurate. William is defeated in that the culprit escapes punishment; in that he fails to prevent the destruction of the library and of the text which provoked Jorge to commit murder; and fails to identify the culprit in time to prevent some of the crimes. Yet, he succeeds in unravelling the enigma of the library and in discovering the identity of the culprit and explaining the crimes. His defeat is only partial, which ties in with the ambiguity referred to earlier on (see 3.1).

The various discoveries and inferences made by William are well-defined and presented as truthful. Cognitive rationality as instrument of knowledge and understanding is not called into question. It is assumed that the world can be known, can be rendered meaningful and intelligible through rational analysis. Absolute truth and ultimate meaning are accepted as possibilities, even as ideals, though mostly unattainable in practice.

One could describe William's reasonableness as a modest or moderate rationalism, conscious of its limitations and therefore not excessive in its claims. In view of his condemnation of dogmatism and the absence of viable alternatives to his approach, his philosophy could be described as *Monopolpluralismus*: it advocates pluralism as the only acceptable approach to the problem of knowledge, and propagates pluralist tolerance and moderation as a general attitude. Thus, pluralism is presented as a universal and all-inclusive set of values.

In this sense, William's 'reasonableness' amounts to a set of *a priori* beliefs which is never seriously questioned. Thus, it exhibits a certain affinity with Holmes's dogmatic rationalism. Both in the cases of Holmes and William, the investigator's status and the authority of his position

remain virtually unassailed, while the reader is left in no doubt about his rivals' lack of credibility.

By its very nature, the dominance of William's approach is established less crudely and arrogantly than Holmes's. Yet, *Il nome della rosa* as a whole could be read as an argument in favour of the particular model of rationality advocated by William. The text presents a confrontation between divergent philosophical approaches which do not compete on an equal footing. Despite William's expressions of modesty and tolerance, he does not seem to have any doubt about the justness of his position.

CHAPTER 4

In the labyrinth: multidetermination

4.0 Introduction

The detective in Eco's novel suffers a partial defeat. Don Ciccio Ingravallo, in Carlo Emilio Gadda's *Quer pasticciaccio brutto de via Merulana* (1957) is less fortunate: he fails to identify the culprit and the crimes he investigates remain largely unexplained.

Both Don Ciccio and William inhabit fictional worlds in which 'nihil est sine ratione sive nullus effectus sine causa sua' (Leibniz, cit in Heidegger 1958:43). It is assumed in both texts that actions and events do not occur at random, but are the results of specific causal factors. Accordingly, William is able to understand and explain many of the phenomena around him. His arguments and accomplishments convey the belief that the book of nature can be decoded, which amounts to an optimistic valorization of cognitive rationality. The worldview projected by Gadda seems more pessimistic. Ciccio's failure implies that it is virtually impossible to unravel the tangle of causes which produce complex phenomena. Each causal factor carries a certain amount of causal energy, and phenomena are produced through the cumulative power and complex interactions of a very large number of causal factors.

This philosophy is stated explicitly by Don Ciccio:

He sustained, among other things, that unforeseen catastrophes are never the consequence or the effect, if you prefer, of a single motive, of a cause singular; but they are rather like a whirlpool, a cyclonic point of depression in the consciousness of the world, towards which a whole multitude of converging causes have contributed (Gadda 1984:5).

While Eco's William does not shed all residues of optimistic rationalism, Gadda's *Pasticciaccio*, and, to an even greater extent, Lem's investigators, exemplify the problem of cognitive rationality faced with multidetermination and random complexity. The texts by Gadda and Lem take us to the heart of the problem discussed in the present study, and will therefore be analysed in more detail than Eco's.

The other fundamental difference between Eco's detective and Gadda's concerns their position in

respect of women and sexuality. Like Holmes, William seems asexual and aloof; Ingravallo's attitude towards women is a mixture of desire, frustration, crude paternalism, misogyny and compassion. He exemplifies the notion, already suggested by Nietzsche (see 1.1), that the investigative intellect does not function in isolation from the instinctual, from the body and its needs.

4.1 Problem and investigation

Two crimes present themselves to Ingravallo.

The first is 'a robbery, or to be more precise, a case of breaking and entering, *manu armata*' (Gadda 1984:24). Under the pretext that he 'was sent by the management of the building to check the radiators', a young man gains entry to the apartment of a signora Menegazzi, on via Merulana (Gadda 1984:28). She alleges 'that the boy had hypnotized her' (Gadda 1984:29), but the detective ignores this allegation. Despite her 'hypnotic condition', she protested; in reaction, the criminal threatened her with a pistol (Gadda 1984:29). Thereupon he took 'all her gold, her jewels' (Gadda 1984:30). As soon as he had left, *la* Menegazzi raised the alarm (Gadda 1984:30).

Ingravallo's first priority is to 'reconstruct the event' (Gadda 1984:31), that is, to establish the facts to be explained, to define the problem. He does not start from random observations; his first priority is to clarify the problem itself (cf Popper 1979:258-260).

In agreement with detective novel conventions (see 1.8), he sets out to do this by interrogating the available witnesses. The first he encounters are the concierge and *la* Menegazzi herself. Their repeated reference to a 'murderer' instead of a robber casts doubt upon their reliability as witnesses (Gadda 1984:26). A certain scepticism is also suggested by the narrator's reference to 'the concierge and the other lady tenants more prompt in mythmaking' (Gadda 1984:31).

The evidence of a number of the victim's co-tenants enables Ingravallo to 'verify' that the criminal was 'boldly pursued' (Gadda 1984:31). There seems to be consensus about the accuracy of this piece of evidence. Yet once again, the narrator introduces a note of scepticism: 'It seemed that in pursuing him, or pretending to pursue him...' (Gadda 1984:31). The alleged pursuer is described variously as a 'young man', a 'kid', a 'grocer's helper', and a 'frightened seraph' (Gadda 1984:31, 33). One of the male tenants, however, *signor* Bottafavi, who also allegedly chased the delinquent, denies having seen the 'grocer's helper' (Gadda 1984:33). He is in turn contradicted by *signora* Manuela, who insists that she saw him 'running out of the entrance, after the thief' (Gadda

1984:33). The contradictory versions of the event indicate that the evidence may be unreliable.

All the witnesses agree that two shots were fired. One, however, says the shots were fired as the criminal came out of the main door; another insists that he fired the shots 'on the stairs' (Gadda 1984:34).

Further questioning reveals that none of the tenants had received anything from a grocer's boy on the morning of the crime (Gadda 1984:39). Some assert that one of the tenants, *Commendatore* Angeloni often received grocer's boys; but despite persistent questioning, he remains vague and evasive on this point (Gadda 1984:42-44, 46-52). The police manages to capture a grocer's boy who the *Commendatore* states came to his flat, but other witnesses deny that he was the alleged pursuer (Gadda 1984:48-49).

The only other possible clue Ingravallo turns up initially is a tram ticket (Gadda 1984:36). It is found in *la Menegazzi's* flat, but she cannot explain how it comes to be there. The ticket was punched at Torraccio. The conductor of the tram used by the owner of the ticket is questioned, and he confirms having noted a passenger vaguely responding to the already vague description of the thief (Gadda 1984:62).

Both the 'grocer's helper' and the tram ticket are identified as possible clues because their presence in the *palazzo* on via Merulana cannot be explained. The 'grocer's helper' could be either an eyewitness to the robbery, or an accomplice: one of the woman tenants alleges that he was a decoy (Gadda 1984:39). The tram ticket might enable the police to trace the thief. Yet it cannot be excluded that it might have landed up in *la Menegazzi's* flat by accident, and that the 'grocer's helper' might have been a casual visitor. Ingravallo overlooks the possibility of a random occurrence, which underlines his belief that reality can be analysed in terms of direct causality.

As indicated above, the detective's first priority is to define the problem. He only succeeds partially, because of unreliable witnesses and promising clues which do not lead anywhere. The witnesses disagree about important particulars, producing different versions of the same story. Ingravallo does not have enough data at his disposal to corroborate any of the versions or follow up the clues. These supposed clues may even be extraneous to the events he is investigating, intelligible only within a context unknown to him, even though at face value they seem relevant to the investigation. They can be viewed as points where different series of events, one of which is the case under investigation, intersect randomly. This would probably have been the point of view preferred in Lem's 'random universe'.

The first problem may be linked to the second. According to the concierge, the thief first rang 'Signora Liliana's bell' (Gadda 1984:24). She 'was taking a bath', and did not answer (Gadda 1984:25). This is confirmed by the *signora* herself.

The second problem concerns the death of Liliana Balducci, a friend of Don Ciccio and co-tenant of *la Menegazzi*. She is found murdered in her flat, her throat viciously cut (Gadda 1984: 26):

A deep, a terrible cut opened her throat, fiercely.
It had taken half the neck, from the front towards
the right, that is, towards her left, the right for
those who were looking down (Gadda 1984:69).

Faced with such a scene, one imagines, Holmes would have made specific inferences: for example, that the victim might have been killed from behind by a left-handed person; or that the 'series of blows' which seems to have been delivered by the murderer (Gadda 1984:69), together with the scratches on the victim's face might indicate that the victim's head was held down while the murder weapon was being forced into her neck. Holmes would probably not have hesitated to offer an explanation for the apparently gratuitous violence of the killing. The horror of the event would have been neatly sanitized through ratiocination; would have been turned into a pretext for a display of the detective's powers of reasoning and an optimistic valorization of cognitive rationality.

Ingravallo, however, does not immediately offer any hypothesis, but dwells on lurid physical detail. This will be discussed more at length in the section on the investigators and the feminine (see 4.3).

The probable murder weapon is identified: 'A "very sharp" and completely missing knife was probably the instrument most capable of operating in that way' (Gadda 1984:81). This hypothesis is based on specialized empirical knowledge: 'The man from the criminological bureau said a razor was out of the question, because it makes a neater cut, more superficial...' (Gadda 1984:82).

Having identified the probable murder weapon, Ingravallo reconstructs the murder itself (Gadda 1984:83-84). Though derived from observation, the reconstruction is not presented as the result of logical inference; rather, Ingravallo seems to relive the crime in his imagination. He projects himself imaginatively into the situation, and shows a pronounced empathy with the victim. Unlike Holmes, always the detached observer, he does not view the crime exclusively at a cognitive-intellectual level, as an interesting puzzle, but also works it through emotively, as an existential event.

The question of how the murder was committed is not completely clarified. For instance, Don Ciccio does not even speculate on how the murderer gained access to the victim's flat, or managed to get close enough to the highly respectable *signora* to strike the fatal blow. Ingravallo seems to place more emphasis on empathy with the victim than on constructing a hypothesis which would cover all the data.

Similarly, the investigation into the motives for the crime is contaminated by the detective's emotional 'hangups'. The reader is informed that there were 'some signs of theft' (Gadda 1984:81); that the victim's 'fingers were stripped of rings: the wedding ring had vanished' (Gadda 1984:82). Yet the detective is primarily interested in another possibility: 'a motive, perhaps, a murkier one...The murder seemed, at this stage of the investigation, a crime of passion. Rape? Desire? Vengeance?' (Gadda 1984:86). This possibility is suggested by the position of the victim's body: supine, legs slightly spread, skirt thrown back. No evidence is presented, however, that the victim was in fact raped or had intercourse immediately before her death. The 'crime of passion' hypothesis remains completely unsubstantiated, and it will be seen that it could be a product of the detective's repressed desire for the victim (see 4.3).

The prime suspect, according to Ingravallo, seems to be Giuliano Valdarena, the victim's cousin, who discovered the body. Ingravallo notices a bloodstain on his shirtcuff, 'from the gold of the cuff link to the cuff's edge' (Gadda 1984:73). Valdarena's explanation is that he instinctively caressed the victim's face (Gadda 1984:73). The detective suspects the gesture could be attributed to a deeply-buried, evil desire, but does not have objective grounds for rejecting Valdarena's explanation. The only evidence which casts some suspicion on Giuliano is the victim's husband's mention of the 'chronic lack, which afflicted the young man, of a few sheckels, which ought to stick to his fingers, at least in part' (Gadda 1984:77). In her will, the victim left 'a tidy sum, forty-eight thousand, to her cousin Doctor Giuliano Valdarena' as well as a diamond ring and various other valuables (Gadda 1984:133-134). Valdarena therefore might have committed the murder for financial gain. This possibility, however, should be weighed up against the fact that Giuliano was to marry a 'snappy little brunette of excellent family' (Gadda 1984:77). Possibly, Valdarena did not really need the money and valuables bequeathed to him.

All the evidence which points to Valdarena as the murderer is counterbalanced by information which renders it inconclusive. Moreover, the detective's attitude towards him is coloured by jealousy and resentment: the narrator states that

There was...in Don Ciccio a certain coldness, a kind of prickly jealousy towards the young, especially towards handsome young men, and even more so, the sons

of the rich (Eco 1984:17-18).

The reader is assured that the detective's personal prejudices 'would never have influenced his work as a police officer' (Gadda 1984:18), yet his professional suspiciousness towards Valdarena is strongly tinged with unwarranted aggression driven by sexual frustration. There is a strong tension between the cognitive-intellectual demands made on the detective and emotive-instinctual impulses. This is entirely absent from Holmes, for whom periods of *annui* and drugtaking simply alternate with periods of intense intellectual activity.

Meeting Valdarena at signora Balducci's, Don Ciccio is disconcerted by an internal voice 'trumpeting awfully: "This is her boyfriend"' (Gadda 1984:18); by 'the idea that this "cousin" was paying court to the signora Liliana in order to ...win financial favours from her' (Gadda 1984:19). The narrator ascribes these suspicions to 'Gabbioni's dry wine', thus emphasizing their lack of a rational basis and downplaying their importance, yet asserts that the detective was 'infuriated...with a secret dissimulated fury' (Gadda 1984:19), which suggests that the subjective importance of the suspicions should not be underestimated.

Ingravallo's jealousy and resentment are fuelled by the suspect's privileged background; and by his own infatuation with the victim (cf Gadda 1984:91) and lack of success with women (cf Gadda 1984:18); Despite the narrator's assertion to the contrary, these feelings affect his police work, as evidenced by his hostile questioning of, and ruminations about Valdarena (cf (Gadda 1984:145-160).

There are several other suspects.

One is Virginia, third in the series of 'young girls that Liliana Balducci has welcomed as daughters and then dismissed' (Gadda 1984:177). The evidence of Don Lorenzo, Liliana's priest, suggests the possibility of lesbian desire on Virginia's part: she kissed the signora 'the way a panther might give a kiss'; 'then she grasped her wrist, and twisted it...like a vise, mouth to mouth, till each could breathe the other's breath, tit to tit' (Gadda 1984:185).

Virginia seems physically capable of murder, being a robust young woman, with 'a pair of hips, two marble breasts: two teats as hard you'd need a scalpel' (Gadda 1984:183). Given her possible lesbian inclinations, she could fit in with the crime of passion hypothesis; her leaving the Balduccis and being left out of the victim's will could tie in with vengeance as a possible motive. Given her uninhibited sensuality, she may have seduced the victim's husband and murdered her out of jealousy. Another possible scenario is that she seduced somebody into murdering and robbing her

former pseudo-stepmother.

Even though no evidence is presented which links Virginia to the murder, it seems curious that Ingravallo does not even mention any of these possibilities. He neither attempts to trace her for questioning, nor probes the exact nature of the relationship between her and the Balduccis. On the basis of Don Lorenzo's evidence, however, this would have been fully justified.

Ingravallo's seeming negligence in this regard could be the result of a desire for economy of effort. Even within the framework of possibilist pluralism, although none should be excluded summarily, not all hypotheses are judged equally worthy of investigation (cf Naess 1972:88). The possible scenarios concerning Virginia, however, might have led to the refutation of the detective's theories about Valdarena and opened up new lines of investigation; might have helped solve a riddle formulated early on in the novel:

What began to amaze him, nonetheless, was that the reservoir of Balducci's nieces was brimming with such buxom or such sweet nieces: or at least, this present one was sweet, while the others simply stupendous (Gadda 1984:14).

Further investigation of this aspect might have led to a refutation of the theory that the 'nieces' were simply used to compensate for the *signora's* childlessness: 'the change of niece must have been, in her unconscious mind, a symbol, in place of the one she failed to dish up herself' (Gadda 1984:16). The detective himself suggests an alternative explanation for the choice of such beautiful 'nieces': that, for *signora* Balducci, 'her unfulfilled maternity might justify some venatorial wandering of her husband, some curiosity, some extravagance of the male and possible father... Try with another person!' (Gadda 1984:13). Another possibility he suggests is that the victim's childlessness might have given rise to a kind of erotic admiration for more fortunate women, even a veiled and suppressed lesbianism: 'The women forgotten by God...caresses and kisses in her dreams the fertile womb of her sisters' (Gadda 1984:140). Virginia's 'headstrong vitality', her 'provocative beauty', the assertion that she had 'put a spell on both' the Balduccis (Gadda 1984:182) could fit in with all these possibilities, yet this is overlooked by Ingravallo.

The detective's failure at least to question Virginia seems a curious limitation of the scope of his investigation, especially in the light of his theory of pluralist causality (Gadda 1984:5), as it amounts to the suppression of certain hypotheses. It can to some extent be explained by the role played in the investigation by repressed sexuality and the feminine (see 4.3).

The other important suspects are identified through 'chance, luck, the net, a little unravelled, a little frayed, of the patrol, more than any artful wisdom or hairsplitting dialectic' (Gadda 1984:256). The culprit in the robbery is described as 'a tall young man in a cap...with a greenish-brown woolen scarf' (Gadda 1984:26). The police manages to identify the owner of the scarf as one Enea Retalli of Toraccio, who had taken it to be dyed 'to a woman at I Due Santi...a certain Pàcori, Pàcori Zamira' (Gadda 1984:189). This bit of information is supplied by one of Zamira's former employees, Ines Cionini, who once did a casual job for the local sergeant of the carabinieri (Gadda 1984:195). This Ines Cionini was arrested not long after the Balducci murder on a charge of 'loitering, no identification papers: and on well-grounded suspicion of prostitutional activity in a public place' (Gadda 1984:195). Questioned by Ingravallo and his colleagues, she mentions that her boyfriend, Diomede Lanciani occasionally 'went to work even for a countess...she spoke Venetian' (Gadda 1984:248). This possibly is a reference to *signora* Menegazzi. Thus, Diomede might also be linked to the robbery.

Almost at the end of the interrogation, as the police 'were about to dismiss her', Ines casually mentions that Diomede has 'a little brother, too, named Ascanio', who 'must have hung around the same building, where that countess from Venice lives' (Gadda 1984:254). This Ascanio is a 'kid who worked in a shop, at a grocer's' (Gadda 1984:255): could this be the mysterious grocer's boy (cf Gadda 1984:31-34)?

Ines also mentions one of her former colleagues at Zamira's (Gadda 1984:222) who seems to be involved with the owner of the scarf. While the police is questioning Zamira about this woman, Camilla Mattonari, her cousin Lavinia enters, wearing a ring presumed to be on the list of goods stolen from Countess Menegazzi (Gadda 1984:28-291). She asserts that it was a present from Camilla (Gadda 1984:294).

This seems to confirm Retalli's involvement in the robbery. Yet the evidence is to some extent subverted by the narrator's indication that the interrogating policeman's apparent self-confidence conceals a lack of certainty about the actual facts:

as if his professional wisdom, operating in his cranium
ab aeterno, had allowed him to recognize it instantly.
In reality he was seeing it then for the first time...
if, after all, it really was a topaz, and not a piece
of bottle, perhaps (Gadda 1984:292).

The green scarf, another seemingly strong piece of evidence, is handed to the police by one of the seamstresses who also provides a description of Retalli (Gadda 259-260). The narratorial

comments, however, cast doubt upon the identification of Retalli as the thief described by Countess Menegazzi: 'His overall, for that matter, not to mention the cap, were missing from the portrait: a precise question of the sergeant remained unanswered' (Gadda 1984:260).

In both these instances, a piece of evidence is presented and then undermined through contra-information introduced by the narrator. This results in the deferral of a clearcut solution, and underlines the undecidability of hypotheses in the context of multiple causal possibilities. By contrast, the traditional detective novel *à la* Holmes would probably have presented the evidence as confirmation of the investigator's hypotheses. The narrator's interventions can be viewed as motivated by the epistemological pessimism and fallibilist pluralism (see 1.5) implicit to Gadda's text, as opposed to the rationalist optimism of the Holmes narratives.

Most of the Menegazzi jewels are recovered, found in a chamber pot at Camilla Mattonari's (Gadda 1984:317-322). She denies all knowledge of their presence. The jewels being found at Camilla's does not confirm Retalli's involvement in the robbery, but constitutes circumstantial evidence, which has to be complemented by additional facts. The policeman who recovers the jewels, Pestalozzi, is only able to construct a working hypothesis (Gadda 1984:347-348) which seems fairly plausible, but leaves too many questions unanswered to be acceptable: 'Every hypothesis, every deduction, no matter how well-constructed, turned out to have a weak point...And the fish then...good-bye! The fish of the impeccable "reconstruction"' (Gadda 1984:348). The implication is that, unlike some of the investigators in Lem's texts, Gadda's police aspire towards a solution which would not leave any loose threads.

The Lanciani hypothesis is investigated by Ingravallo, who sends one of his men to look for Ascanio, on the grounds of his alleged presence near the apartment building in which the victims lived (Gadda 1984:254). The aim is to find evidence which would support Ines's testimony and to test the hypothesis that Ascanio was the 'grocer's boy' allegedly noticed by some of the tenants in via Merulana after the robbery. At this point in the narrative, the presence of the 'grocer's boy' itself on the scene of the crime is only indicated by the evidence of a not very reliable witness. Even if the Lancianis' guilt could be confirmed, that would still leave the central problem, the Balducci murder unsolved.

Ingravallo personally continues this part of the investigation. He questions the Balduccis' maid at the time of the murder, Assunta Crocchiapani, tells her that the 'full name' of the murderer is already known to the police, 'and where he lives: and what he does', and orders her to reveal his name (Gadda 1984:387). A hypothetical assumption seems to underlie this attempt at intimidation: what if Assunta is aware of information not yet known to the police or somehow acted as the

murderer's accomplice? The assumption may be based upon a 'hunch', an intuitive guess which might advance the investigation, or it may be merely speculative; Ingravallo might simply be bluffing, in an attempt to lure his witness into the open.

Such an intuitive guess is normally made explicit in the form of a working hypothesis which suggests a possible explanation, to be tested and corroborated or perhaps refuted (cf Popper 1979:260), or even in the form of a 'crazy', that is, unexpected and highly improbable hypothesis (cf Naess 1972:92-94). The classic example of a 'hunch' which moved beyond the framework of existing knowledge and offered a new perspective on the data is Newton's 'discovery' of gravity (cf Roberts 1989:11-15). Such an insight is inspired, not attained through strict logical reasoning, which indicates that intuition is a vital component of cognitive rationality. This contradicts the rationalist emphasis on 'pure' reason as the quest for objectively verifiable knowledge through reasoning according to fixed principles (cf Peirce 1979:117), but is compatible with a fallibilist or possibilist theory of knowledge. In terms of fallibilism, which views rationality, not as the foundation of objectively verifiable knowledge, but as constituted by the critical testability of hypotheses (cf Popper 1989:28), intuitive guesswork would be entirely admissible, inasmuch as an explanation could be admitted as a working hypothesis even though the immediately available evidence supporting it might be very tenuous or even nonexistent. Inspired guesswork, the ability to 'see' the solution in a quick flash of illumination is also typical of Holmes and other traditional superdetectives, but in their case, it is always explained as the result of logical reasoning based upon observable data; it only seems inspired because their thought processes is much more agile than their rivals'.

In the present instance, the reader is kept in the dark as to the motivation for Ingravallo's statement. The only evidence which possibly links Assunta to the murder is Ines Cionini's vague reference to a friend who worked in Rome; received a dowry from her employers; had a pair of eyes 'Different from the eyes like the rest of us have...Two black stars, right out of hell...like they had an idea, in them, of getting revenge on somebody' (Gadda 1984:223); and received a pair of earrings from her employers (Gadda 1984:222). Indeed, when Don Ciccio faces Assunta, he is struck by 'a face, a pair of eyes! gleaming in the penumbra...the blue - dangling from lobes and on the cheeks - earrings' (Gadda 1984:379-380).

The impression of a desire for revenge corresponds to one of the possible motives mentioned by Ingravallo (Gadda 1984:86). The image of a pair of eyes 'right out of hell' (Gadda 1984:223) echoes some of the detective's reflections on the murder: 'That skirt...thrown back like that, as if by a gust of wind: a hot, greedy wind, blowing from Hell' (Gadda 1984:86). These parallels, however, do not carry much weight, firstly, since Ines is described as a unreliable witness: 'A liar,

who got all tangled up in her own lies' (Gadda 1984:223), and secondly, since they might be purely coincidental.

The detective's assault on Assunta is partly inspired by the 'galloping of his delirium', by the 'pawing rage' provoked by the murder (Gadda 1984:384). She counters by invoking her sexuality, thereby attacking Ingravallo's weak spot, his repressed sexuality and frustration: 'A splendid vitality, in her...an undaunted faith in the expressions of her flesh, which she seemed to hurl boldly to the offensive' (Gadda 1984:388). Thus, cognitive rationality is 'paralyzed' (Gadda 1984:388). The feminine as metaphor for indeterministic complexity, which results in the undecidability of hypotheses, will be discussed in more detail further on (see 4.3).

4.2 Synthesis

The investigation remains inconclusive. Various suspects are identified. The jewels found at Camilla Mattonari's, the ring received as a present by Lavinia, and the green scarf dyed at Zamira's indicate that Enea Retalli, Lavinia's boyfriend might have been responsible for the robbery at Countess Menegazzi's. The available data, however, only constitute circumstantial evidence (cf Schmidt 1989:92).

As Retalli's guilt is never confirmed, alternative solutions cannot be excluded. It is possible that Diomede Lanciani, Ines's boyfriend, was involved, and that his brother, Ascanio, was the 'grocer's boy' allegedly spotted by some of the tenants (Gadda 1984:31-33). The evidence supporting this is Diomede's allegedly having worked for a Venetian countess (possibly *la* Menegazzi), and Ascanio's having 'hung around the same building' (Gadda 1984:254). The main objection to this theory is that the countess probably would have recognized Diomede (however, she might have been too confused). A further objection is that the possibility of a link between the countess and Diomede is only indicated by the hearsay evidence of an unreliable witness, Ines Cionini (cf Schmidt 1989:446). Yet her evidence cannot simply be rejected, as it proved quite useful in other instances.

Another possibility which remains unconfirmed is that the robbery and the Balducci murder are connected. The thief first knocked at the *signora's* door, but she did not open because she was in the bath. Did he knock at her door intentionally or by mistake? Did the same person return a few days later to rob and murder her? These questions remain unanswered for lack of evidence.

Pestalozzi, having recovered a number of the stolen jewels, does not take the trouble of checking

whether some of *signora* Balducci's are amongst them (Gadda 1984:326). Should that be the case, it would seem likely that the crimes are connected and were committed by the same person. As it is, this remains a mere possibility.

Ingravallo's efforts to build up a case against Valdarena prove unsuccessful. He had an apparent motive, being 'hard up for cash' (Gadda 1984:91) and a major beneficiary of the deceased's last will (Gadda 1984:133-134). After 'repeated questioning', he could not provide a 'watertight' alibi for the time when the murder was committed (Gadda 1984:117). This circumstantial evidence is, however, offset by the strong affection there seems to have been between him and the victim. This not only makes it seem unlikely that he would have murdered her, but also suggests that she would have been quite willing to offer him financial assistance; there was no need for him to murder her to obtain this. His projected marriage to a girl of 'excellent family' also removes the need for desperate measures to solve his cashflow problems (Gadda 1984:77).

The other two strong suspects are Virginia and Assunta. Strangely enough, in spite of the available evidence, Ingravallo does not investigate Virginia's possible involvement. Yet she possesses both the physical strength and the violent temperament required for the murder. Her motive could have been jealousy or vengeance. The detective, however, glosses over the possible sapphic element in the relationship between her and her former employer, and does not actively seek an answer to his own question of why 'the reservoir of Balducci's nieces was brimming with such buxom or such sweet nieces' (Gadda 1984:14). He also does not investigate the possibility of a sexual relationship between Virginia and the victim's husband; his frustrated desire for Virginia results in deviance from pluralism through the repression of certain hypotheses.

The detective's 'paving rage' (Gadda 1984:384), together with certain parallels mentioned in the discussion of their final encounter, possibly accidental and vague and unreliable as evidence, provoke the verbal assault on Assunta (Gadda 1984:387). Intimidated by her sexuality, however, Don Ciccio recoils.

On the whole, the available evidence is either inconclusive or unreliable or so flimsy as to be quite useless. Therefore, no hypothesis should be ruled out. In a context governed by indeterminacy and undecidability, possibilist pluralism offers a way out of the impasse. Cognitive rationality loses its privileged position as foundation for a clearcut solution, but is confirmed as the only instrument for attaining approximation to truth through the generation of a plurality of hypotheses.

In so far as the detective's defeat could be read as a 'typically post-modern' subversion of closure and affirmation of scepticism (cf Tani 1982:41; Mulder 1989:253), and the investigation as a

'deconstruction' of the traditional detective's feats of ratiocination, it would not only imply the problematization of cognitive rationality, but also the denial of objective knowledge. The present reading, however, concedes that indeterministic contexts must inevitably lead to a radical redefinition of rationality, but suggests that it remains oriented towards objective knowledge and underpinned by objective truth as regulative principle.

4.3 The investigators and the feminine

Ingravallo's failure or tacit refusal to question Virginia is an instance of sexually motivated repression. Together with the paralyzing effect of Assunta's 'undaunted faith in the expressions of her flesh' (Gadda 1984:388), this suggests an intimate connection between cognitive rationality and sexuality in the *Pasticciaccio*.

The connection will be examined through an analysis of the relationship between the various investigators and the feminine. This relationship can be inferred from certain scattered indications which form a fairly consistent pattern. None of the investigators is presented as involved in a 'systematic' sexual relationship. They mainly seem to relate to the feminine as observers, through the gaze.

In this context, Lacan's remarks that, 'in the dialectic of the eye and the gaze...there is no coincidence, but, on the contrary, a lure'; and, 'what I look at is never what I wish to see' (Lacan 1986:102, 103) are especially relevant. The gaze of the male is lured onward by the feminine as object of desire which is never confronted or expressed in the full presence of its carnality, but only offers fragments of itself, fleeting glimpses. Forever shifting, the feminine is never fully present where it seems to offer, even to surrender itself to the gaze of the male. It evades positive confirmation, but draws the gaze into an infinite game of seduction (cf Baudrillard 1988:17-18). Thus, the male is locked into the position of the voyeur, who seeks the 'object as absence', for whom what cannot be seen is more important than what he sees (Lacan 1986:182).

The female body as victim and object of desire remains a haunting presence throughout the investigation.

The description of the victim's body is unusually detailed (Gadda 1984:67-70). While the traditional detective novel only includes information strictly relevant to a statement of the problem, here, relatively unimportant particulars are enumerated with obsessive accuracy. Unlike the conventional

detective novel, *That awful mess* does not present the victim's body as a cipher, a mere pretext for the investigation. The attention to physical detail also ties in with the tendency, found elsewhere in the novel, to transform surface realities into a verbal labyrinth (see, for example, the descriptions of a painting, Gadda 1984:271-276, and of a 'surlly and half-featherless hen' Gadda 1984:285-287).

More importantly for our purposes, the description provides the key to a reading of the investigator's attitude towards the feminine, as the victim's body is viewed through his eyes. Throughout the text, whenever the feminine as seductive energy comes into play, the investigator acts as focalizer (cf Genette 1980:189-194). The gaze is the area of intersection between seduction and cognitive rationality's quest for knowledge and understanding.

The description of the victim opens on a note of moral indignation and revulsion: 'The body of the poor signora was lying in an infamous position, supine, the grey wool skirt and a white petticoat thrown back' (Gadda 1984:67-68). Obviously, the wealthy and respectable *signora* would never have exposed herself voluntarily like this, especially not in front of her social inferiors. Yet not for a moment does Ingravallo respectfully avert his gaze. Instead, he dwells with apparent relish on particulars which under normal circumstances would have been forbidden territory: 'She was wearing white underpants, of elegant jersey...delicate edging...the garters - a lilac hue' (Gadda 1984:68). Even in death, the thinly veiled female sex provokes a fantasy of recent sexual activity: 'a voluptuousness whose ardor, whose shudder seemed to have barely been exhaled' (Gadda 1984:68). The *mons veneris* and the fold of the sex are denoted consecutively in different terms, a verbal insistence which underlines the observer's fixed gaze and suppressed excitement: 'the gentle softness of that hill...that central line, the carnal mark of the mystery' (Gadda 1984:68).

While the investigator's gaze lingers on it with obsessive interest, the female sex remains ineffable, it cannot be confronted in itself; hence the recourse to lyrical evasion, to circumscription. It is viewed as potentially dangerous, and therefore should perhaps be suppressed, erased: 'the mystery...the one that Michelangelo ...had thought it wisest to omit' (Gadda 1984:68). Underlying the reference to Michelangelo is the investigator's inability to come to terms with the object of desire in its carnality. He deflects its assault on his senses by turning it into a suppressed artistic motif.

The passage is also marked by the ambivalence of Ingravallo's position: as investigator and trained observer, his detailed and attentive examination of the victim's body is justified, even required. Yet at the same time, the sight of the much-admired body, 'the marvelous knees', constitutes a wish fulfillment: in death, at last, the *signora* yields to desire: 'those legs slightly spread, as if in horrible

invitation' (Gadda 1984:69).

The investigator's gaze passes on to the victim's cut throat. As indicated above (see 4.1), unlike Holmes, Ingravallo is not quick to make inferences concerning the killing itself. Instead, he focuses on concrete detail, specifically on the blood which have flown or spurted from the wound. Despite his revulsion ('a horror!...a mess!'), it is observed and described in minute detail: 'with some little bubbles still in the midst..they seemed holes, to the novice, like red-colored little maccheroni' (Gadda 1984:69). This creates a sense of alienation and detachment; the comparison to 'little maccheroni' seems gruesomely incongruous.

The observer traces the blood, noticing that it 'had curdled on the floor, on the blouse between the two breasts' (Gadda 1984:69). Surprisingly, in view of Ingravallo's fascination with the victim, they are not regarded as sexual objects; the focal point of interest seems to lie further down. The path of the victim's blood is further traced to the hem of her skirt. It is again compared with food: 'surely in the end the mass would be all sticky like a blood pudding' (Gadda 1984:70). Blood, the symbol of life, is compared with food, which sustains it, in a context governed by death and sexual desire. All these elements converge in the body of the victim.

By contrast to the 'frightful stream of a black blood from Faiti' (Gadda 1984:69), the victim's underpants, which 'weren't bloodied...left uncovered two patches of thigh, two rings of flesh: down to the stockings, glistening white skin' (Gadda 1984:70). The two white patches of the thighs and the underpants frame the 'furrow of the sex' (Gadda 1984:70). This is transposed from the plane of death and abjection onto that of voyeuristic wish fulfillment, through its association with a holiday memory:

it was like being at Ostia in the summer, or at Forte dei Marmi or Viareggio, when the girls are lying on the sand bathing themselves, when they let you glimpse whatever they want. With those tight jerseys they wear nowadays (Gadda 1984:70).

In this context, the male remains a passive onlooker, as if reduced to, and identified with the gaze. The last sentence suggests the perspective of a person distanced by age and conditioning from the objects of desire. They are part of a 'nowadays' to which he is an outsider. The object of his gaze remains at a distance, the subject of fantasy; what he sees cannot be seen. Provoking the gaze, yet veiled by 'those tight jerseys', it remains a shadowy silhouette (cf Lacan 1986:182)

The investigator's sexual admiration for the victim is announced early on in the novel. In the

sequence of the Balduccis' dinner party, attended by Don Ciccio, the narrator, conveying Ingravallo's perspective on the scene, observes: 'Signora Liliana...was a desirable woman' (Gadda 1984:19). This could be taken as merely an aesthetic judgement, even a statement of fact. However, when he learns that *la Menegazzi's* assailant "'rang Signora Liliana's bell'", but that she did not respond "'because...She was in the bathroom...yes...she was taking a bath'" (Gadda 1984:24-25), Ingravallo seems to be seized by an erotic fantasy which he tries in vain to dispel: 'Don Ciccio, involuntarily, passed a hand over his eyes, as if to shield them from a sudden, too-dazzling brightness' (Gadda 1984:25). After the *signora* had given her testimony in the Menegazzi case, the reader is informed that 'the vision had filled him with bliss' (Gadda 1984:35). Together with the erotic fantasy about the *signora* in her bath, this suggests that, confronted with the victim's beauty, the investigator becomes as if beside himself.

In death, her body is subjected to, delivered up to his gaze. The investigator comes to occupy the position of a voyeur, who desires the woman he observes unknowingly to expose herself or be exposed in front of his eyes, thus gaining control over her body and vicariously satisfying his desire. By exposing the victim's body for a reason which remains unclarified, the murderer thrusts Ingravallo into the position of a voyeur and fulfills his repressed wishes. Instead of finding themselves at different poles, murderer and detective thus become accomplices. Thanks to the murderer, Ingravallo is able to indulge his voyeuristic tendencies unsuspected and with impunity: as the representative of reason and justice, whose task it is to punish transgression, he is expected to observe the victim's body with close attention to minute detail.

The investigator's desire and admiration are not focused exclusively on the victim. At the dinner party, he recalls the *signora's* previous 'niece' (Virginia?): 'she'd fill up a whole bed by herself: those eyes! and what a front! what a behind! Something to make you dream at night' (Gadda 1984:8). The poor male, it seems, would be almost superfluous for this superb creature brimming with sexuality. Her charms are viewed in terms of their 'anatomical location', 'front' and 'behind', and thus depersonalized: she is a sex object *par excellence*, all the more intimidating and unapproachable for that. The 'dazzling niece of the previous visit' (Gadda 1984:11), she exercises a 'strange fascination', and is experienced as mysterious, beyond reason, obliterating rational understanding. This fascination is integrated into mythical, historical and artistic contexts, and thus intellectualized ('Latin warrior virgins...the girls drawn by Pinelli' Gadda 1984:11). As with the reference to Michelangelo's suppression of the female sex, the male tries to sublimate his desire in order to evade the gravitational pull of pure carnality.

A similar fascination is attributed to the *signora's* maid, Assunta (Gadda 1984:11). The male's attempt at intellectualization is subverted by the banalization and sexualization of the 'Ptolemaic

system' (Gadda 1984:11). The scientific paradigm, with its connotations of strict rationality, becomes a metaphor for the pull of Assunta's erotic fascination, exercised by a certain part of her anatomy: 'In the center...of the whole...Ptolemaic system: yes, Ptolemaic. In the center, meaning no offense, that terrific behind' (Gadda 1984:11). The investigator's oscillation between an intellectual framework of reference and sexual excitement does not amount to a sex-intellect dichotomy. Rather than opposite poles, the rational and the instinctual become intertwined, creating a disturbing ambivalence.

In order to regain equilibrium, Ingravallo 'had to repress, repress' (Gadda 1984:11). The ideal he strives for is 'harmonious discipline', 'imagined architectures' which would enable him to transcend 'the ambiguous derogations of the senses' (Gadda 1984:11). Through repression, he might be able to take refuge in the order and symmetry of reason, which traditionally stands in opposition to the disorder and disruptive energy of the instinctual, especially of female sexuality. Unable and unwilling to avert his gaze, however, Ingravallo cannot view the feminine with the detachment necessary to equilibrium. At the conceptual level, where he is conscious of his position as official and outsider, reason and sexuality seem to be viewed as poles apart, but existentially, they interact, become intertwined, a single driving force.

These impulses are reactivated, though with less intensity, by the presence of the key witness, Ines Cionini. The essence of her beauty is experienced 'in male delirium' (Gadda 1984:199). In the eyes of her interrogators, she emanates an aura which makes her seem unfettered by the restrictions of rationality: 'the true and basic sense of the life of the viscera, of hunger: and of animal warmth...far from all lowly pragmatic considerations' (Gadda 1984:199). When she appears before her interrogators a 'gust of the wild, not to say worse, breathed into the room; a small: "Mmm! get a load of that!" all of them said to themselves, mentally' (Gadda 1984:197). Viewed as a 'rather well-supplied girl, with two marvelous eyes in her face...but...incredibly dirty and disheveled' (Gadda 1984:197), she appeals to the sense of smell, more than to the visual. Initially, the interrogators' admiration for her beauty is qualified by her uncivilized appearance; hence the detached amusement, even irony, with which she is treated: 'her fancy-man...Who, they all thought, must have met her and perhaps even...treated her with some tenderness...in a period far closer to her latest bath' (Gadda 1984:199).

In the case of Ines, the sexual element is downplayed, despite the investigators' acute awareness of her carnality. Even the reference to 'animal warmth' is not purely sexual. By contrast to the presentation of the other female protagonists, no references are made to the specifically sexual parts of her anatomy. At the same time, her credibility as a witness is repeatedly undermined through narratorial comments such as: 'Ines lowered her eyes: she blushed, to gain time, to

fabricate her seventy-third lie' (Gadda 1984:227). The low level of sexual interest she arouses is coupled with scepticism on the part of the investigators. This seems unjustified, since her testimony enables them to identify the main suspects, Diomede Lanciani and Enea Retalli. The interrogators' assessment of her evidence, it seems, is partly determined by the intensity of sexual interest she stimulates in them. Her evidence is not weighed in an objective, purely rational manner, which reaffirms the inescapable interaction between rationality and the instinctual.

Ingravallo again meets signora Balducci's maidservant, Assunta when he goes to question her. There is a vague possibility that she was an accomplice to the murder. The detective also considers it suspicious that she did not attend the victim's funeral (Gadda 1984:382). He therefore approaches her 'with the steady, cruel eye of one who wants to unmask deceit' (Gadda 1984:381), who wants to establish the truth at all costs.

He is first confronted by her eyes: 'Ingravallo found himself facing...a face...a pair of eyes! gleaming in the penumbra' (Gadda 1984:379-380). This recalls his view of Assunta at the Balduccis' dinner party: 'in the center those eyes of Assunta's' (Gadda 1984:11). On this occasion, she inspired a disturbing erotic fascination in him: 'He tried to repress the admiration Assunta aroused in him' (Gadda 1984:11). At their second encounter, her beauty is again experienced as disconcerting, mysterious, ineffable: '"Her! Her!" he meditated, not without a composite beating of the heart: the stupendous maidservant of the Balduccis' (Gadda 1984:380).

From her eyes and face, his gaze shifts to her breasts: 'that bosom! which Foscolo would have certified as a brimming bosom' (Gadda 1984:380). The elevation of her breasts to a potential poetic motif is indicative both of his admiration and his inability to confront them in the flesh; they can only be rendered manageable viewed as potential literature; not as carnal objects, but as signifiers which refer to texts; placed between quotation marks. This echoes the extraordinary impact of her 'terrific behind' during the dinner party (Gadda 1984:11). Recalling the scene, Ingravallo elevates her to the level of the mythical or superhuman: she is described as a 'black and silent goddess' (Gadda 1984:380). Ingravallo is aware of the ambivalence of his position: on the one hand, his cognitive involvement in the investigative process, aimed at avenging the victim; on the other, almost unbounded sexual admiration for a suspect. In his manner towards Assunta, he is therefore 'harsh as he was required to be, at that moment, his "other" soul' (Gadda 1984:381). The suggested split between the rational process of investigation and sexual admiration ('"other soul'), however, cannot be maintained; Ingravallo never succeeds in establishing an impersonal distance.

Assunta's behaviour seems to justify the detective's suspiciousness. When Ingravallo tells her that

the name of the murderer 'and where he lives: and what he does' (Gadda 1984:387) is known to the police, she pales, but remains silent. In reaction to persistent questioning, the narrator tells us, she tries 'to gain time, hesitating' (Gadda 1984:387). This rather incriminating bit of information should be read together with a possibility mentioned further on: 'the girl implored them, simulating, perhaps, and in part enjoying, a dutiful fear' (Gadda 1984:388). It is not clear whether Ingravallo is aware that she may be playing a game; the possible irony underlying her apparent subservience and the sexual *frisson* being 'grilled' by the detectives may evoke in her do not seem to penetrate Ingravallo's consciousness.

The qualifier 'dutiful' suggests that Ines is not at all intimidated by Ingravallo, but is leading him by the nose; and perhaps by something else, too: the basis for her refusal to be intimidated is 'an undaunted faith in the expressions of her flesh, which she seemed to hurl boldly to the offensive' (Gadda 1984:388), while denying all knowledge of the crime. Ingravallo is pulled up short by this. The section, and with it the text, ends on an enigmatic note:

He didn't understand, then and there, what his spirit was on the point of understanding. That black, vertical fold above the two eyebrows of rage, in the pale white face of the girl, paralyzed him, prompted him to reflect: to repent, almost (Gadda 1984:388).

There is a suggestion here of the detective at last, retrospectively understanding the whole 'mess'. The narrator seems to suggest that at a point in time much later than the events narrated, understanding dawned on Ingravallo. That unspecified vantage point lies 'beyond the text'. The possibility of eventual clarification constitutes a potential text, which is hinted at, but does not influence the existing one. The reader cannot even be sure that the enigma Ingravallo is on the point of understanding concerns the crime itself. Together, the lack of a solution and the fact that the detective's failure is not positively confirmed create a radical open-endedness which leaves the reader in mid-air - a complete departure from the conventions of the detective novel, which dictate that the story should be neatly closed off. The ending of *Quer pasticciaccio* is neither a conclusion, nor a cyclic beginning, the text twisting back upon itself, as in Joyce's *Finnegans wake*, nor the embryo of a continuation; it is wholly undecidable.

At the point where the narrative breaks off, Ingravallo might be on the verge of viewing the available evidence in a new light, proposing a hitherto unexpected hypothesis; of identifying a vital new clue; of understanding an aspect of the case which will enable him to achieve a breakthrough. The question is, what could he be on the point of understanding? The suspects are known, the most important clues seem to have been identified; the interview with Assunta does not introduce

new information; no elements are introduced which seem likely to form the basis for an inspired guess on the detective's part. The ending merely stirs the murky waters of the case.

Assunta's words, "'it wasn't me!'" (Gadda 1984:388) could be taken to mean that she did not kill the *signora*; or that she was not the murderer's accomplice, but knows who was; and so on. All interpretations of the passage inevitably remain speculative. It is the turning point where the text could have reverted back to monist closure, for example by introducing an inspired guess by the detective which would have led to a solution. Instead, it remains within the framework of open-ended pluralism, at the cost of suggesting that, faced with multidetermination, cognitive rationality can only propose undecidable hypotheses.

The inconclusive ending is directly linked to the 'black, vertical fold' (Gadda 1984:388) which paralyzes the detective's powers of reasoning. As indicated by De Benedictis (1991:144-145, 162), this 'fold' is analogous to the victim's sex; variously referred to as 'that central line, the carnal mark of the mystery' (Gadda 1984:68), the 'furrow of the sex' (Gadda 1984:70), 'the swell and furrow of voluptuousness' (Gadda 1984:84). This is the dangerous and ineffable mystery to which the investigator is obsessively drawn, yet is unable to confront directly, and thus, to clarify.

Despite the element of voyeuristic wish-fulfillment in the position of the victim's body, her sex remains veiled by 'white underpants' (Gadda 1984:68). It is simultaneously offered to and withheld from the detective's gaze. The same could be said of the charms of the girls at 'Forte dei Marmi or Viareggio' (Gadda 1984:70), which seem to be freely on display. The mystery offers itself to, yet evades the gaze of desire.

The female sex is the point where knowledge and understanding, intersecting with frustrated desire, break off. Like a black hole, it exerts a strong gravitational pull which attracts the gaze and the light of reason but prevents them from escaping: it is a dark mirror, a faceless face; the fold of the sex encloses a mystery which remains empty because it cannot be named. Thus, it becomes a metaphor for undecidability and indeterminacy. "Linked to birth and copulation, it confronts the detective with the mystery of his own origin *inter faeces et orinam*. By tracing the fold through the gaze, he is drawn into a fractal trajectory which leads to infinity (cf 1.4). The gaze does not loop back to the subject, but floats off into indeterminacy.

Some of these elements recur in the other investigators' confrontation with the feminine.

The motif of the male's gaze wandering under women's skirts in obsessive search of the ineffable mystery recurs in Ines Cionini's testimony. Referring to Diomedè's work as part-time electrician,

she remarks: "well, if we women do it, you can see everything...I mean, garters and all the rest" (Gadda 1984:248). It also recurs in the description of Zamira's workshop, where the carabinieri are confronted with the 'scent of country women, in short skirts' (Gadda 1984:207). They, too, are not unwilling to display their charms:

feet on the crossbar of the chair, so that, if one
 assumed a position of vantage, there were panoramas
 - you can imagine. What thighs! (Gadda 1984:208).

The 'position of vantage', one assumes, would be eagerly, hopefully sought. Zamira's workshop could be an ideal hunting ground for the indulgence of voyeuristic obsessions: 'Stockings - never even dreamed of. Underwear? Hm. The mountain women wore more' (Gadda 1984:207).

In the translation of Gadda's text, the desire to explore the casually revealed vistas of women's thighs, and more, is implied to be common to all men: 'A man's gaze plunged the penumbra...' (Gadda 1984:208). The original simply refers to 'Lo sguardo', 'The gaze' (Gadda 1983:188): an impersonal projection of desire, freely floating.

Caves and chimneys are compared to the penumbral secrets of the feminine: 'It (i.e. the gaze) wound, it climbed along the passes of hope, as an explorer of caves dives and climbs, or a chimney sweep' (Gadda 1984:208). The carabinieri are especially active in this regard: 'Not to mention carabinieri!...their eyes never stopped searching' (Gadda 1984:208). The gaze never reaches a steady state, but is forever probing, fluctuating, driven onwards by what lies beyond its reach, just outside the illuminated frame of vision.

This motif was introduced in at least one of Gadda's earlier works:

ciò non toglie che molti rubino a man salva e le donne
 abbiano le sottane così corte, che quando son
 sedute, gli si vedono le cosce, le giarettiere,
 le mutandine, fino alla punta di Bellagio, anzi
 fino alla villa Serbelloni (Gadda 1971:10)

In *That awful mess*, it becomes an obsession linked to the problem of knowledge and understanding; it is part of a sexual fixation, but also of the subject's exasperation in the face of a world beyond reason.

The choice to wear short skirts without taking the precautions usual to 'respectable' women suggests a willingness to let the mystery into the open. In reaction to the carabinieri's insistently wandering gaze, Zamira's seamstresses adopt an attitude of defiance, not timid respectability. Instead of encouraging the seekers of the mystery, this paralyzes and discourages them: 'And the

eyes that came back to them! Eyes? Furtive arrows, that make the heart die in the chest, of those standing carabinieri' (Gadda 1984:208). Similarly, Assunta responds to Ingravallo's attempts at intimidation by hurling 'the expressions of her flesh...to the offensive' (Gadda 1984:388), thus paralyzing the investigation. The mystery remains intact, inaccessible even to vicarious penetration, precisely to the extent that it aggressively offers itself.

Another key witness who becomes the object of voyeuristic scrutiny and vicarious sexual pleasure is Lavinia Mattonari. Seated next to her in a buggy, one of the carabinieri is delighted at 'the tepid contiguity of the girl's thigh' (Gadda 1984:301). Sensitive to feminine beauty, he 'promptly' perceives and appreciates 'the odor...of feminine vitality', and finds being seated next to 'such a "supple" and "nice" young lady ...disturbing' (Gadda 1984:301). Further on, she is observed in a posture which 'granted her, beneath her arms, sufficient room to lodge there and almost conceal, disdainful now and intolerant of glances, the tepid weight of her teats' (Gadda 1984:332). When she and her cousin, Camilla, start quarrelling, corporal Pestalozzi notes the palpitations of her breast, 'most desirable' (Gadda 1984:335).

The adjective 'tepid', used twice in connection with parts of Lavinia's anatomy - 'the tepid contiguity of the girl's thigh'; 'the tepid weight of her teats' (Gadda 1984:301, 332) - also occurs in the description of the victim's body: 'those two thighs...had lost their tepid sense' (Gadda 1984:68). Vitality is presented as a distinctive attribute both of Lavinia and of the feminine in general: 'the odor of feminine vitality' (Gadda 1984:301). The adjective 'tepid' is linked to vitality, in that it indicates the presence of life: the 'tepid sense' of the victim's thighs is set against the 'chill of the sarcophagus and of man's final abode' (Gadda 1984:68). It could also be associated with mother's milk and the womb, and thus with the origin and sustenance of life. This again suggests that a confrontation with the mystery of their own life and death is embedded in the investigators' acute, even obsessive awareness of female carnality in its various manifestations.

In all the instances of woman as seductress, the eyes feature prominently. At the Balduccis' dinner party, the focus of interest for Ingravallo, apart from her 'terrific behind' are 'those eyes of Assunta's' (Gadda 1984:11). When he again confronts her, to question her as a suspect, he first of all notices 'a pair of eyes! gleaming in the penumbra' (Gadda 1984:379-380). Recalling Virginia, during the dinner party, he remembers 'those eyes!' (Gadda 1984:8). Don Lorenzo also mentions them in his testimony: 'Those eyes!...they flamed up suddenly in a black lucidity, narrowed, apparently cruel' (Gadda 1984:184). Zamira's seamstresses, displaying their charms with apparent insouciance, challenge the searching gaze of the carabinieri with their eyes, which shoot 'Furtive arrows!' (Gadda 1984:208).

While the voyeuristic gaze of the investigators is associated with sexual desire and the search for knowledge, and thus, with the quest for control of the ineffable mystery of the feminine as manifested through the body and the integration of the disruptive energy of the instinctual into a rational framework, the eyes of woman as seductress are associated with aggression, cruelty and defiance. The investigators' wandering gaze is a metaphor for their largely unsuccessful search for knowledge and understanding; the eyes of woman as seductress, for the mystery which boldly offers itself yet eludes penetration.

The only instance in the text of a naked female sex occurs in Pestalozzi's dream (Gadda 1984:265-269). The central element in the dream is a topaz, similar to the ones stolen from Countess Menegazzi (Gadda 1984:265). In this vision, the 'female pupils' surrounding the 'Contessa Circea...writhe, stark white except for the thicket triangle...they wriggled in silent offering' (Gadda 1984:267). Having escaped from the Contessa, the topaz is transformed into a 'yellow rat' (Gadda 1984:266). It reaches the pupils, 'Falling at that point between their legs' (Gadda 1984:267), and frightens them. The Contessa, however, undaunted, raises 'her skirt, in front, revealing to one and all that she was wearing underwear. She was wearing it, the sainted woman: yes, yes, she was' (Gadda 1984: 269). The rat/topaz climbs up her thighs, 'fat and trembling in his terror' , towards her underpants, which 'were made of cardboard and plaster...that time. Because once, in life, they had put a plaster cast on the trap' (Gadda 1984:269).

This bizarre vision dramatizes the connection, in *That awful mess*, between female sexuality and indeterminacy. Because of its link with the Menegazzi robbery, the topaz can be viewed as a metaphor for the investigative process. Transformed into a rat, it resembles the investigator, who also ferrets around in dark and unmentionable corners. Its appearance causes the 'pupils' to switch from overt sexuality to prudish defensiveness. Even in their nudity, despite the 'silent offering' suggested by their movements (Gadda 1984:267), the 'furrow of the sex' (Gadda 1984:70) remains partly veiled by the 'thicket triangle' (Gadda 1984:267).

The Contessa's raising her skirt and the repeated confirmation that she is wearing underwear is symptomatic of the obsession with women's underwear as a barrier to full possession of the mystery and thus, as instrument of seduction. At last, it seems, the mystery will be brought into the open: the rat/investigator will easily gnaw through the underpants 'made of cardboard and plaster' (Gadda 1984:269). Yet this is a fatal deception: the flimsy barrier hides a trap, the trap of the mystery itself. Should he tear away the veil, the rat/investigator will be sucked into and annihilated by the black hole of the mystery. Penetration of the mystery will lead to ignorance and obscurity.

De Benedictis notes that,

La misurazione e il possesso del mondo femminile,
col relativo appagato sentimento di 'penetrazione',
equivale per Gadda alla istanza di chiudere il giro
complessivo della conoscenza - da dove si è venuti,
lì si finisce (De Benedictis 1991:147).

Indeed, the victim's body, surrendering itself in death to the voyeuristic gaze of the investigator, observed with obsessive attention to minute detail, is the starting point for the main investigation. The circle which has as its starting point the 'furrow' of the victim's sex breaks off at the 'black, vertical fold' confronting Ingravallo at the end. As the evidence turned up by the investigative process remains inconclusive, so the feminine, manifested in the body as object of desire, is inscribed in a broken circle. It offers itself to the searching gaze of the male, yet remains elusive, out of reach: by offering itself, it is withdrawn. Thus, it becomes a metaphor for a plural reality which is beyond the grasp and control of reason, and by which the investigator, as representative of cognitive rationality, is rendered as if beside himself.

Through the interaction between investigator and enigma, the illusion of objective rationality in the 'Holmes-Descartes tradition' is destroyed and replaced by the inextricable intertwining of the rational and the instinctual. Caught in the fractal complexity of multidetermination and rendered powerless by the ineffable mystery of the feminine, the investigator is brought face to face with the enigma of life and death, of his own being in the world.

4.4 The body in the labyrinth

The female body as object of desire is a metaphor for a plural reality which is beyond the grasp and control of reason. At the same time, its carnality constitutes one of the few certainties left to Ingravallo and his fellow investigators.

The investigation moves outwards from virtually the only incontrovertible piece of evidence it uncovers, the victim's body. Its moves are dictated by the unpredictable results achieved; it progresses like a highly irregular spiral.

By contrast, in the Holmes narratives, the problem is viewed as a given and examined from a fixed, privileged point of vantage. This invariably results in the vindication of optimistic rationalism. Holmes's perspective is determined by a particular philosophical orientation, which remains

unchallenged; no plurality of approaches is tolerated.

The most frequently sounded notes in the ideological register of *That awful mess* are crude misogyny and a visceral hatred of Il Duce, Mussolini, symptomatic of a violent anti-Fascism. Neither is vital to the investigation. Ingravallo's pluralist conception of causality (cf Gadda 1984:5) does not provide a solid basis for knowledge production, but fits in with the pervasive tendency towards pessimism and scepticism, even cynicism, which lies at the heart of the text.

His obsessively lingering gaze is not moved primarily by meticulous attention to detail *à la* Holmes, but by frustrated desire. As object of the voyeuristic gaze, the victim's body inescapably continues to haunt the detective throughout the investigation. It offers itself as an object of perception, addressing the body through the senses.

Similarly, the other female bodies observed and desired by the investigators are hard nuggets of undeniable reality in an investigative process chronically handicapped by unreliable or inconclusive evidence. The gaze of male desire dwells on the surfaces of the female body, on what constitutes it as an object in space. This is coupled with insistence on the vitality of the feminine, with the certainty of its *Dasein* as bodily becoming in timespace: being there, in the world, is a process of becoming in and through the body: 'wir leben, indem wir leiben' Heidegger 1961:119). ['we live, inasmuch as we are as bodies']

The female body addressing itself to the investigator as *leibende Leben* via the gaze is a certainty, independent of rational analysis and explanation; it simply is: 'Vielleicht ist dieser Leib, wie er leibt und lebt, das "Gewisseste"' (Heidegger 1961:565). ['perhaps is this body, as it lives and is as body, the most certain']

The female body is viewed as *Gegenstand*, as that which presents itself in confrontation with the subject. It stands in opposition to the investigator's quest for neat, rational explanations and eludes the gaze in a game of seduction. It is never perceived as a solid whole, but constituted as random fragments captured in ephemeral glimpses.

For Gadda's detectives, the female body is not accessible in itself. Traversed by the gaze, it is actualized in and through the body of the investigator as it passes across his field of vision. The detective-observer's 'sightings' of the feminine can be represented as a set of randomly distributed points. Each point is inscribed in the random trajectories of a multiplicity of relationships which pass through it. It hides an 'infinite regress of detail' (Hofstadter 1987:384), and is in fact a collection of points of which the number can be infinite: 'L'événement est une vibration, avec une

infinité d'harmoniques ou de sous-multiples' (Deleuze 1988:105). ['The event is a vibration with an infinity of harmonics or submultiples' (Deleuze 1992:77)] As the random intersections of the gaze and the female body form certain patterns (see 4.3), so the other random trajectories could each have its own strange attractor. This recalls the fractal complexity described by Mandelbrot (see 1.4), an infinite kaleidoscope of patterns within patterns of which no overview is possible.

The rationality of Gadda's detective is not merely a cognitive tool, situated in, but independent of the body. It is affected by the pulses and perceptions traversing the body. Embedded in the spatio-temporal becoming of the *leibende Leben*, it is situated at shifting time-space coordinates, which correspond to a series of points, each containing an infinite density of points. Osmotically connected to, not outside and above the perpetual flux of reality as transcendental subject (cf Husserl 1950:58-66), it breaks down and is reconstituted at each new set of coordinates. Thus, it occurs as a series of disconnected happenings, instead of constituting a continuous linear process. Rationality itself follows a erratic trajectory with its own strange attractor, the rational or reason. Thus, reason itself can be viewed as a regulative pattern, not as the universal *Grund* of classical rationalism. Rationality defines itself with reference to particular contexts, but its relationship with reason can be a universal constant.

Within the context of indeterministic objective realities, rationality cannot be compared to a set of tools in a box from which one selects as required, but is draped and redraped in different folds like a piece of cloth, virtually *ad infinitum*, in accordance with the shifting patterns of the world:

le labyrinthe du continu n'est pas une ligne qui
se dissoudrait en points indépendants...mais comme une
étoffe ou une feuille de papier qui se divise
en plis à l'infini ou se décompose en mouvements
courbes, chacun déterminé par l'entourage consistant
ou conspirant (Deleuze 1988:9).

Deleuze's description of the time-space continuum recalls both Mandelbrot's fractals and Cournot's multidetermination (cf Morin 1988:420; see 1.4).

Cognitive rationality, embedded in the *leibende Leben*, follows, but is not perfectly synchronised with the becoming of the world. It arrives where the world in flux has already been. Thus, its construction of objective reality is a conjectural reconstruction which charts the tortuous wanderings of *Werden* and relays the echoes of a presence already past. Like a star lightyears removed, the 'real' world here and now remains elusive.

Both the subject as *leibende Leben* and the world which becomes towards him through the body

are possibilities, not finalities: 'Das Lebendige steht und hält sich je in einer Durchblicksbahn auf einen Umkreis von Möglichkeiten' (Heidegger 1961:622). ['The living always stands and holds itself in a viewpath which opens up on a surrounding circle of possibilities'] In its attempt to construct explanatory narratives, cognitive rationality can only propose possible versions of the world, the world as possibilities. This is reflected in the inconclusiveness of Ingravallo's investigation.

Even if the investigators had succeeded in identifying the culprit, only a partial explanation of his motives would have been possible. The criminal act itself is part of a series of impulses which traverse the body and by which it responds to the world. Some occur at the subjective level, and are constituted by natural tendencies, interaction with the *Umwelt*, the subject's previous history, and so on; others operate from the outside (cf Deleuze 1988:94-95). The event of the crime is determined by the random interaction of a multiplicity of tiny perturbations in the criminal, the victim, their environment, their past histories and so on (cf the 'butterfly effect', 1.4).

Situated at specific, yet unpredictable timespace coordinates, the criminal event is made possible by the convergence of different chains of causal factors acting on and in the subjects involved and a favourable set of external circumstances. It is part of a system within a multiplicity of systems which display sensitivity to initial conditions (see 1.4): a change to any of the elements in these systems could change the event itself, prevent it from happening or introduce a different victim. The texture of reality is unpredictable and inconsistent (cf Deleuze 1988:105). This Gadda describes as a 'mess', a *gliuommero*, that is, a knot or a tangle (Gadda 1984:5). At the centre of the tangle lies the body of the victim, the carnal feminine, traversed by the gaze projected from the investigator's body.

4.5 Synthesis

In order to explain the murder, the detective would have to unravel the systems involved. Even after the event, these do not constitute an immutable given, but are rendered unstable by the network of impulses, instinctual drives and perceptions which interact within the investigative process. The systems cannot be analysed as a totality, partly because they are too complex, partly because both investigator and investigation are themselves in a state of flux, which generates constantly shifting perspectives.

The only solid element at Ingravallo's disposal is the female body. This confirms the validity of his dictum, "'you're sure to find skirts where you don't want to find them'" a 'belated Italian revision of the trite "cherchez la femme" (Gadda 1984:6). More precisely, the dictum confirms itself, in that the investigators are haunted by the seduction of female carnality and the most useful evidence

almost accidentally turns up through the interrogation of female witnesses.

Ingravallo's failure to solve the case supports his notion of the *gliuommero* (Gadda 1984:5), of each event being the result of a tangle of causes. His conception of causality admits a multiplicity of possibly conflicting hypotheses, none of which can be ruled out as intrinsically 'impossible'; it is inevitably possibilist and pluralist (cf 1.5). Ingravallo's position could be described as anti-ideological, that is, strongly opposed to facile, totalizing solutions. De Benedictis (1991:157) views this as one of the reasons for his antipathy towards men who easily achieve success with women, for whom the mystery seems to be transparent and easily controllable. It also helps to explain his self-doubt and cynicism, his violent hatred for the loudly self-confident machismo of Il Duce's fascism, .

Such anti-ideological pluralism is in complete contrast to the dogmatic rationalism of the Holmes narratives and the hegemony of a monolithic, totalizing Reason. Ingravallo's failure implies that the supremacy of rationality as instrument of cognition and problemsolving is radically undermined by indeterministic reality. At the same time, it frees cognitive rationality from the shackles of dogmatism and homogenization, from the demand for positive confirmation.

CHAPTER 5

In the labyrinth: random complexity

5.0 Introduction

The rejection in *That awful mess* of dogmatism and problematization of cognitive rationality does not imply a denial of causality as such. Don Ciccio insists that 'we must reform within ourselves the meaning of the category of cause' (Gadda 1984:5), not that it should be discarded. Gadda's text presents a world characterized by multidetermination. The events and actions it narrates are not presumed to be merely accidental; on the contrary, the investigators never abandon the idea of explaining the crimes in terms of cause and effect. Their search for a clearcut solution implies the acceptance of objective truth as regulative principle (cf 1.5).

The same could be said of the texts by Stanislaw Lem here discussed. Lem's writing reflects his thorough grounding in mathematics, statistics and philosophy (Lem 1984:255-260). He primarily achieved renown as the author of science fiction novels which often constitute a critique of technico-scientific rationality (such as *Fiasco*, *The invincible* and others). The texts discussed here are detective novels which present a radical subversion of determinism. They go beyond Gadda's by suggesting that causal relationships are governed by chance and presenting the objective world as a chaotic system regulated by probability.

Events and actions in this chaotic world have a certain probability, but it cannot be calculated precisely. As a result, the explanatory statements made by Lem's detectives are undecidable in a sense loosely corresponding to Tarski's definition of undecidability in theories. According to the definition, a theory is decidable 'if the set of all its valid sentences is recursive', that is, if it can be determined in each case whether a statement belongs to the theory (Tarski 1971:12-14).

In *The investigation*, for example, it is impossible to decide whether all the facts of the case can be integrated into the solution proposed at the end, and whether the possible alternatives would simply be an extension of the final hypothesis, that is, whether it would introduce certain variables, such as a different culprit, or would necessarily imply alternative theories. In *Chain of chance*, it is impossible to determine whether the solution proposed is fully compatible with the information about each case, and whether statements about similar phenomena could be integrated into the theory; if the series of events were to be continued, would the theory still be adequate or would alternatives be required?

5.1 The investigator in a random universe

The case presented in *The investigation* (1959) concerns the mysterious movements of a number of corpses in a certain geographic area of England. Initially, the corpses seem to be moved around at night, but the matter is not taken further. The police intervenes when several corpses disappear from the mortuaries in which they have been lying.

The problem is a burlesque variation on the usual detective novel pattern: the 'victims' do not have to be murdered, since they are already dead; it is suggested that the corpses might somehow be capable of movement on their own; there is no indication of the involvement of a specific culprit; perhaps no crime was committed. The absence of a likely suspect gives rise to fantastic speculation as to how the (pseudo?-)crimes were committed.

In view of the nature of the problem, the investigation could be read as a 'sendup' of traditional detectives' feats of ratiocination and problemsolving. Ingravallo's failure could be viewed as confirmation that he is merely a bungling caricature of heroic figures such as Holmes and Poirot. Such a reading would be quite plausible, yet it will become apparent that, in the light of the conceptual framework for this study, an alternative is proposed.

The text opens, quite conventionally, with a résumé of the problem, presented by two of the detectives involved, Farquart and Gregory. This is unconventionally followed by a second résumé, presented by the unofficial investigator, the statistician Sciss. After a *captatio benevolentiae* - "'I consider your invitation to be a useful novum'" (Lem 1974:15) - he states that, in this instance, "'the classical methods of investigation - the collection of evidence and the search for motives - have failed completely'" (Lem 1974:15). A considerable amount of meticulously recorded data is available, yet no plausible theory has been put forward to explain them. As a result, the events seem quite senseless.

The police's dilemma is expressed by Gregory: "'until you have a specific theoretical structure to fit the facts into, there's no point in collecting evidence'" (Lem 1974:189). This is in agreement with the notion that observation could only be meaningful if it is linked to a particular problem or hypothesis (Popper 1979:259). In the words of Darwin, quoted by Popper: 'How odd it is that anyone should not see that all observation must be for or against some view' (Popper 1979:259). The police should at least have proposed a working hypothesis or 'inadequate solution' on the basis of the available data, which could then be criticized and modified as further data were collected

(Popper 1979:260). However, no hypothesis has been advanced, which leaves the data disconnected and the investigation undirected.

Sciss proposes to solve the dilemma through the 'statistical method of investigation' (Lem 1974:15). This involves the precise ordering of objective data according to statistical principles, and the partial substitution of traditional methods of detection with abstract conjecture.

A comparison of Sciss's methodology with Holmes's indicates that the latter is often based upon intuitive inferences derived from observable phenomena. The inferences can be described as intuitive inasmuch as they are based upon previous experience or empirical knowledge which enables Holmes to 'leap to conclusions' in a single linear move; they are not pure guesswork based on a 'gut feeling', as they are always explained in terms of logical reasoning. The linear progression from observation to inference is underpinned by the *a priori* assumption that phenomena can be definitely explained through rational analysis, and that the objective world is inherently orderly and consistent.

Such an assumption is incompatible with the bizarre problem facing Lem's detectives. Accordingly, Sciss does not propose hypotheses, but aims to achieve an exact, objectively verifiable, 'structural' analysis of the data according to statistical principles. He proceeds non-intuitively, identifying those elements 'that are common to all the incidents, or at any rate, to a substantial majority of incidents' (Lem 1974:16). He uses 'the time elapsed between any two incidents', the 'distance separating any two consecutive disappearing-body sites from the center' and the 'differential between the prevailing temperatures at both sites' to calculate a constant, which is used to determine the location of the 'causal factor of these phenomena', as well as their 'geometric center' (Lem 1974:19). His calculations are motivated by the principle that, 'regardless of the degree of difficulty, there is always a definite correlation, a valid basis for a discussion of causes and effects' (Lem 1974:20). No doubt a mathematical or statistical correlation could usually be found for any set of events, and Farquart's sarcastic reaction to Sciss's theories (Lem 1974:20) indicates the police's scepticism about the chances of Sciss's approach enabling them to identify the criminal.

The third section of chapter 1 contains a discussion of various hypotheses put forward by the police, all of which are refuted, as well as part of a theory proposed by Sciss (Lem 1974:24-30).

The possibility of necrophilia as a motive for the crimes is rejected because according to the police, their complexity is incompatible with the psychological profile of the typical necrophiliac (Lem 1974:23). Any other kind of insanity is also ruled out on basically the same grounds: the crimes

were planned and committed with great precision, while 'Madmen don't operate so methodically' (Lem 1974:24). This is too much of an unsubstantiated generalization to be acceptable; at most, insanity as a motive could be regarded as improbable. The possibility that the criminal may be a paranoiac or a psychopath should, however, be admitted. What is at stake here is not the actual psychological makeup of the criminal - this receives scant attention in the rest of the story - but the admissibility of the hypothesis as such.

The idea that the criminal could be 'some kind of...scientist' (Lem 1974:23) is rejected because it would be quite unnecessary for a scientist to steal cadavers: 'Why steal a cadaver when it's easy enough to get one from the morgue, or even to buy one from the next of kin' (Lem 1974:25). On the basis of the known facts about scientific practice, there is no apparent reason why a hypothetical scientist would do this: 'scientists don't work alone anymore, and even if one had stolen a cadaver, he wouldn't be able to hide it from his colleagues and co-workers'.

The chapter ends inconclusively, Sciss having failed both to establish his authority and to suggest even a provisional hypothesis.

The assumption implicit to Sciss's reasoning is that the world can be rendered intelligible through an objective analysis of quantifiable correlations between events or phenomena. At this stage of the investigation, however, his theorizing does not advance the police's understanding of the problem, but merely demonstrates the possibility of such correlations.

Chapter 3 consists of three sections: Gregory's wanderings (Lem 1974:31-36); his conversation with the Chief Inspector (Lem 1974:37-49); and his return home (Lem 1974:49-63). In the conversation, two further hypotheses are proposed by the Chief Inspector, namely, that 'these disappearing body incidents are only a part...of something bigger' (Lem 1974:43), and that the 'mathematical perfection of this series suggests that there is no culprit' (Lem 1974:45).

The first hypothesis is not based upon factual evidence, but prompted by a visual analogy: as Gregory is unable to identify the objects in the picture he is shown by the Chief Inspector, so, as investigator, all he can see 'is a tiny part of the whole' (Lem 1974:43). The lack of supporting factual evidence does not mean that this hypothesis is necessarily invalid and should be rejected out of hand. It is, however, almost too vague even to be allowed as a working hypothesis, and is not used as such.

The second hypothesis rests on the assumption that a human would be necessarily unable to attain 'mathematical perfection' in performing a series of actions. The assumption would have to be

tested before the validity of the hypothesis could be assessed. As it stands, the hypothesis cannot be accepted, because it rests on an untested assumption (cf Lakatos 1978:173).

Towards the end of Gregory's conversation with Sheppard, several further enigmas are introduced: it is suggested that Sheppard may be withholding information, might even know the solution; he also displays certain inexplicable physical symptoms: the result of age? fatigue? complicity in the crimes? These could be pseudo-enigmas, fabricated by the urge to regard all phenomena as explicable in terms of cause and effect.

Gregory repeatedly appeals for help to the Chief Inspector, as figure of authority and possible source of truth. Sheppard, whose name faintly echoes the concept of a 'good Shepherd', is expected to restore meaningful coherence to a reality apparently fragmented beyond reason. Gregory is puzzled, not only by Sheppard's reactions, but also because he himself was picked to try and solve a hopeless case despite being a mere 'beginner' (Lem 1974:50). Sheppard even tells Gregory that he was not selected because of his competence:

Don't think I picked you because you have any special ability as an investigator, because you don't.

Furthermore, your methods are completely unsystematic.

But it doesn't make any difference (Lem 1974:39).

This is a far cry from the uncritical admiration bestowed upon traditional detectives such as Holmes and others. Moreover, Sheppard seems to suggest that the likeliness of finding a solution is determined by statistical probability or even by chance, not by the level of expertise and intelligence brought to bear upon the case. This is illustrated by *Chain of chance* (see 5.3, 5.4).

Gregory persists in the conviction that something happened in the course of his interview with the Chief Inspector which he is unable to pinpoint: "'There's trouble. Something terrible and irreversible happened this evening...or was it today?'" (Lem 1974:51). However, the basis for his vague suspicions is not specified and they are never confirmed.

Gregory is equally baffled by his landlord, landlady and lodgings. The rooms of the house are 'so high they' seem to 'have been designed for some kind of flying creature' (Lem 1974:55). Despite the 'strange splendour' of their house, the landlord and landlady economize by keeping the 'high gilded vaults' of the ceilings 'in a constant state of semidarkness' (Lem 1974:55). Gregory frequently observes the landlady, Mrs Fenshawe polishing the floor (Lem 1974:57). Defamiliarization, produced through focusing the reader's attention on the slowness and repetitiveness of Mrs Fenshawe's activities and comparing her to 'the black head of a slowly protruding caterpillar whose head was formed by the patterned rug' (Lem 1974:57), further

emphasizes the bizarreness of the household. Gregory is especially exasperated by the mysterious nocturnal sounds emanating from Mr Fenshawe's bedroom (Lem 1974:58-61). He is unable to form a plausible theory about the sounds, and the perfectly banal appearance of the old man's room does not offer any clues (Lem 1974:60). There is no apparent link between the crimes and the sounds heard by Gregory, other than that both sets of events seem quite arbitrary and defy rational explanation.

Reviewing the events narrated in chapter 2, Gregory compiles a list of possible motives for the crimes (Lem 1974:62).

None of the hypotheses proposed in chapter 2 is based upon concrete factual evidence. None is validated, as in the Holmes narratives, by being 'framed' in a particular manner, for example, through supporting narratorial comments. Like Gregory, cognitive rationality, confronted by a series of apparently arbitrary events, can here be compared to a 'struggling, helpless insect trapped in an incomprehensible darkness' (Lem 1974:62). As a defense against this disconcerting reality, it generates consolatory hypotheses. The truthfulness of these hypotheses is secondary to their value as a defense mechanism.

The rest of the narrative focuses mainly on the investigation of a single further instance of attempted corpse removal (Lem 1974:67 *et seq*). After the initial report (Lem 1974:67), the journey to the scene of the crime is described (Lem 1974:68-72). Gregory's initial interrogation of the policeman on duty (Lem 1974:73-75) is followed by an examination of the scene of the crime (Lem 1974:75-77). The investigation *in loco* is continued through alternate interrogation and observation of physical detail (Lem 1974:78-87). Gregory subsequently interrogates various people in connection with the attempted crime, and identifies a possible clue: a 'skinny white kitten' found near the corpse (Lem 1974:95). In conclusion to chapter 3, a partial hypothesis is proposed as to what happened, limited to a description of the possible sequence of actions performed by the eyewitness, Williams (Lem 1974:98).

In chapter 4, Gregory has two lengthy interviews, first with Sheppard (Lem 1974:99-109), then with Sciss (Lem 1974:118-128). A surprise encounter with the Chief Inspector, during which a discussion of Sciss's theories ensues, concludes the chapter (Lem 1974:130-144).

At Sciss's request, Gregory meets him and two of his friends (Lem 1974:152-166). One of the friends satirically demolishes both Gregory's belief in the existence of a 'perpetrator' and Sciss's statistical correlations (Lem 1974:159). Having rented a car for the purpose, he keeps Sciss under surveillance (Lem 1974:170-176), and even arranges a collision between their cars to ensure a

further interview with him (Lem 1974:176-193). The decision to treat Sciss as a suspect is a desperate attempt to corroborate the commonsense notion that every crime is attributable to a specific agent or agents.

The evidence of the key witness to the attempted body snatching reported in chapter 3 is embedded (Lem 1974:200-203) in the final conversation between Gregory and the Chief Inspector (Lem 1974:198-216). The latter decides that the investigation should be dropped, even though the case has not yet been solved. This would be unthinkable in a traditional detective novel, where it is a *sine qua non* that equilibrium be re-established through a clearcut solution.

Gregory's investigation is aimed at collecting accurate data (Lem 1974:73 *et seq*). Unusual aspects of the case are identified for further investigation: the cadaver does not exhibit *rigor mortis* - according to the police, "someone must have interrupted it" (Lem 1974:84); a 'dead kitten' is found on the scene of the crime (Lem 1974:95); the constable on duty fled the scene after drawing his pistol, but not engaging the safety catch (Lem 1974:98).

These aspects are singled out because they do not conform to normal expectations (cf Popper 1979:259-260); they do not 'belong' in the picture. Irregularities could play an important part in knowledge production. Thus, for example, if the sun rises every day as expected, its daily cycles would not be of particular interest, but any deviation from this pattern would constitute an intellectual puzzle. The identification of a problem is the starting point for the production of knowledge (cf Popper 1979:258-260). It would, however, only be worth investigating if it is not trivial, but 'deep' (cf Gleick 1987:3); the investigator does not waste time looking for obvious solutions, but reserves his attention for problems which seem difficult and interesting (cf Popper 1989:229).

The explanation of the phenomena singled out by Gregory could shed new light on the case, yet their connection with the crimes is a mere possibility. For example, if 'someone' did indeed interrupt *rigor mortis*, he would not necessarily be the criminal, although his involvement would be a strong probability. The undecidability of hypotheses concerning separate events is indicated by the lack of direct evidence linking them with the case as a whole (cf Tarski 1971:12-14). Eventually, only the riddle of the dead kitten is solved, but it is found to have no bearing on the crimes.

The first batch of data collected is consolidated in a detailed report presented to the Chief Inspector (Lem 1974:99-101). The report can be divided into three sections: a chronological summary of the case (Lem 1974:99-100); a list of the prints discovered near the mortuary (Lem

1974:100); and some observations elucidating key points (Lem 1974:100-101). It is a detailed presentation of the facts of the case already established and not in dispute. The writing subject intervenes twice, through pointers for the reader - 'N.B. Cat may have slipped' 'N.B. Observation of extremities' (Lem 1974:99, 101) - and is once implied by the adjective 'probably': 'Prints probably formed by boots' (Lem 1974:100). Once, its presence becomes manifest: 'we found stone fragments' (Lem 1974:101). For the rest, it is suppressed, to allow the facts to speak for themselves, and to de-emphasize the implicit presence of an observer and compiler.

The language of the report is terse, even elliptic, as if to minimize awareness of the medium. This conforms to 'scientific objectivity', according to which language is used as a transparent medium, providing direct access to the 'facts'. The almost pedantic precision of the report is exemplified by sentences such as: 'Human footprints found...at distances of 139, 133, and 123 feet respectively from mortuary' 'Distance from path...measured in straight line at shortest point, was 42 feet' and so on (Lem 1974:100, 101). The claim that someone must have impeded the development of *rigor mortis*, is supported by an appeal to authority: "'I made a special point of checking all this with the experts'" (Lem 1974:101).

Once the facts have been established, Gregory has to provide an explanatory hypothesis. The best hypothesis would combine maximum explanatory power with simplicity (cf Kahn 1990:1856). It would only be acceptable if it could not be falsified by any of the data and if it stood up to critical examination and the introduction of competing hypotheses (cf Popper 1979:143-144).

Gregory proposes two hypotheses, both taken apart by the Chief Inspector (Lem 1974:102-105). According to the first, the 'perpetrator' hid in the mortuary. At a certain point, he 'took the body out of the coffin, moved it to the window, and pushed out the windowpane' (Lem 1974:102). The constable on duty went to investigate, saw the corpse being pushed through the window, thought it was moving by itself, and fled. The escaping 'perpetrator' avoided 'leaving footprints by stepping from stone to stone' (Lem 1974:102). The variant hypothesis alleges that the 'perpetrator' arrived later on the scene of the crime, and took a different escape route.

Sheppard points out that there is not sufficient space in the mortuary to provide a hiding place. It would also have been extremely difficult to push the corpse through the window and leave its footprints in 'the snow next to the wall', without attracting the attention of the constable on duty (Lem 1974:104). The constable would not have been frightened by the sight of a moving corpse, as "'he knew very well that he'd been assigned to the mortuary to watch out for just that kind of thing'" (Lem 1974:104).

Sheppard here assumes that the constable would have acted predictably. It is, however, not

impossible that he was frightened by the sight. His behaviour might also have been influenced by unspecified variables. Nevertheless, it is true that Gregory's first hypothesis fails to explain the constable's behaviour and ascribes certain actions to the 'perpetrator' which would have been very difficult or even impossible to perform. Thus, it has insufficient explanatory power and is rendered implausible, in some respects even falsified by the available data.

The second hypothesis also falls short on explanatory power: it neither clarifies why the 'perpetrator' dragged "the body through the snow", nor why "he made it look as if a naked man had been crawling around on his hands and knees" (Lem 1974:105).

Sheppard suggests that the corpse was abandoned because something, perhaps the sound of the approaching car, made the culprit take fright (Lem 1974:106). Gregory concedes the possibility, but countersuggests that the 'perpetrator' is 'too intelligent and determined to be frightened off that easily' (Lem 1974:107). This assertion is not sufficiently corroborated to falsify Sheppard's theory. In fact, his theory and Gregory's suggestion are not necessarily mutually exclusive. Sheppard could be right in this instance, while Gregory's statement could be generally accurate.

In any case, despite its almost exaggerated attention to minute detail and the exhaustive enumeration of data, Gregory's report does not produce a hypothesis which stands up to critical scrutiny. He even fails to offer an improved hypothesis in response to Sheppard's criticism. The report implicitly satirizes Holmes's notion of detection as an 'exact science', and subverts the idea that 'objective' observation and a statement of the 'facts' in transparent, impersonal language would necessarily provide access to knowledge and understanding. This indicates that the investigation is bogged down in disconnected observations for want of a plausible working hypothesis (cf Popper 1979:258).

The Chief Inspector informs Gregory that, according to Sciss, "there won't be any more incidents"; "the series is over, indefinitely or...forever" (Lem 1974:108). This is confirmed by the statistician in his conversation with Gregory (Lem 1974:116). According to Sciss, the "case has nothing at all in common with criminology", in that "no offense of any kind was committed" (Lem 1974:116). This implies that he would not necessarily assume a 'perpetrator' to be responsible for the series of events. In terms of subgenre conventions, Sciss is proposing the unthinkable, namely, a crime without a criminal, or, worse still, a detective novel without a crime.

The precondition for any phenomenon to be explained, according to Sciss, is that "the structure of its events" should conform "to a regular pattern" (Lem 1974:119). Such a pattern would suggest that the events are connected, and that a general explanation could be found which would

be valid both for individual events and the series as a whole. In the absence of a pattern, only *ad hoc* explanations would be possible, that is, explanations which 'are not testable independently of the effect to be explained (Popper 1979:15-16). Each explanation would only apply to a particular event and not be generalizable to the series as a whole.

Accordingly, Sciss primarily sets out to "'connect"' the events of the case "'with some other series of phenomena that was already familiar"' (Lem 1974:120). One such a phenomenon, which Sciss chooses at random, is death by cancer. Having analysed the statistics of the incidence of mortality due to cancer in a particular region, he found that "'Norfolk and its surrounding region...constitutes an enclave with a relatively low cancer mortality"' (Lem 1974:121). The "'place where the first disappearance occurred is...the place in which cancer mortality reached the lowest level"' (Lem 1974:121). On the basis of the extent of body displacement observed in each case, Sciss is able to determine that "'the rate of cancer mortality increases by an arithmetic rather than a geometric progression as we trace its passage from the enclave into the adjacent regions"' (Lem 1974:122). There is a correlation between the geographical distribution of the rate of cancer mortality and the pattern according to which the 'phenomenon' spread.

Sciss, however, does not use this as the basis for inferences about the case. He regards Gregory's question about the cause(s) of the events as naive and even irrelevant: "'It has never occurred to you or your Chief to institute an investigation against whatever causes people to contract cancer, has it?'" (Lem 1974:122). Even though Gregory succeeds in drawing him into speculation about the dead cat being "'a vehiculum, that is to say...the carrier or medium which conveys the movement factor to the corpse"', Sciss insists that it is not his "'job to formulate hypotheses"' (Lem 1974:123). He seems to view his task as limited to the description of patterns; his primary aim is to achieve logical coherence. His statements are truthful in that they correspond to objective data, yet are not aimed at explaining the case in terms of direct causality.

As a policeman, whose *raison d'être* is to catch criminals, Gregory has to assume, contrary to the evidence, which suggests that the corpses "'walked away by themselves"', that somebody "'helped them"' (Lem 1974:119). Sciss, however, suggests that the events could be viewed as a natural phenomenon which cannot be explained in terms of direct linear causality or the current state of knowledge. His own task, he insists, is only to determine "'the connection between one phenomenon and other phenomena"' (Lem 1974;119). This, he claims, enables him to offer "'explanations"', while Gregory is talking about "'nothing but facts"' (Lem 1974:119). Sciss describes an underlying pattern, which Gregory is unable to do.

According to Sciss, it seems, knowledge and understanding are not attained simply by ascertaining

the 'facts', but by uncovering a pattern, a design, a certain coherence or correlation between phenomena. This ties in with a scientific paradigm according to which 'Eigentliche Gegenstand der Wissenschaft sind die mathematisch beschreibbaren Strukturen von und Beziehungen zwischen Elementen einer einheitlichen Natur' (Detel 1991:182). ['the real object of science is the mathematically describable structures of and relations between elements of a unified nature'] However, although the correlations Sciss describes are objectively truthful, they are dependent upon the arbitrary choice of phenomena correlated. As in quantum physics, the picture of the data is determined by the observer's point of view (see 1.2). Moreover, there is no evidence that these correlations are in fact relevant to the case. This again poses the problem of undecidability. It is therefore debatable whether Sciss actually offers explanations and thus promotes understanding, or merely demonstrates the logical consistence of his method.

Following the interview with Sciss, Gregory is confronted by the Chief Inspector, who accuses him of having made a 'blunder' in trying to set a trap for the statistician. Gregory insists that a culprit be found; only thus could a rational explanation be provided for the series of events. The alternative would be to accept the "'allegedly miraculous character of this case'" (Lem 1974:137), which would amount to an acknowledgement of the possibility that the events might not be in agreement with the known laws of nature. In that case, further hypotheses would be opened up, including an analogy between the present case and the "'alleged resurrections'" of "'Lazarus, and...the other one'", that is, Jesus, which "'took place about two thousand years ago'" (Lem 1974:137). This analogy constitutes a metaphysical statement, not a falsifiable hypothesis; it cannot be tested (Cf Popper 1989:36, 193).

Gregory's dilemma is that the case seems to defy the laws of nature, which could imply that reality may not be made in the image of reason. If he admits the possibility of a miracle, then the case could be explained in terms of divine intervention. This could be rejected out of hand, as a fabrication, but that would leave the investigators stranded. The end result would be "'a couple of plastercasts, a few contradictory stories told by some not too bright mortuary workers and gravediggers'" (Lem, 1974:137). Gregory is caught between his refusal to consider a non-falsifiable hypothesis (cf Popper 1979:14-16), and his failure to produce an acceptable alternative.

In an attempt to break the impasse, Gregory proposes several 'crazy' hypotheses which are not falsifiable in terms of current knowledge, but cannot be rejected outright, as it cannot be excluded that they might yet be corroborated (cf Popper 1971:212; Naess 1972:76). The explanations are based upon an elaborate analysis of Sciss's "'statistical hypothesis'" (Lem 1974:136).

The first, "'more conservative'" explanation conjectures that the police "'is facing some kind of

peculiar mutation that causes cancer; an unknown virus of some kind" (Lem 1974:136). According to this line of reasoning, "cancer manifests itself in the organism as chaos", while the "organism itself" represents "order as it is found in the life processes of a living body". After the cancer victim's death, the "chaos factor" (cancer virus) "goes on living in his corpse" (Lem 1974:136). Eventually, it mutates into a factor that tries to establish "a kind of posthumous order" in the organism. In order to do this, it "tries to restore the life process in an organism whose body is already dead" (Lem 1974:136-137). The moving corpses indicate that the restoration process is "going on" (Lem 1974:137).

The explanation rests on two assumptions: firstly, that the 'order factor' does indeed exist; secondly, that it "is able to initiate highly sophisticated, well-coordinated movements" (Lem 1974:137). The plausibility of the theory is said to be independent of its intelligibility in rational terms, on the grounds that "human reason isn't capable of understanding everything" (Lem 1974:137). This ties in with the idea that the corroboration of 'wild' or 'crazy' theories could require years, even decades of research - a perspective which 'is rarely, if ever, relevant in the research work of the vast majority of scientists today, because of our limited capacities' (Naess 1972:89). It is therefore often not practicable to investigate such theories, although they might be revived at a later stage (cf Naess 1972:88). A plausible 'crazy' theory would account for the data, but would seem contradictory to reason in that it can be neither corroborated nor refuted on the basis of the available evidence (it will, however, be falsifiable).

Gregory discards the first explanation because "the improbable can't be explained in terms of the probable": the existence of a "cancer virus is within the realm of probability", but the idea that such a virus could "initiate highly sophisticated, well-coordinated movements" is not (Lem 1974:137).

Gregory proceeds to invent a theory straight out of science fiction, based upon the assumption that "we may have to look for the answer in outer space". According to this theory, the case amounts to "something along the lines of a "first contact" between Earth and a race of people from the stars". In order to study humans "at close range", these beings sent "information gathering instruments" to Earth, "microscopic" in size, and "programmed...only to the dead" (Lem 1974:137). The "information collectors" which Gregory compares to "trained bacteria", seem to act rationally, which explains the ambivalence of the crimes: anthropomorphic, yet impersonal. A link between this theory and the cancer phenomenon is established simply by assuming that "human immunity to cancer is inversely proportional to immunity to the something from outer space" (Lem 1974:138).

According to Gregory, this is a powerful theory, which "explains everything". Nevertheless, it is neither substantiated nor even suggested by the available data. The existence of a "race of people from the stars" cannot be ruled out as impossible; the idea of "information collectors" who are able to "start up some human corpses" (Lem 1974:138) can, as it contradicts a fundamental law of nature, namely, that death is irreversible. It could only be viewed as possible if one assumes the existence of an 'alternative universe' of which the laws are different from ours.

Gregory's failure inspires the theory of a random universe (Lem 1974:204-205). The theory sets out from certain hypothetical questions, which emphasize its status as simply yet another conjecture. What, asks Gregory, if the Chief Inspector's theory that the crimes could be understood as an imitation of the "natural order of things" is wrong because "there isn't anything to imitate?" (Lem 1974:204). The image of the world as "jigsaw puzzle" is juxtaposed to that of a "soup with all kinds of things floating around in it", some of which "from time to time get stuck together by chance to make some kind of whole". Perhaps, "everything that exists is fragmentary, incomplete, aborted, events with ends but no beginnings, events that only have middles" (Lem 1974:204); perhaps, events do not follow a linear progression from cause to effect.

The image of a 'jigsaw puzzle' suggests a closed system in which every element has a predetermined place. It would be entirely predictable, like a periodic system (see 1.4). The 'soup' image, by contrast, suggests a random reality which might display a semblance of order, but would in fact consist of a mishmash of phenomena, with no Ariadne's thread to guide one through the labyrinth. To the extent that an underlying structure or pattern could be uncovered, it would be the result of chance happenings coalescing to create a semblance of order.

In a random universe, "Perfection, fullness, excellence" would "occur only because there is such an excess, so unimaginably much of everything" (Lem 1974:204). It would not be the result of deliberate actions or natural laws, but would occur because the probability of its occurrence is directly proportional to the number of phenomena involved: the greater the number of phenomena, the greater the chances of orderly patterns being produced. This recalls the 'chaos game', the generation of regular patterns through the iteration of random events (see 1.4).

As a result of the "world's vastness, its infinite variety", the "gaps and breaches" are distributed in such a way that the mind "finds and integrates scattered fragments" (Lem 1974:204-205). It does this "for its own self-preservation"; the intellect is unable to grasp and make sense of a fragmented and arbitrary reality (Lem 1974:205). The world constructed by rationality emerges through the suppression of the chaotic. The illusory harmony established through repression becomes a celebration of reason: "The mathematical order of the universe is our answer to the

pyramids of chaos" (Lem 1974:205). Thus, in linear science, random phenomena are assumed to add up to a coherent picture of reality, in contrast to the nonlinear view that the parts do not add up to a whole (cf Kosko 1993:108).

The traditional detective story, of which the Holmes narratives are the archetypal example, reflects the 'jigsaw puzzle' conception of the world. The detective's principal task, which he invariably completes with success, is to find and place the missing pieces, in order to complete the picture of a coherent, predictable reality. The chaotic and the irrational are glossed over or kept within safe bounds. The objective world is assumed to be made in the image of reason, which establishes a perfect harmony between man the rational animal and a world in which "everything" is made to respond "in one unified voice like a bell chiming to our glory" (Lem 1974:205).

All this, says Gregory, is an illusion: "it's only soup"; "The only thing that really exists is statistics", which provides an instrument for systematizing the chaotic profusion of phenomena. The infinite possibilities of the world are regulated by probability; not all possibilities have equal probability (cf Kosko 1993:47). Neither the will of the individual nor fixed universal rules determine events; "a normal statistical distribution decides everything" (Lem 1974:205).

This does not amount to 'statistical determinism'; probabilities cannot be stated as universal rules which determine the outcome of events, since "nothing exists except blind chance, the eternal arrangement of fortuitous patterns" (Lem 1974:205). If we flip a coin, the outcome is governed by chance, but the relative probability of heads and tails can be calculated for a certain number of flips over a period of time. In terms of fuzzy logic, however, the outcome does not even have to be either heads or tails, but can be both at the same time: heads to some extent and tails to some (cf Kosko 1993:94-97). However, Gregory's ideas seem closer to theories of deterministic chaos (cf 1.4), and therefore, fuzziness is not strictly relevant to the analysis. Nevertheless, it suggests that the concept of a random universe can be developed further, inasmuch as Gregory operates with discrete phenomena, while fuzzy thinking states that a phenomenon does not have to be either 'a' or 'non-a', but can lie on a continuum between the two (cf Kosko 1993:124-125). Because of sensitivity to initial conditions, even the tiniest difference between 'a' and 'nearly-a' can result in wildly different and unpredictable outcomes.

In any event, according to Gregory, statistics can be used to describe and systematize chaos in such a way that it would be manageable by reason. Statistics can be used to uncover patterns, especially since that is what human perception wants or expects to find, "constantly making categories, seeking out, and reconstructing" (Lem 1974:204):

Seek, and ye shall find; in the end ye shall always

find, if you only look with enough fervor; statistics doesn't exclude anything, and therefore it renders everything possible, or more or less probable (Lem 1974:205).

The desire for viewing the world as shaped in the image of reason can result in the projection of intentionality onto fortuitous events, as exemplified by Gregory's insistence on finding a 'perpetrator'. Sciss does not fall into the same trap. Even though his elaborate theorizing lends an aura of scientificity, and thus, of truthfulness and coherence to his systematization of fortuitous events, he does not contend that his theories accurately reflect the world as it 'really' is. His primary concern, it seems, is to provide a framework for the generation of hypotheses which can be tested and criticized (cf Popper 1979:265-266).

Neither Sciss nor Gregory offers a hypothesis which accounts for all the facts of the case. They merely advance conjectures, without excluding the possibility of better alternatives. In agreement with fallibilist pluralism (cf 1.5), none of the hypotheses in *The investigation* is 'framed' in such a way that it acquires a privileged status. Holmes's explanations are accepted as objectively true; within the framework of monist rationalism, it is assumed that a hypothesis grounded in reason will inevitably correspond to the facts, and that this correspondence can be positively confirmed. The corollary to verifiability is that Holmes's cases resemble linear systems: their constituent elements add up to a coherent whole, as in a jigsaw puzzle, quite unlike the random disconnectedness of the elements in Gregory's problem (cf Kosko 1993:294). A comparison with the problems in Gadda's *Pasticciaccio* suggests that Holmes's cases are not necessarily inherently simple or trivial, but often 'rounded off', simplified, to fit into a deterministic worldview and optimistic rationalism. Gadda highlights the complexities underlying an apparently straightforward murder case; the very nature of the problem in *The investigation* precludes a 'Holmesian' approach. In the texts by Gadda and Lem, the shift to pluralist fallibilism and possibilism is dictated by the problem itself, just as classical science does not provide the tools to deal with chaotic systems (cf Gleick 1987:3; Cambel 1993:14-16).

In the end, the Chief Inspector proposes a solution which links the Mailer transport company to the crimes (Lem 1974:206-214). The company, he argues, has 218 drivers, at least one of whom may be psychologically deviant, according to statistical probability (Lem 1974:210). He describes the gruelling work schedule of the drivers and the difficult conditions they had to cope with during the period when the crimes were committed (Lem 1974:207-208). Under these circumstances, the mental condition of a driver who has been experiencing "'visions, peculiar thoughts'" and "'hallucinations'" for some time may begin to deteriorate (Lem 1974:208-209). A "'vision:" may gradually rise to the surface of his consciousness "'that becomes clearer and clearer, more and

more consistent", until "finally there comes a moment in which it becomes" so compelling, "so uncontrollable" that he knows "what has to be done" (Lem 1974:209). Gregory summarizes:

In other words...one of the drivers...is a paranoiac,
is that it? He works on the night shift, stops his
truck somewhere along the way and steals a body (Lem 1974:211).

Thus, mental delusion is proposed as a motive for the crimes, a possibility which was not ruled out by the police doctor, Sorensen (Lem 1974:24). Furthermore, the Mailer truck drivers had both the means and the opportunity to commit the crimes: the routes they had to serve were situated in the geographical area where the corpse removals took place; their trips were undertaken at night, while "the incidents all took place between midnight and dawn in small provincial mortuaries" (Lem 1974:210); the 'perpetrator' "must have known the topography of the whole region by memory"; "he knew exactly where all the cemeteries were located" (Lem 1974:211); so, probably, did the truck drivers; the trucks have ample space in which to hide the bodies; the guilty driver also had "plenty of opportunities" to "dump the evidence of his night of insanity" (Lem 1974:211).

These facts merely indicate the possibility that one of the drivers was involved. Sheppard also has to reconcile insanity as a motive with his remark that,

Aside from a few differences in detail, the individual
cases are tied together by one connecting link -
a certain consistency that no human being could have
planned. No one, no human mind would have been capable
of doing any of this" (Lem 1974:210).

If Sheppard insists that a 'perpetrator' was involved, then he would have to find a satisfactory explanation for this consistency.

Sheppard's method here is similar to Sciss's. Through an analysis of "certain unusual circumstances surrounding " the case , he identifies several constants: each "subsequent incident" took "place farther and farther away from the 'center'" of the geographical area concerned, because, as a result of weather conditions, "the average speed of the trucks was decreasing..; consequently, it was taking them longer to cover the same distance" (Lem 1974:210). The "resistance the driver" offered "to the two-hour fantasy-producing period" was inversely proportionate to "the resistance the snow" offered to the "tires of the truck" (Lem 1974:210-211). A constant is obtained by multiplying "the difference in temperature by the product of the time between two incidents and the distance from the center to the site of an incident" (Lem 1974:211).

The constants identified arise from the interaction between the driver and his truck on the one hand, and between driver, truck and weather conditions on the other. Another constant is the "driver's work schedule" (Lem 1974:210) and the route he had to cover. Thus, the consistency previously regarded by Sheppard as precluding insanity as motive is not necessarily intentional, but might have resulted from the relationships between accidental circumstances.

In brief, the solution proposed by Sheppard is that the crimes were committed by a paranoiac, and were meant to constitute the "imitation of a miracle" (Lem 1974:212), probably that of the resurrection of Lazarus or "the other one" (Lem 1974:139), that is, Jesus.

Though inconclusive, Shepard's hypothesis is not entirely falsified by the data. Yet there is no direct evidence which indicates the involvement of a Mailer driver. Sheppard himself states that the drivers of "post office trucks, ambulances, emergency vehicles" and so on may also have had the means, the opportunity and the inclination to commit the crimes (Lem 1974:212). The choice of a Mailer driver as hypothetical culprit therefore seems quite arbitrary.

No evidence is presented which indicates that one of the Mailer drivers suffered from mental delusion or was emotionally instable. In terms of statistical probability, the possibility cannot be excluded, but it is also not improbable that none of the Mailer drivers suffered from mental delusion. There is not even any evidence that the crimes were indeed motivated by a mental breakdown.

The identification of the deceased Mailer driver as possible culprit is a convenient solution; "something to match the facts", to "give a semblance of order to this disorder and mark an open case closed with a nice sense of orderliness" (Lem 1974:214). However, it is falsified by the fact that the driver's presence in the road near the place in question can only be confirmed for three of the crimes (Lem 1974:212); about one of the remaining incidents, nothing is known, one is not mentioned by Sheppard, and for one, the driver had an alibi (Lem 1974:212-213). That would rule him out, "unless", says Sheppard, "we classify that incident separately" (Lem 1974:213). However, there are no grounds for doing this; it would simply be an arbitrary move aimed at protecting the hypothesis. Nevertheless, the exclusion of this particular driver does not preclude the possibility that one of the other Mailer drivers might have been involved.

Further investigation might confirm the guilt of one of the Mailer drivers. Yet that would involve the systematical examination of a very large number of random phenomena. It would include the investigation of the "endless quantity of phenomena that can be fitted into the theory" (Lem 1974:213), in order to identify the most likely culprits. To do this might be neither practicable, nor

entirely worthwhile, in that it would not necessarily lead to a solution better than the one proposed by Sheppard.

While the traditional detective novel (Agatha Christie's, for example) usually has a small, finite number of suspects, in *The investigation*, the number of potential culprits is unknown. As a result, either all possibilities would have to be investigated, or the best available theory accepted, even if it may be unsatisfactory and rather arbitrary, unless the police were to concede defeat. The number of theories generated could be limited by restricting further investigation to a random sample and then selecting the best alternative. In any case, the investigators are forced to compromise: they either have to accept defeat, or to settle for a fairly plausible but inadequate solution.

For this reason, the Chief Inspector decides that "the investigation is over now, except for a few technicalities" (Lem 1974:215). Thus, the feasibility of an epistemology which equates 'knowledge - episteme - with the proven' (Lakatos 1978:129) is denied. Such an epistemology, implicit to the Holmes narratives, combines a monist conception of rationality with insistence on empirical verifiability. In *The investigation*, however, the investigators could affirm that 'no claim can be made for absolute certainty; we are seekers for truth but we are not its possessors' (Popper 1979:46-47); or even that, to the extent that there is correspondence of hypotheses to the facts in an indeterministic world, this is simply the result of random statistical distributions.

5.2 Synthesis

The investigation, it seems, suggests that cognitive rationality cannot be abandoned, as it remains the only instrument available for problemsolving. Lem's investigators attempt to refine it, and their argumentation makes Holmes's 'scientific' method seem naive and primitive by comparison. Like previous detectives, they implicitly accept objective truth as regulative principle. In Lem's text, it seems, truth is at best viewed as a horizon; even the term itself can be discarded in favour of verisimilitude, that is, 'approximation to truth' (Popper 1979:57). Moreover, there is no 'general criterion of truth' (Popper 1979:46); truth itself is not fixed and cannot be circumscribed precisely. There are no fixed external criteria which enable us to establish how close to the truth any particular theory is. Sheppard's explanation seems a fairly plausible approximation, but remains inconclusive, as it cannot be shown that it truthfully accounts for the data. Statements about the individual events constituting the problem remain undecidable and *ad hoc*, in that they cannot be shown to fit into a general explanation (cf Tarski 1971:12-14). There is no conclusive evidence that accurate statements about aspects of the case can be integrated into a general hypothesis.

Accordingly, in the present case, empirical evidence cannot be assumed to constitute the basis for the verification of hypotheses, but could enable the investigator to test and criticize competing theories:

Die Erfahrung ist kein Fundament der Erkenntnis. Sie liefert auch keine Wahrheitskriterium, das imstande wäre, die eine wahre Theorie zu identifizieren und aus der Fülle der möglichen Theorien zu selektieren. Die epistemologisch-methodologische Funktion der Erfahrung besteht ausschliesslich darin, kritische, d.h. potentiell widerlegende Instanze für unsere zu wissenschaftlichen Theorien verdichteten Spekulationen zu sein (Spinner 1974:82).

Empirical data can also be dependent on a particular analytical approach, as exemplified by some of the correlations described by Sciss. Therefore it does not provide a stable and absolutely reliable basis for the comparative assessment of competing theories.

It is impossible to decide finally between the various hypotheses proposed in *The investigation*, inasmuch as none could be discarded completely, and none could be proved to be 'the best'. Some of the theories are not even comparable, as they operate with widely divergent assumptions.

Spinner's concept of fallibilist pluralism and its relative, Naess's possibilist pluralism are relevant to *The investigation* (cf 1.5 and 1.6). In this context, pluralism does not constitute the foundation for a well-defined analytical method, but merely amounts to an open-ended, critical approach, in agreement with the nonlinear problem facing the detectives. As a result of the undecidability of the available hypotheses and the nonlinearity of the problem, the number of possible hypotheses is potentially infinite. Sheppard's decision arbitrarily to close off the case can therefore be viewed as the way of least resistance, or as a choice for economy of effort.

Gregory's notion of a random universe is not presented as an all-inclusive perspective. It is simply yet another hypothesis. One should also bear in mind that the concept of randomness can only be used meaningfully if it is defined in terms of a particular context (cf Ruelle 1991:13). Thus, chaos theory does not offer universal hypotheses, but always focuses on specific systems. Nevertheless, the text as a whole clearly endorses indeterminism, defined as 'the doctrine that not all events in the physical world are predetermined with absolute precision...it does not, therefore, entail the view that there are 'events without causes'' (Popper 1979:220).

While Gadda's *Pasticciaccio* complicates, but does not radically question the notion of causality

by suggesting that there are events of which the causes cannot be determined because of multidetermination, *The investigation* seems to propose a radically *different kind* of causality. In a random indeterministic world, what is perceived as structure or design or causal relationships may simply be a result of the random coincidence of statistical distributions. For example, the 'unusual circumstances' analysed by Sheppard (Lem 1974:210-211) can be viewed as the trigger for the hypothetical driver's 'mental delusion', and thus, as the possible 'cause' of the crimes. Yet, the occurrence of these circumstances is regulated by statistical distribution. Their coincidence at certain timespace coordinates with a specific person, to whom a very large number of variables is attached, as well as the resulting interaction and its outcome is governed by chance. There is no particular reason for the coincidence; the initial conditions for the interaction are local and accidental, not determined by universal laws.

One could after the event analyse the elements of this process in terms of their statistical distributions, and perhaps even calculate the approximate probability of the outcome. However, given the randomness of the process, the probability of a particular outcome would be different every time the process is repeated. Over a period of time, the probabilities, represented as points, may not simply be scattered in a disorderly manner, but might form a strange attractor. Thus, the relationship of the elements of the process could be random, yet regulated

The nonlinear problem facing Lem's detectives can be viewed as part of a chaotic system, which displays sensitive dependence on initial conditions. Any change to the system will result in a different outcome. The series of crimes in *The investigation* can be viewed as but one possible, entirely unpredictable outcome of a random, infinitely variable causal network. There is no general rule in terms of which any of the elements in the network can be predicted. Against this background, Gregory's persistent search for a 'perpetrator', dictated by the conventions of the detective novel, seems quite naive. *The investigation* demonstrates that the usual cognitive tools of the literary detective, such as the collection of data and linear reasoning are unable to deal with random complexity.

5.3 Random causality: *Chain of chance*

Lem's preoccupation with randomness recurs in *Chain of chance* (1975). Like *The investigation*, it has the format of a detective novel. The principal investigator is a retired astronaut, not a professional 'private eye'. His main collaborator is one Andy, an American who works for "Elgin, Elgin and Thom, a respectable agency" (Lem 1978:90). The French Sûreté and CNRS, as well as Interpol, amongst others, are also involved in the investigation, which concerns the deaths of a

number of mostly middle-aged American bachelors who died while on visit to Naples.

All died in different ways. Coburn, for example, drowned (Lem 1978:62); Osborn was 'run over by a car on the Strada del Sole' (Lem 1978:68); Titz died in a car accident he deliberately caused (Lem 1978:86); and so on. The dissimilarity of their deaths is offset by the fact that all of them seems to have experienced some kind of existential crisis shortly before their deaths. Schimmelreiter, for example, became violent, 'was given to fits of anxiety and crying spells', and suffered from persecution mania (Lem 1978:75); Haynes became insanely violent, and tried to commit suicide by 'slashing his wrists with a sliver of broken glass' (Lem 1978:76); Adams began acting suspiciously on his return trip to Rome by, amongst other things, 'buying an inner tube when his car used tubeless tyres' (Lem 1978:87); and so on.

Some of the men died of natural causes - Hayne of a 'severe attack of bronchial pneumonia', and Schimmelreiter of lung cancer (Lem: 1978:75, 76) No indications of foul play were found in any of the cases, although there were a number of suspicious elements: Coburn, who drowned, 'had the reputation of being an excellent swimmer...had been a member of the American crawling team...and had managed to keep reasonably fit for a man his age' (Lem 1978:62-63); Schimmelreiter 'secretly confided' to

one of the interns in charge of him...that on two occasions an attendant at the Vittorini Spa had tried to kill him by slipping poison into the bathing water and that this was surely the work of an Israeli secret agent (Lem 1978:75).

A letter from Hayne was received after his death, 'stating that in the event of his sudden death the police should be notified at once because he suspected that someone was plotting to kill him' (Lem 1978:77); having received a blank piece of paper, 'by mistake', Mittelhorn experienced a 'sudden mental breakdown' (Lem 1978:83-84).

Several of the deceased suffered from allergic diseases such as asthma or hay fever. Only in two of the cases does there seem to have been a possible motive for murder: there were rumours that Mittelhorn, whose former boss was a 'rich and elderly Jew' who died in Dachau, had a document signed 'under duress', 'designating him as sole heir and executor of the dead man's estate' (Lem 1978:84). Adams, a journalist, alleged that he had succeeded in collecting 'material for a series of articles dealing with a completely new type of crime, a crime that's not only unmotivated but also indiscriminate'; material which he described as a 'bonanza', but 'lethal' (Lem 1978:89).

With reference to the first nine cases, the investigator states that all followed 'the same mysterious pattern' and displayed an 'all-too-obvious similarity', but concludes that

there were still insufficient grounds for launching
a criminal investigation aimed at prosecuting the guilty
since there was not the slightest hint as to their
whereabouts or whether in fact they even existed (Lem 1978:85).

The 'pattern' to which the narrator-investigator refers consists in a number of generic similarities between the deceased, such as age, unmarried status, and certain unclarified aspects of the periods immediately preceding their deaths. There is, however, no *prima facie* evidence that a crime was indeed committed (cf Schmidt 1989:4), with the result that the justifiability of an investigation seems rather dubious. The narrator implicitly concedes as much in expressing doubt whether the 'guilty...even existed' (Lem 1978:85). It also seems questionable whether the different cases should be treated as a single problem, since there is no obvious connection between them, apart from the generic similarities already mentioned. They do not seem to form a set of interrelated events, but appear as disconnected happenings which have been grouped together on the basis of generic similarities.

The investigator's involvement in the case comes about almost by accident. After a number of law-enforcement agencies had failed 'to establish any criminal motives' (Lem 1978:89), one of the deceased's chief executor 'turned the matter over to Elgin, Elgin and Thorn, a respectable agency headed by Samuel Ohlin-Gaar, a lawyer and former friend' of the investigator's father (Lem 1978:90). Having 'failed to make any progress', Ohlin-Gaar 'decided...to mount a simulation mission, that is, to send to Naples an unmarried American matching the type of victim in every possible way' (Lem 1978:90). As a result of factors such as his age, nationality and acquaintance with Ohlin-Gaar, the narrator is assigned to this mission.

No effort is made to gauge his potential as detective or his powers of reasoning, especially since, contrary to subgenre conventions, his task is not to solve the case himself, but simply to act out the role of a potential 'victim'. The actual investigation is carried out by the 'six-man team' who keeps him 'under constant surveillance - two men to a shift, plus two technicians to monitor my blood, heart and lungs' (Lem 1978:91). The narrator has to wear 'electronic sensors' everywhere he goes, 'except on the beach, where a pair of well-hidden binoculars was deployed' (Lem 1978:91). In Rome, he is awaited by a 'specialist in forensic medicine' whose 'job was to examine all the medical data recorded on the tapes' (Lem 1978:91).

The weight of scientific expertise brought to bear on the case is further increased through his

contact at the CNRS in Paris, 'Dr Philippe Barth...a well-known French computer scientist who also served as a scientific consultant for the Sûreté' (Lem 1978:60). Barth heads a research team who is 'in the process of programming a computer capable of solving multifactorial problems in which the number of case-related facts exceeded the storage capacity of the human memory' (Lem 1978:60). He organizes a party attended by, amongst others, doctors, mathematicians, lawyers and statisticians, at which various hypotheses concerning the case are generated and inconclusively discussed (Lem 1978:118-130).

By contrast to the solitary, heroic figure of the classical detective, who solves cases virtually unaided by intellectual input from others, the investigator in *Chain of chance* is a member of a team, and a secondary one at that, as far as scientific expertise is concerned. In this respect, the text reflects actual scientific practice, in which teamwork on research projects is probably more the rule than solo efforts; the submersion of the individual by the collective; the passage from a beacon-like, victorious Reason to a plurality of intersecting rationalities.

Despite all the expertise involved, the mission ends as a 'complete flop' (Lem 1978:91). No evidence is found that any of the deceased was in fact murdered. Barth ascribes the failure to the methodology used. It would, he says, have been preferable to send 'a whole group of similars down there. No fewer than five' (Lem 1978:92). Either the detective-simulator himself, or the environment, or both, may have variables which invalidate the investigation if it is conceived 'in terms of a scientific experiment' (Lem 1978:92), by rendering impossible a simulation exercise of which the inaccuracies would be restricted to an acceptable level. Obviously, it would have been impossible to carry out the experiment in a controlled environment. It is, therefore, quite possible that the environment was 'deficient'; if the detective was the deficient factor, then he 'should have selected men having the same characteristic variability ratio as that exhibited by the victims' (Lem 1978:92). The 'policeman's mentality' manifested by (some of) the detective's collaborators 'is all right for prosecuting criminals but not for proving whether in fact a criminal exists', which is what the mission was, in the first place, intended to accomplish (Lem 1978:92). A similar criticism is levelled at Gregory in *The investigation*, where the involvement of a perpetrator is also not confirmed.

Barth's criticism implies that the investigators still cling to a reductive approach, according to which events could be explained in terms of linear causality. He accepts the causal factor(s) of the incidents to be geographically determined: "'Naples is a trap, there's no doubt about that'", but states that one should think in terms of random causality, which "'operates like a lottery, not like a machine'" (Lem 1978:93). He compares the environment in which the incidents took place to a "'firing zone'", in which, whether one is killed "'by someone aiming deliberately at you or by the

sheer density of fire", the possibility of a crime would not be excluded, in that "either way someone on the other end is anxious to see a lot of people dead" (Lem 1978:93). In such a setup, the number of victims would be determined by the ratio between the number of potential victims and the density of fire, while the identity of the actual victims would be a factor of their presence - itself the result of countless random variables - at certain timespace coordinates.

The motif of a crime in which the victims are selected at random recurs repeatedly. Adams refers to material he has collected concerning 'a completely new type of crime, a crime that's not only unmotivated but indiscriminate, in the same way that scattering nails all over the road is an indiscriminate crime' (Lem 1978:89). The mathematician Saussure, whom the detective meets at Barth's party, describes a similar pattern by using the analogy of somebody trying to hit the nails on a table with drops from an eyedropper versus the nails being hit in "five minutes of a steady downpour" (Lem 1978:125). Saussure's theory is that,

The victims were the result of a random causality.
Out of that realm of infinite possibilities I
mentioned earlier, you chose a certain fraction of cases
that exhibited a multifactorial similiarity.
You then treated them as an entire set, and that's
why they seem mysterious (Lem 1978:126).

In other words, according to Saussure, on the basis of certain similarities, the investigating team constructed a set out of events which are not necessarily linked. In doing this, they implicitly assumed the existence of a rule for the construction of the set, constituted by specific common denominators and a general explanation for all the events. However, the similarities could be the result of a statistical distribution, not of a deliberate selection of victims. This statistical distribution may be random, which would mean that the events should be regarded as an arbitrary sample of an infinite, chaotic series. Paraphrased thus, Saussure's remarks imply that the investigators inadvertently created a nonlinear problem for themselves.

According to Barth, a further error committed by the investigators was that "the incidents...were arbitrarily categorized as relevant or irrelevant" (Lem 1978:102). The narrator responds that they were faced with

the classic dilemma of every investigation into the unknown.
Before its limits can be defined the agent of causality
must be identified, but before the agent of causality
can be identified one must first of all define the
subject under investigation (Lem 1978:102).

Barth asserts that death preceded by insanity was arbitrarily chosen as criterion for identifying the series of victims, "or at least insanity, even when the latter failed to result in death" (Lem 1978:102). Different criteria could result in a different series, change the problem and lead to different hypotheses.

The narrator's reply to Barth's arguments ties in with the idea that, faced with an ill-defined problem, the first step is to formulate a tentative definition and generate inadequate, testable hypotheses, in order to modify the definition and arrive at better hypotheses which will give a clearer picture of the problem and perhaps suggest new problems (cf Popper 1979:260). The idea of determining the causal factors through a simulation experiment is based upon the assumption that a crime was indeed committed, but the experiment fails to confirm this; it does not clarify the problem.

The hypothesis proposed by the doctors and biologists present at Barth's party is 'that the deaths were caused by a congenitally determined reaction to certain unknown elements in the microbiosphere' (Lem 1978:127). They propose that the hypothesis be tested experimentally on two groups,

all men in their fifties, all having an athletic
or a pyknic build, all randomly selected - and made
to undergo a steady programme of sulphur baths,
sunbathing, body massages, sudorifics, ultraviolet
lamps, horror films and some titillating pornography, until
one of them showed signs of cracking (Lem 1978:127-128).

A correlation would then have to be sought between the test groups' reactions and their respective hereditary backgrounds. It is assumed that the 'victims' were also exposed to stimuli similar to those included in the programme. Once a correlation has been found, inferences could be made concerning the factors which cause a test person to 'crack up'. These factors could only be assumed to have acted upon those 'victims' whose hereditary backgrounds are similar to the relevant test person's. Other variables may have to be taken into account, such as the personality and personal history of each individual. The degree of certainty with which the causal factor(s) could be determined, would depend on the weight of the evidence, that is, the number of significant parallels found between the test group and the 'victims'.

Considering the number of variables which would have to be balanced out, it seems improbable that the case could be solved in this manner. In terms of chaos theory, the initial conditions would have to be known, that is, completely accurate and comprehensive information about the state of

the victims before their health started deteriorating, and about all the factors which may have influenced them, would have to be available to the experimenters. All these factors would then have to be replicated exactly in the experiment. The slightest discrepancy in the experimental setup would blow up and lead to erratic results. Since the initial conditions are not known exactly, the doctors' and biologists' hypotheses cannot be tested by means of reliable experiments. This illustrates the idea that chaotic systems are not amenable to analysis by the traditional scientific method of repeatable experiments (cf Stewart 1989:286-289, 298-299).

Having met the 'doctors and biologists', the narrator is introduced to the 'legal experts on the team' (Lem 1978:128). Some of them 'argued in favour of the Mafia, others in favour of some new and hitherto undisclosed organization that was in no hurry to claim responsibility for the mysterious deaths' (Lem 1978:128). It is argued that the apparent absence of a motive does not invalidate this hypothesis, since random crimes are quite common, and the 'principle of Roman law which said "id fecit cui prodest" was no longer valid'" (Lem 1978:128). The only 'evidence' presented in support of the theory is that 'it had to be the Mafia, since any one of the Italians could have been a mafioso...' (Lem 1978:128); the mere possibility that any one of the Italians peopling the 'victims'' environment might be a member of the Mafia is misconstrued as necessarily implicating that organization in the 'crimes', while neither the manner nor the circumstances of death, nor their personal histories suggest the involvement of the Mafia or any other criminal organization.

The 'legal experts' conjecture that 'the acute psychosis would suggest the presence of hallucinogens' (Lem 1978:128), but make the baseless assumption that the drugs were not taken voluntarily. However, the victims' personal histories do not indicate that they were addicted to, or occasionally used hallucinogens, and no evidence is presented of someone having administered the drugs to them deliberately and surreptitiously. The 'legal experts' identify the causal factor(s) of the deaths with (a) person(s), but, instead of well-founded conjectures, they offer mere speculation.

As Barth's party became more animated, 'the subject of sex came up' (Lem 1978:128). Those present agree 'that the list of drugs and medications found on the victims was incomplete', since 'it didn't include any of the latest sex stimulants or aphrodisiacs, and you could be sure the older men were using them' (Lem 1978:129). The elements of this hypothesis include a statement of fact, namely, 'the list of drugs and medications found on the victims...didn't include any of the latest sex stimulants or aphrodisiacs' (Lem 1978:129); a generalization, introduced and accepted without any corroborating evidence, namely, older middle-aged men are sure to use sex stimulants and aphrodisiacs (Lem 1978:129); and the inference, derived from the first two statements, that 'the list of drugs and medications found on the victims was incomplete' (Lem 1978:128-129).

As the second part of the hypothesis can easily be falsified, the inference cannot be accepted. Even if some, or perhaps most olded middle-aged men experience decreased sexual potency, no evidence is introduced that this applied to any of the 'victims', and we cannot simply assume that it did. Even if it did, it cannot be taken for granted that they would have used sex stimulants or aphrodisiacs. The probability of such an action is unknown, since no information is provided on the statistical distribution of the use of sex stimulants by older middle-aged men in general. It is also not established that any of these substances could have produced hallucinations or emotional instability in users. Each kind of stimulant or aprodisiac could have different side-effects, and each could have different side-effects on different individuals. The hypothesis could only be considered seriously if all the variables can be accounted for, and if it can be shown that no other factors were present in the environment which could have produced effects in the 'victims' similar to those described in the summary of the case.

According to the narrator, none of the team's members 'had any of that flair, that special flash of illumination which in art went by the name of inspiration, that ability to sniff out what's relevant from a pile of facts' (Lem 1978:129). The team, he states, 'didn't care about finding a solution to the problem; they only wanted to complicate it by inventing new ones' (Lem 1978:129).

If one bears in mind that '*the growth of knowledge proceeds from old problems to new problems, by means of conjectures and refutations*' (Popper 1979:258), then the second allegation does not constitute a valid criticism. Scientists could identify new areas of research by generating hypotheses about a particular problem, without necessarily solving it. The proliferation of hypotheses is fundamental to a pluralist theory of knowledge. This would only become questionable should it degenerate into a random process, aimed at attaining truthfulness by a lucky throw of the dice. In this case, it would be a hit-and-miss affair, instead of a calculated and deliberate process of trial and error-elimination (cf Popper 1979:253-254).

The reference to the team's lack of flair underlines the importance of intuition and imagination, of the ability, in problemsolving, to 'sense' the solution, even without immediately available corroborating evidence. This ability sets Holmes apart from his more pedestrian rivals. In his case, it further confirms his intellectual superiority and validates optimistic rationalism, while Lem's narrator merely stresses that it is as important to problemsolving as the collection of reliable data and the generation of falsifiable hypotheses; it is a vital component of cognitive rationality. This is exemplified by the inspired guesswork of Eco's detective. It is important to bear in mind that William's guesses are always based upon specific information; what is at stake here is not some kind of metaphysical intuition or arbitrary explanations. Lem's narrator also seems to suggest that an inspired hypothesis would be characterized by elegance and simplicity. A good example would

be Einstein's famous equation. One could perhaps add that, to some extent, the rather messy proliferation of hypotheses in the present instance may be the result of the application of deterministic thinking to a nonlinear problem. Some of the investigators seem to assume that a general explanation can be found for the whole series of events; a basic rule for its construction; or that the parts constitute a coherent, compact whole.

Barth proposes that they should "turn to some of the discarded facts, to the false clues" (Lem 1978:102). All the presumed victims suffered from baldness and made no effort to conceal it, while "the survivors included both those who were balding and those with a normal head of hair" (Lem 1978:111). Some of these, however, may have been wearing toupees. A tendency towards baldness, instead of insanity, often followed by death, is therefore identified as a link between the incidents.

Almost all the victims suffered from allergies, but so did a number of the survivors; therefore, allergy has to be excluded as a possible linking factor (Lem 1978:109-110).

The identification of a linking element may help to define the problem. It may indicate that the object of the investigation is not merely a number of random incidents for which only *ad hoc* explanations can be found. Nevertheless, even if a causal factor were to be identified for one of the incidents, it could not simply be assumed to apply to all the others, as all are not identical (cf Popper 1979:7).

A further line of investigation is suggested by Superintendent Leclerc via Inspector Pingaud, the 'Sûreté's liaison with the Barth team' (Lem 1978:136). Pingaud conveys to them a summary of the case of one Dieudonné Proque (Lem 1978:133-148). For no apparent reason, Proque began to experience fits of hysteria, during which he became aggressive and destructive. As a result of one of these fits, he was involved in a car accident which landed him in hospital. There, he died of heart failure, ascribed to a 'reactive psychosis' (Lem 1978:141). A connection was established between Proque and a Doctor Dunant, who was busy developing 'psychotropic depressants' for the French government as part of a research programme on chemical warfare (Lem 1978:144): Proque had to repair the Doctor's glasses. During his first visit, Proque described to him an attack which 'sounded like an acute depression caused by a chemically induced psychosis, very similar, in fact, to the symptoms produced by the compound x he had been working on' (Lem 1978:146). Dunant formed the hypothesis that small quantities of the compound, present on the glasses, reacted with something in Proque's workshop, 'and that the resulting catalytic reaction made the chemical's effect a million times more powerful' (Lem 1978:147). Dunant tested the hypothesis experimentally, and after Proque's death, tested all the reagents in the workshop for their effect

on compound x, but failed to corroborate his theory. The experiment consisted in bending one of the stems of his glasses, bathing it with a solution of compound x, so that a residue remained after the solvent had evaporated, and then taking the glasses back to Proque to determine the possible effects of the compound. In addition to testing all the reagents in Proque's workshop, after Madame Proque's death, Dunant took samples of all the materials in the abandoned shop, but failed to corroborate his theory (Lem 1978:147-148).

Leclerc suggests an analogy between this problem and the Naples mystery, without specifying what he has in mind. The dissimilarities between Proque and the series of victims are such that the suggested analogy seems dubious.

The narrator initially assumes the message from Leclerc to be a devious way of conveying information on a 'new type of chemical weapon' to the Pentagon (Lem 1978:149). In that case, the rest of Leclerc's narrative could be ignored.

Barth, however, does not question the existence of compound x, and advances the hypothesis that this is the causal factor which precipitated the emotional crises suffered by the victims prior to their deaths (Lem 1978:150). On this basis, he proposes the hypothesis that compound x had been obtained by a group who decided to 'conduct some experiments' in order to establish how it could be used 'to its maximal effect' (Lem 1978:150). Barth tries to explain the properties found to be typical of the victims in terms of this hypothesis, and even conjectures that the group may have intended to use compound x for political assassinations (Lem 1978:151).

Although there are certain facts Barth is unable to explain, the narrator describes his theory as 'plausible' and 'ingenious' (Lem 1978:152). It implies that the victims were selected in view of their resemblances with certain political figures targeted for assassination.

Barth proposes that his hypothesis be tested by identifying the members of "Italy's political elite" who have the same attributes as the victims (Lem 1978:152). However, one could object that, even if a number of middle-aged Italian politicians were to be identified who suffer from allergies, have a tendency towards baldness and so on, that would not be sufficient to corroborate the hypothesis; the similarities might be purely accidental. The only link between these politicians and the victims would be the existence of a hypothetical group of would-be political assassins. If the existence of such a group were to be confirmed, then it would have to be shown that they had access to compound x, and in fact used it as indicated by Barth. The empirical testing of Barth's theory would be a lengthy and very complicated process, and it may well be refuted in the end.

The narrator's positive assessment of the hypothesis can therefore best be explained by its boldness. According to Lakatos, a

theory is the bolder the more it revolutionizes
our previous picture of the world: for instance,
the more surprisingly it unites fields of knowledge
previously regarded as distant and unconnected;
and even possibly the more 'inconsistent' it is with
the 'data' (Lakatos 1978:170).

Apart from its boldness, the hypothesis has a certain narrative coherence, but neither of these attributes in itself justifies its acceptance.

The *dénouement* is sparked off by the narrator's decision to enter a barbershop and order 'the works' (Lem 1978:158), and his purchasing a 'bronze-coloured Vesuvius covered with roasted almonds' (Lem 1978:153). Subsequently, he develops, first, hallucinations, and then, the urge to commit suicide (Lem 1978:165-170). Like the victims, he suffers an existential crisis, the very effect which the simulation experiment failed to produce. Eventually, it is found that a hormone ointment, which the barber probably applied to the narrator's scalp, combined with a certain medication used for allergies, could form compound x. As a result of a number of almond factories in Naples' having been disinfected from cockroaches with a disinfectant containing sulphur, a chemical substance is found in the almonds he bought which causes them to act as a catalyst capable of increasing 'the psychotropic toxicity' of compound x 'a million times' (Lem 1978:171-172).

'Proque also fell into the trap, but by a different route' (Lem 1978:172): he, too, absorbed the substances which caused the reactions experienced by the narrator and the other victims, but via different sources. The 'missing link', the vital clue linking Proque with the narrator 'were the almonds' found with the latter's 'notes on the table' (Lem 1978:173). A further important detail is that 'cyanogen sulphide' introduced into the body by itself 'is incapable of having a catalytic effect on factor x; ionic sulphur must also be present in the reacting bodies' (Lem 1978:172). Most of the victims probably absorbed this from the mineral baths they used (cf Lem 1978:172). Proque inhaled 'sulphur dioxide from hypo used in developing photos' (Lem 1978:172-173). The ionic sulphur found in the narrator's blood possibly came 'from wine that had been allowed to sulphurize' (Lem 1978:173). This he probably drank 'at Barth's place, since I never ate any meals out' (Lem 1978:173).

Particular circumstances, together with physical and psychological attributes promoted the use of substances likely to cause this kind of chemical poisoning: isolation as a result of being unmarried

and non-Italian; baldness; the struggle with old age; the blooming season; a fondness for sweets (Lem 1978:174-176).

The investigators initially concentrated on the wrong attributes of the group of victims partly because they were unaware of the 'abortive cases', those in which the causal factors had a limited effect. This was the result of a 'chance circumstance', namely, the fact that 'the books of the various spas recorded only the financial transactions, and not the reason for cancellation' (Lem 1978:175). No trace of the harmful ointment was found amongst the victims' belongings, 'because rather than take the medication with them on their travels, the more conscientious among the older men could rely on the local barbers' (Lem 1978:175). Thus, the investigators were deprived of an important clue.

The narrator's 'accidental success' is the result of a series of interconnected chance events (Lem 1978:177). With regard to each event, the statistical probability of the narrator's involvement was extremely small; his involvement in all, even more so. The events are interconnected in that one led to the other, not in the sense of cause and effect, but in the sense that successive events are interdependent. The mathematician, Saussure, points out that each of the events was a vital link in the 'chain of chance' (Lem 1978:179). This remark can only be made *a posteriori*; the chain of events constitutes a random series, and therefore, their sequence cannot be predicted. At any point in the chain, future knowledge of the series would be impossible. Because the series is erratic and unpredictable, the problem could not be solved through rational analysis and experiment. Yet, to the extent that the trajectory of the series is regulated by specifiable parameters, it does not constitute a denial of reason itself: indeterminism and randomness are not contrary to rationality.

The key event, the narrator's being informed of the 'Proque affair', and thus, of 'compound x', is probably unrelated to the case; it may have been aimed at discrediting "a certain military official who was playing politics to promote Dr Dunant", the result of "the political infighting going on between Sûreté and Défense" (Lem 1978:179). Thus, the solution depends upon random scattered data, while the information which leads to the solution in a traditional detective novel constitutes a closed, compact system.

According to Saussure, the "Naples mystery was the result of a random causality" (Lem 1978:179), which can be defined as the coincidental intersection of a number of factors which were in themselves unrelated, but acted together to produce certain effects. Similarly, "it was the same random causality that solved it" (Lem 1978:179), through the narrator's involvement in a number of unrelated but interdependent events. If one of the events had not taken place, the 'chain of chance' would have been broken, and the narrator would have failed to find the solution, yet

"sooner or later someone would have met all the conditions" (Lem 1978:179).

In other words, the solution was rendered inevitable by randomness. There was a random probability that, sooner or later, the intersection of a certain combination of events and a specific set of personal attributes would create conditions favourable to the reactivation of the causal factors. The timespace coordinates of the intersection could not be predicted and the favourable conditions could not be specified in advance, but their occurrence was inevitable. In this sense, the 'chain of chance' can be described as a self-organizing system, that is, its internal dynamics produces a certain directedness (cf Gleick 1987:55, 252; Cambel 1993:19-20).

In this context, the role of cognitive rationality is limited to the formulation and testing of hypotheses as they erratically present themselves, and to the *a posteriori* description of the process. It does not actually 'break the code' as in *Il nome della rosa*, where William unravels the riddle of how to gain entry to the *finis Africae*, the most secret part of the library (cf 3.2).

Saussure's explanation for the random complexity of the process is that

Mankind has multiplied to such an extent that it's now starting to be governed by atomic laws. The movement of gas atoms is chaotic, but out of this chaos are born such things as stable pressure, temperature, specific gravity and so on (Lem 1978:176-177).

According to him, "we now live in such a dense world of random chance, in a molecular and chaotic gas whose "improbabilities" are amazing only to the individual human atoms" (Lem 1978:179).

5.4 Overview of investigative processes

In *The investigation*, the investigators are faced with a clearcut problem, yet struggle to find a plausible hypothesis or theoretical framework which would lend direction to their investigation. In *Chain of chance*, the object of investigation is incorrectly defined, in that the investigators focus on the wrong aspects of the problem - insanity, often followed by death - without realizing the importance of others, especially baldness. Unlike Holmes, Lem's investigators cannot claim to have a universally applicable method of investigation, which will inevitably result in accurate inferences. Confronted by random complexity, they are forced to adopt a variety of analytic approaches, which generate numerous hypotheses. These are almost without exception undecidable.

As in the traditional detective novel, the task of the investigators is to find an explanation which would adequately account for the data. Such a hypothesis should achieve maximum explanatory power with a minimum number of premisses, and should not introduce new unknowns or variables. It must also be consistent with the facts. In order to be empirical, hypotheses have to be falsifiable, have to be modified as required, and eventually refuted or corroborated. In principle, no hypothesis can be rejected out of hand; all have to be admitted as possible.

One of the conditions for falsifiability is 'dass ein Basissatz ein logisch mögliches Ereignis (einen möglichen Sachverhalt) beschreibt, von dem es seinerseits logisch möglich ist, dass es beobachtet werden könne' (Seiffert 1989:83). ['that a basis sentence should describe a logically possible event (a possible state of affairs), of which it is in turn logically possible that it can be observed'] Especially in *The investigation*, some of the events hypothesized are not observable. This suggests that the accent in the implicitly fallibilist-pluralist framework of Lem's texts falls, not on testability through observation, but on the accommodation of a plurality of divergent and often mutually inconsistent hypotheses; and on possibilism, according to which no hypothesis should be ruled out as 'impossible'. Although some of the hypotheses seem quite farfetched, even fantastic, and can neither be refuted nor corroborated on the basis of the available data, they should not for that reason simply be dismissed.

It is impossible to decide with finality which is the valid, or even the 'best' theory. Nevertheless, in *The investigation*, Shepard's could be accepted as the best available: it suggests a motive for the crimes, and covers the known facts of the case, without introducing new problems; it meets the requirements for falsifiability. However, it is only supported by vague circumstantial evidence, and any attempt to corroborate it would be defied by random complexity.

In the absence of positive evidence for this hypothesis, it is just as likely that the crimes were committed by one of the numerous other drivers who had both the means and the opportunity. The possibility of a better alternative to Sheppard's theory cannot be excluded. The choice of one of the Mailer drivers as culprit seems quite arbitrary, though not implausible. It can be regarded as plausible in that it is based upon objective data and circumstantial evidence, yet, in so far as it arbitrarily closes off the investigation, it amounts to an acknowledgement that methods such as the collection of evidence, interrogation and observation do not provide adequate tools for dealing with nonlinear problems.

In *Chain of chance*, eleven men are grouped together as 'victims' on the basis of common attributes and certain parallels between sequences of events. They are treated as a finite class of phenomena. Their deaths are treated as a finite set, not an open series. This seems questionable,

since the possible number of similar incidents is unknown. It seems more accurate to view them as a sample of a potentially infinite random series.

The investigating team tries to reconstruct the events through a simulation experiment, using an investigator who closely resembles the deceased and simulates their behavioural patterns. The assumption seems to be that this would re-activate the causal factors of their deaths. The whole process is carefully monitored, yet the hypothetical rule for the construction of the set cannot be confirmed. In any case, there does not seem to be any grounds for the assumption that the causal factors which might be activated through the simulation experiment would necessarily be the same as those which acted upon the victims. The assumption could at most be taken as a working hypothesis.

The experiment fails, because a chaotic system such as the one constituted by the victims and their circumstances and environment cannot be reconstructed with absolute reliability; the initial conditions are not exactly known. It is therefore unavoidable that there will be errors in the experimental setup. Even the slightest deviation from the 'original' system will blow up and lead to erratic results.

Ultimately, certain causal factors are identified by accident. However, they did not operate through the same agents in all the cases; the manner in which they were activated depended upon a fortuitous combination of events and circumstances. The solution itself is not the result of a linear reasoning process, but of the random convergence of interconnected elements.

According to the laws of probability, the solution was bound to occur sooner or later. Its occurrence is determined by the statistical distribution of the events and circumstances which produce it and their random intersection with the causal factors. The narrator accidentally fulfills the conditions for its occurrence by performing certain actions which, taken separately, are motivated, for example, by the need for hair treatment, but, viewed together, are random and unrelated. Saussure proposes the concept 'random causality' to describe this phenomenon. This idea cannot be corroborated, since randomness, by its very nature, cannot be verified by traditional experimental methods (cf Morin 1988:427). Yet the convergence of chance elements and the fact that a certain causality is shown to be operative indicate that the 'chain of chance' can be viewed as part of a self-organizing complex system.

5.5 The world as chaos

Saussure's notions of random causality and of human behaviour functioning according to atomic laws (Lem 1978:176) are compatible with Gregory's notion of a random universe (Lem 1974:204-205), and recall Nietzsche's concept of the world as chaos (see 1.1). Unlike Nietzsche, Lem's investigators seem to find that chaos is not simply disorderly. While Nietzsche seems to attach the popularly accepted meaning to the concept, the findings of Lem's investigators can be related to the notion of deterministic chaos (see 1.4 and 1.6), according to which the trajectories of chaotic systems cannot be described or predicted in terms of fixed general rules, but are somehow regulated.

In the sense that the causal relationships identified are governed by chance, they refute the idea of a stable, inherently orderly world. This is in agreement with Nietzsche's view. At the same time, it indicates that chaos generates a kind of order of which the parameters can be approximately specified, but not predicted; though unstable, the parameters can converge to recognizable patterns.

The convergence of the statistical distributions of the elements constituting the 'chain of chance' could be imagined to repeat itself at certain timespace intervals, which could be predicted, provided that the distributions remain consistent. In this instance, the system would become locked into periodic behaviour, certain events repeating themselves at regular intervals. Lem's text rather suggests that the distributions would be erratic, and their convergence unpredictable. Moreover, the distributions which have to be taken into consideration do not remain the same: part of the investigators' problem in *Chain of chance* is that the selection of the causal factors' agents is governed by chance; the effects they are investigating could be produced through any of a large number of randomly variable agents.

The subversion of deterministic causality and the resultant problematization of cognitive rationality as instrument for objective knowledge and understanding are central both to *The investigation* and *Chain of chance*. Lem's texts implicitly reject the possibility of a general explanation for any series of events in the world as chaotic system and suggest that, for such a system, all hypotheses beyond the level of the *ad hoc* and contingent are undecidable. This does not imply a rejection of cognitive rationality as such or a denial of the possibility of objective knowledge:

The ironic postmodern detective story
properly corrects the naive rationalism
of classical detection. But the popular
form recurs because against the nihilism

or at least radical skepticism of most postmodern fictions it images intellectual and moral truth...or at least the desire for all these (Steiner 1983:462).

The process of investigation in itself implies the tacit assumption that rationality is the only available instrument for knowledge and understanding. In this context, a radically scepticist view of rationality would be self-contradictory. Although the texts implicitly reject the rationalist assumption that there is a natural connection between rationality and objective truth, an intrinsic correspondence between reason and the true state of affairs, they seem to accept the notion of objective truth as regulative principle; they do not suggest that the only route open to cognitive rationality in an indeterministic world is the generation of arbitrary fictions. In this sense, they contradict Nietzsche's idea of truth as fiction (cf 1.1).

The ideas expressed by Gregory and Saussure, especially the latter's statement that, "Mankind has multiplied to such an extent that it's now starting to be governed by atomic laws" (Lem 1978:176) are related to the indeterministic worldview underlying quantum physics (cf 1.2). They view the world as governed by chance. However, randomness is not equivalent to mere disorder. It is possible for random sequences to have a non-random cross-correlation (Pagels 1983:109). The random events of quantum reality are not merely chaotic; they can be described in terms of statistical probability (Heisenberg 1984:421). Underlying the randomness of subatomic events is the 'order' of probability distributions. The statistical distribution of a number of random individual events can be non-random and stable (Pagels 1983:112-114). Similarly, the long-term behaviour of a deterministic aperiodic (chaotic) system does not simply oscillate wildly between different states, but is to some extent stable and regulated. This is exemplified by weather patterns over a period of time. Saussure's idea of 'random causality' also suggests that randomness and order, or chaos and rationality are not mutually exclusive, but co-exist; they can in fact be interdependent. Thus, it indicates that both optimist rationalism (Holmes) and radical scepticism (Nietzsche) are contradictory to the findings of modern science.

Applied to human behaviour, the rejection of deterministic causality can be taken to imply that freedom of choice is an illusion. In performing certain actions, such as committing a crime, man is not exercising his freedom of choice, and therefore, his actions cannot be described in terms of a linear progression from cause to effect, as in the traditional detective novel. Such actions are simply part of a random statistical distribution (Pagels 1983:115). It could be predicted according to the laws of probability that certain actions would be performed or that certain events would take place, but precisely when, where and by whom is governed by chance, in the form of

multidetermination and random complexity.

Saussure compares human actions and events to the 'movement of gas atoms' (Lem 1978:176). According to Boltzmann, the 'behaviour of a gas could be explained...by the random motions of very many molecules' (Gribbin 1986:368). Although the movements and interactions of the atoms occur in a random fashion, 'the rules that describe such a system...are very accurate and reliable' (Gribbin 1986:368). This leads us back to the notion of deterministic chaos.

Boltzmann's equations also admit the possibility of non-commonsense events, such as an ice cube in a liquid getting colder and the liquid around it beginning to boil, but state that such occurrences are extremely improbable (Gribbin 1986:368-369). The problem of the moving corpses in *The investigation* can be viewed as such a possible, but extremely improbable series of events. Deterministic causality cannot accommodate this, as it focuses on events which have maximum probability, on those events which are most likely to happen, which can be predicted according to fixed general rules (cf Kosko 1993:47). As it cannot deal with a world of infinite possibilities, it has to accept an approximate picture of reality, quite unlike the fractal complexity theorized by Mandelbrot and others. It creates order by suppressing multidimensional complexity. In the traditional detective novel, this approximate, simplified picture of the world is presented as objectively truthful and as validation of optimistic rationalism. Lem's texts implicitly refute this claim by highlighting infinite random complexity and illustrating the interdependence of order and chaos.

A further implication of Boltzmann's equations is that no event could be excluded as 'impossible'; in principle, almost anything is possible, though not all things are equally probable. In a world of infinite random possibilities, the infinite proliferation of hypotheses is unavoidable, and objective truth must itself be infinitely multidimensional, a fractal landscape. Against this background, the seemingly bizarre problem in *The investigation* is entirely admissible, even though it runs counter to commonsense notions about reality and to detective novel conventions.

5.6 Synthesis

Both in *The investigation* and *Chain of chance*, the idea of a stable, orderly world which functions according to definite laws is replaced by deterministic chaos: events, actions and interactions occur and interact in a random fashion, but the behaviour of the resultant system over a period of time can be regulated and fairly stable. Lem indicates elsewhere that a solution in terms of a coherent, comprehensive worldpicture is impossible (Lem 1984:23), but does not retreat into epistemological

defaitism.

In this context, there is no 'natural' connection between rationality on the one hand and objective truth and knowledge on the other. A hypothesis could be rational, that is, consistent, logically coherent, derived from empirical data and falsifiable, yet not provide access to objective truth and understanding. Rationality no longer affirms its supremacy by 'proving' the law and order inherent to reality; the role of cognitive rationality is to generate and test hypotheses, and to uncover new areas of investigation.

Accordingly, the heroic, individualistic detective of the traditional novels (Holmes, Poirot, Nero Wolfe and others) is replaced by an investigating team, who proposes a plurality of theories, some mutually exclusive, none of which could be ruled out as 'impossible', or finally identified as the best or most truthful.

This ties in with the idea, exemplified, amongst others, by the complementarity principle (see 1.2), that different, mutually inconsistent thought systems, theoretical frameworks or models could all correspond to reality, that is, be objectively truthful (Naess 1972:132): in theory, nothing is impossible.

Ultimately, it seems, there is no solution to the riddle of the world, no decidable general hypothesis about objective reality as nonlinear system, only the formulation of conjectures and the opening up of new areas of investigation. It may even be impossible to reach consensus on the definition of the problem itself, as that would depend upon the theoretical framework adopted, that is, upon an initial set of hypotheses, which would be open to criticism and could not be corroborated or refuted with finality. In this sense, pluralist cognitive rationality does not primarily focus on problemsolving, on providing answers, on the creation of a coherent picture of the whole, but on formulating the questions we should ask of the world, *ad infinitum*. Only thus can it come to terms with objective reality as an infinite proliferation of possibilities.

This is clearly illustrated by the shift from the determinist-monist optimism of the traditional detective novel, through Eco's moderate rationalism and Gadda's multidetermination, to Lem's emphasis on random complexity, with its inescapable corollary, the undecidability and inconclusiveness of hypotheses. Within the context of random complexity, the quest for clearcut solutions has to be abandoned in favour of radical open-endedness. This does not result in mere arbitrariness, since objective truth as regulative principle is not discarded, and the variable parameters for the investigative process are set by a plurality of rationalities which can also be seen as a self-regulating system, with its own built-in, underlying ordering pattern, reason.

CHAPTER 6 BY WAY OF CONCLUSION

Reason can be viewed as the strange attractor of a plurality of rationalities. As such, it is neither stable, nor homogeneous, but multidimensional and open-ended. It cannot be described by a comprehensive, general definition, but constitutes an underlying regulative pattern through which plurality is bounded and directed. In the case of *prinzipielle Rationalität*, this pattern is quite rigid and prescriptive, consisting of rules, norms and conventions; in the case of *okkasionnelle Rationalität*, its role is merely to regulate and lend direction.

In the present study, despite the significant differences between the philosophical approaches represented by the various investigators, there are certain common denominators, which confirm the presence of an underlying pattern.

All the investigators seem to accept the idea of objective truth as regulative principle, in that all seek hypotheses which would correspond to the facts in each case. In the Holmes narratives, it is accepted that hypotheses can be positively confirmed and thus become statements of fact; for Holmes, therefore, objective truth is not only a regulative principle, but an achievable goal. The conjectural aspect of the search for explanations is downplayed. Eco's detective indicates that exact and certain correspondence with the facts is unattainable, given that truth is the result of conjecture and interpretation. Nevertheless, he does not exclude the possibility of absolute truth and ultimate meaning. In the texts by Gadda and Lem, however, the investigators are defeated by nonlinear problems and random complexity, with the result that their hypotheses remain inconclusive and undecidable. Yet, their investigations have the same objective as Holmes's, namely, to construct hypotheses which would account for the data, adequately cover the facts of the case.

Without exception, all the investigators accept the possibility of objective knowledge. In this respect, they implicitly reject Nietzsche's idea of truth as fiction, that is, an arbitrary linguistic construct (cf Nietzsche 1964a:46). Objective knowledge can be defined as systematized information about the world outside the subject, such as, phenomena, actions and events. In Sherlock's case, this is fairly unproblematic, as the world is assumed to be shaped in the image of reason, and events in the world to confirm an underlying deterministic order. At the other end of the scale, though defeated by indeterministic events and random complexity, Lem's investigators implicitly deny the possibility of pure randomness in physical events. Their findings can be related to the concept of deterministic chaos; the idea that the behaviour of chaotic systems over a period of time is unpredictable, but regulated. Sciss, for example, has no difficulty finding correlations

between fortuitous events.

By definition, objective knowledge is not arbitrary. It is based upon objective data and derived from falsifiable hypotheses, that is, hypotheses which can be tested and corroborated or refuted. The data are generally accessible, not dependent upon a specific individual, though they can be influenced by the observer or the experimental setup. The status of objective knowledge in each of the texts analysed is related to the investigators' implicit position on objective truth. In the Holmes narratives, as objective truth is assumed to be an achievable goal, so objective knowledge is characterized by verifiability, certainty and precision. By contrast, for the investigators in chapters 3 to 5, objective truth is produced through conjecture and interpretation, and thus, objective knowledge is necessarily conjectural and falsifiable. Despite their differences, the various investigators seem to indicate that subjective knowledge would be useless for their purposes, in that it could not be refuted by alternative hypotheses based upon objective data; especially as described by Nietzsche, subjective knowledge seems to imply indifferent relativism, even a rejection of the possibility of a true/false distinction (cf Nietzsche 1964a:8, 30, 46). Thus, it places itself beyond testability against objective data and alternative hypotheses, which makes it irrelevant to the various investigations.

In the light of the above, it can be stated that the dissolution of monolithic Reason, the pluralization of rationality does not result in the unbounded proliferation of hypotheses, valued as entertainment or as 'interesting' narratives (cf Nietzsche 1964b:255). Even in terms of possibilist pluralism, according to which no hypothesis should be summarily excluded as 'impossible', the investigators' aim is to construct objectively truthful statements about events and phenomena, not arbitrary linguistic constructs or more or less plausible fictions.

Despite its fictional nature, the literary text itself can make or suggest objectively truthful statements about the world. A case in point is *The investigation*, in which the problem of the moving corpses does not correspond to events in the 'real' world, yet the text as a whole makes certain statements about events in the world, either explicitly or implicitly. To some extent, the line of demarcation between science and literature is blurred. Science and literature have completely different methodologies, yet their functions and objectives can be related. Both can be concerned with the problem of objective knowledge, cognitive rationality and objective truth in the context of an indeterministic physical world. In so far as the literary text strives for a plurality of meanings instead of unambiguous precision; the world it creates can be arbitrary and 'false'; and the propositions it contains do not have to be verifiable or objectively true, it seems ideally suited to investigate the position of the knowing subject within the context of random complexity and indeterminism. As such, it can complement scientific rationality and highlight the reductiveness

inherent to the contemporary technocratic emphasis on functionality and problemsolving. It could at the same time highlight epistemological concerns - 'What is there to be known? Who knows it? How do they know it, and with what degree of certainty?' (McHale 1987:9) - and ontological problems - 'Which world is this? What is to be done in it?' (McHale 1987:10). These concerns seem related: the problem of knowledge could affect our mode of being in the world, and vice versa. The interconnectedness of cognitive rationality and being in the world as *leibende Leben* is illustrated in Gadda's *Pasticciaccio* (see 4.4).

The lack of a solution in the so-called anti-detective novel has been offered as confirmation of the notion that the world cannot be known and that truth is unattainable (Mulder 1989:253). This seems unacceptable in the light of, amongst others, chaos theory; nonlinear problems preclude clearcut solutions, yet that does not unavoidably result in epistemological defeatism and radical scepticism. For the chaos theorist, as for the detectives in our study, the quest for objective knowledge and understanding continues. Random complexity is in fact all the more interesting in that it poses a deep, instead of a trivial problem.

Following Nietzsche, post-modernism rejects the possibility of certain knowledge and reason as foundation for objective truth (cf Spedicato 1984:28; Vattimo & Rovatti 1979:7; Welsch 1987:186-187). In this respect, it is not dissimilar to indeterminism in science (see 1.2) or fallibilist pluralism (see 1.5). The conjectural nature of causal relationships, to name but one example, cannot be denied (cf Hanson 1961:64). This, however, does not necessarily imply that the hypotheses concerned are baseless and arbitrary; rational beliefs are based upon objective knowledge, data and so on (cf Keynes 1921:10). Contrary to some post-modernist philosophers (cf Corradi 1985:478), assuming the possibility of rational beliefs within the context of fallibilist pluralism does not amount to a valorization of rationality as *Begründung*; verifiability and positive confirmation as prerequisites for objective truth were already discarded by Popper and Einstein (see 1.5). The present study indicates that reason can be viewed, not as a deep structure which would be stable and universal, but as a regulative pattern underlying the search for objective truth. Corradi's criticism fails to take into account philosophy of science after Popper or recent developments in the 'hard sciences'. This suggests that the contemporary (post-modern) debate about rationality and knowledge would be on shaky ground unless it integrated theories from contemporary physics, cosmology and so on into the discussion. Moreover, these theories should not simply be viewed as part of the cultural context (cf Hayles 1988:313-315) or confirmation of the absence of a universal Grund (cf Lyotard 1987:55-57), but also used to test post-modernist assumptions.

Literary theory is a parasitic discipline. It feeds on texts and borrows concepts from a variety of disciplines. This is perhaps unavoidable, inasmuch as literature deals with everything and anything. That in itself seems to justify a more extensive interaction with the 'hard sciences'.

Such a relationship could take different forms. It can consist in a striving for scientific rigour, as exemplified by classical structuralism. Scientific concepts can be used metaphorically, as tools to illuminate literary texts (cf Hayles 1991:19-20). By way of analogy, literary texts can be analysed as complex systems (Porush 1991; Stoicheff 1991; Knoespel 1991). One could identify parallels between certain theories of literature and scientific theories as part of a general paradigm shift (cf Hayles 1988:312-321). Or - and this is the position underlying the present study - the conceptual framework for literary analysis could be 'borrowed' from scientific theories on the grounds, firstly, that generally accepted literary theoretical concepts seem inadequate, and secondly, that scientific theories can be used to generate readings alternative to those suggested by well-known ideas about post-modernist literature (cf Bertens 1986:135; Spedicato 1984:28).

A truly holistic practice of literary analysis, it seems, can only be achieved through the integration of information from a variety of disciplines. The act of reading, for example, can be analysed from the point of view of reception aesthetics or Eco's theory of the reader as co-producer of the text (Eco 1983); this can be combined, amongst others, with findings about information processing in the brain, the physiology of the eye, biological reactions produced by literary texts, and so on. Such a holistic interdisciplinary approach could perhaps only be achieved by a research team, not by the individual critic working on his own.

Given that the literary text is a product of a large number of variables - cultural, biological, genetic, and others - it seems quite restrictive to advocate a 'purely literary' approach or to 'borrow' only from currently fashionable orientations in philosophy or psychoanalysis. Literature as a complex system can support a plurality of approaches. Specifically, contemporary science and technology are such a pervasive presence that theories of literature which fail to take it into account can become marginalized, exiled to the ivory tower.

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APPENDIX

Translations

page 2: 'the sentence does not contain a mere statement, it expresses a rule which allows exceptions. The sentence says something which necessarily has to be the way it is. Each and everything which exists necessarily has a foundation'.

page 2: generally, as the ability to formulate the fundamental proposition, it is the ability to represent something as something. The statement, "I represent something as something to myself" is a more precise version of Descartes' ego cogito, "I think".

page 6: Unfortunately, "'post-modern'" is a term which you can use any way you like. I have the impression that it is now applied to everything its users like. On the other hand, it seems there is an attempt to make it slide backwards: at first, it seemed to fit some writers or artists active during the last twenty years, then gradually, it reached the beginning of this century, then further back, and so it continues, soon the category of the post-modern will reach Homer'.

page 12: 'Science does not simply describe and explain nature as it is "in itself". Rather, it is part of the interaction between nature and ourselves'.

page 35: 'briefly, the average reader of detective novels, that is, the best reader of this literary genre, is someone who does not set himself up as the detective's rival in trying to solve the problem in advance, to guess the solution, to guess who the culprit is: the good reader knows that the solution is already there, on the very last pages...and that the entertainment, the pastime, consists in the condition - which amounts to complete intellectual passivity - of relying on the investigator'.

page 35: 'in novels of the genre, without precaution, that is, without the precaution typical of art, means are used which with a significant degree of approximation one can describe as terrorist: and the effect is the flight of thought, meditation without detachment'.

page 38: 'references to the corporal, to urine, to excrement, to hunger, to bad smells, and similar phenomena on the one hand represent something uncomfortable, and on the other, something irrelevant...they represent that which is degrading and vulgar in the life of man...they do not offer anything which may contribute to the understanding of any thing at all, and thus, they are destined to remain excluded from rationality itself'.

page 46: 'In detective novels from Conan Doyle to Rex Stout, these proofs are unnecessary. The detective imagines the solution and says it as if it were the truth: and immediately, Watson, the culprit, or somebody else confirms the hypothesis...And the detective is sure of having guessed right. In detective novels, the author guarantees the correspondence between the Possible World imagined by the detective and the Real World'.

page 47: 'he remained on all fours. Truly, in my mind I could only compare him to an admirable hunting animal on the trail of some amazing game animal'.

page 47: 'What is at play here is being logical, but logical, please note, as the dear God was logical when he said $2 + 2 = 4!$...What is at stake is handling reason in the right manner!

page 48: 'taking in everything, everything which we saw, which was not much, and everything which we did not see, and which was, it seemed, enormous.

page 86: 'this does not prevent many to steal with impunity and the women to wear such short skirts that when they are seated, you see their thighs, their garters, their panties, as far as Bellagio point, even as far as villa Serbelloni...'

page 89: 'For Gadda, gauging and taking possession of the world of the feminine, with the related satisfied feeling of penetration, is equivalent to the urge to close the inclusive circle of knowledge - one ends up where one came from'.

Page 91: 'Thus a continuous labyrinth is not a line dissolving into independent points, as flowing sand might dissolve into grains, but resembles a sheet of paper divided into infinite folds or separated into bending movements, each one determined by the consistent or conspiring surroundings' (Deleuze 1992:6).

page 112: 'Experience is no basis for knowledge. It also does not provide a criterion for truth at all, which would enable us to identify the one true theory, and to select from the profusion of possible theories. The epistemological-methodological function of experience consists exclusively in being a critical, that is, a potentially falsifying authority for our speculations which have become solidified into scientific theories'.