Richard Walsh · Susan Stepney *Editors*

# Narrating Complexity

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# Part I
# Scene Setting

# Chapter 1
# Introduction and Overview: Who, What, Why


**Richard Walsh and Susan Stepney**

**Abstract** The introduction provides an account of the genesis of this volume. In particular, we sketch its prehistory in the dialogue cultivated by the NarCS network between complex systems scientists and narratologists, and introduce the fundamental questions animating that dialogue. It supplies the conceptual framework within which the network pursued those questions, and explains the interdisciplinary methodological assumptions we adopted from the outset, and which also inform this volume.

The scene: a YCCSA interdisciplinary seminar, with scones, circa 2012.

| | |
|---|---|
| **Narratologist:** | Nice scones! |
| **Complexity Scientist:** | They are, aren't they? We find they're the most effective bait. |
| N: | I like the interdisciplinary environment you've got here around complex systems. I think narrative has a similar role to play in the humanities. |
| CS: | So your field is narrative—stories, you mean? |
| N: | More or less. Narrative theory is concerned with the kind of meaning, or logic, that characterizes stories. Narratives can be found in fictional and nonfictional discourses, in different media, in ordinary conversation. In the largest sense, narrative is a fundamental part of how we think. |
| CS: | So what's the connection with complex systems? |

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N: Well, one result of understanding narrative that way is that narratives turn out to be everywhere—

CS: —just like complex systems—

N: —so that the concept of narrative starts to seem so general that it risks becoming almost meaningless.

CS: Yes, "narrative" has become a buzzword for political spin-doctors and people like that, hasn't it? I never know what they mean by it.

N: Neither do I. It's an example of the way in which a concept can become so inclusive that its stops doing any real work. That's why I'm interested in defining the limits of narrative representation; and complex processes seem to present one, because they are non-linear.

CS: Well, non-linearity is certainly a characteristic of complexity in systems—they don't generate nice straight line graphs. Complex systems have interesting properties like strong interactions between their parts, feedback, emergence, self-organisation, adaptation, growth, change. None of these is a "straight line" process. But why is that a problem for narrative?

N: I think because narratives reduce complexity to linear sequence...

CS: Ah—different senses of "linear," I think. One is linear *response*, and that's the usual complex systems meaning, and the other is linear *temporal sequence*, which I think is your narrative meaning. But for that matter, isn't there such a thing as a "non-linear" narrative, in your sense? "The Garden of Forking Paths," the film *Sliding Doors*, that kind of thing? How do they fit? Or is that something different?

N: It's different, or perhaps just a misnomer. Narratives can explore non-linear temporality, but to be intelligible as narrative they still depend upon its essential linearity. The Borges story is *about* the idea of forking paths in time, it doesn't enact it; and even where narratives do present several incompatible sequences of events, as in *Sliding Doors*, they present each one as, precisely, a sequence—they haven't really evaded the linear logic of narrative at all. That's the problem I mean: if a complex system involves a network of interactions all going on together in reciprocal and recursive ways, a narrative might trace one or other sequence within that network, but it can't possibly capture the systemic nature of what is happening.

CS: That certainly captures something about the difficulty of understanding complex systems. Still, we can get a grasp upon them in other ways—we can construct models and run simulations, and these often show how systemic interactions can produce the emergent behaviour of the system.

N: Ok, so models and simulations show the operation of a system rather than telling it? The distinction between showing and telling has a history within narrative theory, so that's interesting. But how do you understand the idea of emergent behaviour?

CS: It's not at all well defined; there are several different definitions and descriptions. One that might be interesting here is the one that defines it in terms of needing two different languages. There's one language for describing the system at the micro-level where the action is, and another different language for describing the macro-level, where the emergence is seen. The emergent property is a different kind of thing, and so needs a different language for us to talk about it.

N: It seems to me that you might say emergent behaviour in a system is behaviour that becomes narratable at another level of representation?

CS: That sounds interesting. What's the difference between something being *narratable* and being *describable*?

N: Another opposition with a history in narrative theory! I'd say that any representation is broadly a form of description, but that narrative is our innate way of representing process—it's the form in which we make sense of stuff happening. So we seize upon patterns of emergent behaviour in systems because we can articulate them in narrative form; but the narrative we tell is oblivious to the systemic interactions actually producing the behaviour.

CS: I suppose it's generally true that the main interest of complex systems is what they do, how they behave; how to explain it, or predict it, or control it.

N: Yes, and our cognitive framework for representing behaviour is narrative; we're highly dependent upon it. Whenever we have to explain research publicly, we're told: "tell a story." But for complex systems—evolution by natural selection is a good example here—telling a story actually misrepresents what's going on. It's a problem for science communication, isn't it?

CS: Not just that; it's a problem of communication even between complex systems scientists—we're only human, after all!

N: Right, even when we know that the mechanism of a process is systemic, there's a sense in which this doesn't amount to understanding until we can bring it into relation with narrative. We understand the way the world works through our narrative structures.

CS: But if so, given we don't have any complex narratives, doesn't that mean we literally can't understand the complex world?

N: Exactly! So what narrative theory needs to do is explore ways to complexify narrative...

CS: And what complexity science needs to do is find new ways to narrate complexity!

**Both**: To the Bat Cave!

And so it began. The dialogue above, or something like it, was the inaugural event of the collaboration that has led to this volume. It quickly became clear that narratologists and complex systems scientists had much to learn from each other, and potentially much to contribute to each other's research. We drew together an international group of interested researchers from both sides of the dialogue and from various disciplines, and formed the Narrative and Complex Systems network (NarCS). The nature of our collaboration immediately raised questions of interdisciplinary methodology. Its whole basis was the incommensurability between two frames of reference: what complex systems science shows us about how the world works, and the way narrative sets limits upon our ability to cognitively grasp that information. We did not want to presuppose the possibility of synthesis, either between objects of knowledge and modes of knowing, or between the disciplinary orientations that represented the two sides of the narrative-complexity problem. This encounter between disciplinary orientations looked a lot like that between the sciences and the humanities, in a kind of reprise of the "Two Cultures" debate of the 1950s and 1960s, with the social sciences occupying an interesting intermediate position to which their own internal methodological debates testify. Instead of a presumption of interdisciplinary synthesis and the consilience of knowledge, then, we adopted a model of interdisciplinary encounter—and dialogue. The reciprocity of dialogue, indeed, has informed both the process of collaboration within the NarCS network and the design of this book—and not just the decision to open it with a dialogue.

The activity of the NarCS network centred upon a series of workshops built around papers and presentations that articulated aspects of our common theme from different disciplinary perspectives. The principle was that we each brought our specific expertise to the exchange, and took from it the responses we elicited and the promptings of other members' presentations. Cumulatively, we began to map out a conceptual terrain that demarcated the several domains and levels on which the fundamental dialogue within the network was operating. We identified four quadrants, under the headings Communication, Culture, Conceptualization and Cognition (Fig. 1.1).

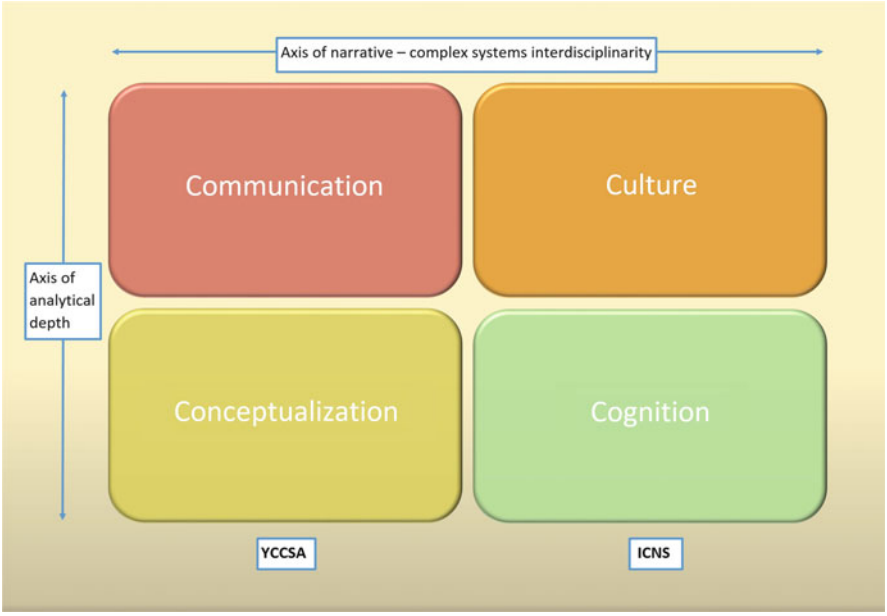


**Fig. 1.1** A tale of four quadrants

The arrangement in two columns reflects the two sides of the dialogue at a basic level. Communication, in the left column, designates the problem presented by complex systems as, centrally, a science communication challenge of primary concern to complex systems scientists. Culture, in the right column, designates the efforts of elaborate forms of narrative, in various media (fiction, film, interactive digital media), to imagine and grapple with the representation of complexity.

The two columns, then, represent the home turf of, respectively, complex systems science and narratology; or the York Cross-Disciplinary Centre for Systems Analysis (YCCSA) and the Interdisciplinary Centre for Narrative Studies (ICNS).

The vertical axis distinguishes between the *level* of these public discourses and the theoretical level underpinning those manifestations. In the second row, Conceptualization refers to the ways in which complex systems science theorizes, models, and simulates the forms and behaviours of complex systems, while Cognition refers to the narratological theorization of narrative as an elemental cognitive mode of sensemaking, a specific logic intrinsic to the human understanding of processes.

It became apparent, though, that the dialogue between the narratological and complexity science perspectives was a layered phenomenon, and that within each of these quadrants we could distinguish orientations towards the topic that foregrounded its complex systems aspect or its narrative aspect (Fig. 1.2).

Here, nesting within the broad dialogue between the left and right of the diagram at the surface level and the deep level (that is, between Complexity Science and Narratology), there is a further dialogue between the left and right of each quadrant:

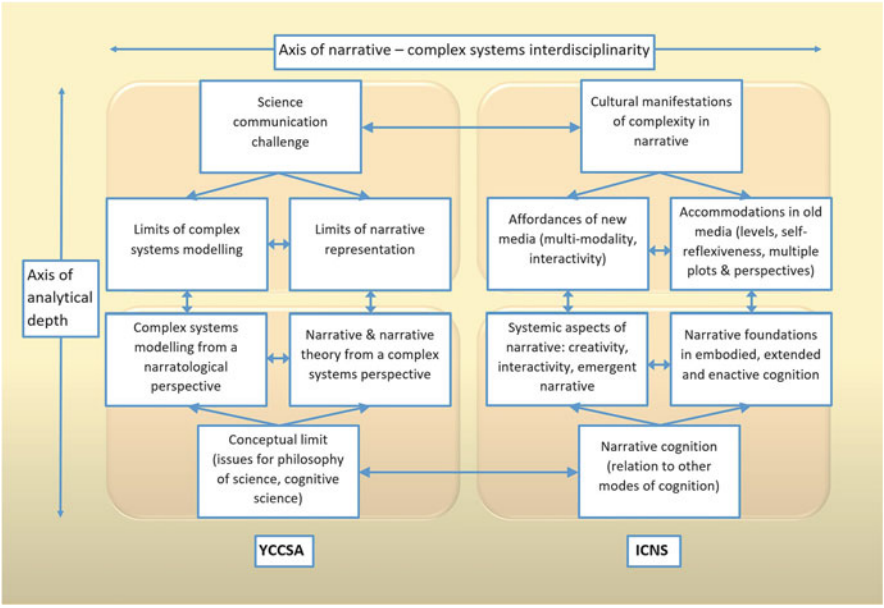


**Fig. 1.2** Drilling down further

- Under **Communication**, the responsible public representation of complexity science calls both for a constructive appropriation of innovative narrative representations to complex systems modelling, for example through the hybrid, semiotic *and* experiential forms of interactive narrative; and for a critical perspective that foregrounds the limits of narrative representation and informs public awareness of these constraints.
- Under **Culture**, we can distinguish between the possibilities for innovative engagement with the representation of complexity afforded by digital media and interactive narrative on the one hand, and on the other hand the respects in which the most developed traditional cultural forms of narrative can be seen as highly reflexive, in the systemic sense that reflexive cycles of development underlie the elaboration of such narrative resources as genre, fictionality, vraisemblance and intertextuality, thematics, and levels of narration and focalization.
- Under **Conceptualization**, the theorization of staple complex systems ideas like emergence stands to gain considerably from the implications of its reciprocity with narrative; while even the most fundamental scientific practices of modelling, simulating and manipulating complex systems reveal implicit narrative assumptions that can animate narrative theory.
- Under **Cognition**, models of emergence offer a valuable approach to questions about the evolutionary and individual development of narrative competence, and the respects in which this development may be articulated in terms of reflexive

processes of abstraction from the particular, and recursive cycles of interpretative oscillation between the particular and the general. Likewise, emergence becomes of central interest to our conceptions of narrative sense-making as grounded in embodied cognition, in behavioural interaction and in systemic social contexts.

In short, the reciprocity inherent in a dialogic approach to interdisciplinarity also proves to be recursive in its operation, which gives great encouragement to our expectations that emergent effects can arise from the research process itself.

That being so, we decided early on that we wanted the same recursive dialogic process to inform the production of this volume, and that the process should still be visible in the volume's final published form. Each of the essays presented here is the outcome of several rounds of presentation and response, orally and in print, between members of the NarCS group. When the essays were in draft, we formalized this process by having each essay reviewed by members of the NarCS group, from both the complexity science and the humanities subcamps. The process was an instructive one with respect to the challenge of making ourselves intelligible to each other, and also genuinely provoked new thought and intellectual progress in the revised essays. At the end of many essays we have retained a selection of comments from their draft readers, along with responses from the authors; in the case of the essays by Adam Lively, Federico Pianzola and Romana Turina, we have appended a three-way exchange between them in response to each other.

The question of mutual intelligibility is not a trivial one when attempting interdisciplinary dialogue of the breadth undertaken in this project. Incomprehension is the least problematic part of it; often, the appearance of comprehension turned out to be treacherous, and we discovered that we were using terms in quite different senses, or that we had assumed quite different unspoken premises. The sense of risk was tangible; often it felt as if the whole exchange might suddenly turn out to be based upon a misunderstanding, and crumble to dust. One of the prefatory tasks we have undertaken for this volume, therefore, is to present a reciprocal pair of introductory chapters: one offering an outline of key ideas in narrative theory with the needs of a readership of complex systems scientists primarily in mind; the other offering an outline of the central concepts of complex systems science with narratologists primarily in mind. We are fairly sure, however, that these chapters are of interest to a much broader audience than this specific brief might suggest.

Our editorial overview of the content of the chapters is reserved for Part III of the volume, where it forms part of the retrospective analysis of what we have learned. Readers seeking guidance on the topics and arguments presented in order to direct their reading may turn directly to Part III if they wish.

# Chapter 2
# Narrative Theory for Complexity Scientists


**Richard Walsh**

**Abstract** The aim of this chapter is to outline some of the key ideas and concepts in narrative theory, in order to make the field more accessible to those who have only a passing acquaintance with it (complexity scientists in particular). The chapter first gives an account of what narrative is, and then goes on to draw out some of the implications of that account for the way we think and understand in narrative terms. My discussion of these implications draws attention, as opportunity arises, to respects in which the form of narrative bears upon our ability to understand and communicate the way complex systems behave. The chapter does not survey the many facets of the problematic relation between narrative sensemaking and complex systems (that is really the work of the book as a whole), but it does provide a reasonably solid theoretical underpinning for the narrative problems, questions and possibilities taken up in subsequent chapters.

## 1 Introduction

The account of narrative offered here aspires to be recognizable and broadly acceptable to most narrative theorists, but it is not simply an exposition of the current state of knowledge about narrative; rather, it takes (and argues for) a particular view. Narrative theory, like most humanities-based discourses, is not a paradigm-based incremental science. It has a number of competing paradigms, some of which have gained some ascendency at certain periods, and all of which have roots in the broader history of the field. There is always scope for theoretical disagreement at every level, and consensus is as likely to be a manifestation of stale orthodoxy as a basis for the

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advancement of knowledge. In what follows I have tried to flag areas of substantial disagreement, but of course even the rhetoric of my qualifying statements should be viewed with suspicion.

## 2 Narrative

If we begin with the broad assumption that "narrative" means "story," we are somewhere close to the concept. However, the term "story" has a restrictive and skewed range of associations, suggesting (for example) a more or less extended, more or less conventionalized form of communication, often diverting, often fictional, sometimes artful. Also, as will become clear, within narrative theory the word also has more specific, technical senses (more than one, unfortunately). Most importantly, though, the sense of "narrative" with which we are concerned is somewhat abstracted from the sense in which "a narrative" is approximately synonymous with "a story," or even from the sense in which "narrative" is "the type of discourse characteristic of stories." Rather, we are concerned with narrative as a primary mode of thought, one that has a specific form and therefore constitutes a specific kind of logic.

Narrative, understood in these terms, is a basic way of making sense that is central to our ordinary engagement with the world and each other. While the logic of narrative is certainly deployed in stories, it is more fundamentally part of how we think. Nor is it simply an aspect of our linguistic ability (it is not dependent upon language, and may well be more primitive than language). Narrative is a mode of cognition, a distinct form of sensemaking with its own specific and limited range of affordances.[1] Narrative cognition is an essential and powerful means of understanding, and at the same time a significant constraint upon our ability to make sense of phenomena that resist its logic—notably, the behaviour of complex systems.

In order to clarify the implications of narrative for understanding, though, we need to define it more exactly. The following definition of narrative is my own, and by no means canonical, but it has the merit of delimiting the object of study whilst assuming as little as possible about it (without falling into metaphysics). It is therefore more abstract than most such definitions, though it allows us to arrive at the more common ideas of narrative subsequently:

**Narrative is the semiotic articulation of linear temporal sequence**

I go through this definition word by word below, but to get a preliminary grasp of it we might gloss it by saying that narrative is a way of meaning—"semiotic articulation"—not a kind of occurrence (something that happens is not, as such, narrative); and that it is concerned with a certain form—"linear temporal sequence"—not a certain subject matter, or a certain purpose. The definition leaves

[1]Essential sources for this view of narrative cognition are Bruner (1991), Turner (1996), and Herman (2002).

implicit some features of narrative that are taken as definitional in many other accounts, and I draw attention to these differences below. Many such features are really consequences of the nature of narrative cognition, rather than being intrinsic to it, and I address such consequences in Sect. 3, "Implications." The aim here, however, is to specify what is distinctive about narrative without saying too much and prematurely restricting the concept.

The core of the definition is its final term, which all the others premodify. For the sake of clear exposition, then, it makes sense to start at the end and work backwards through it.

## 2.1 Sequence

"Sequence" is the most neutral term possible for the specific formal relation that narrative articulates. It represents a bare transition from formlessness to a specific (total) order. What matters is this sequential form, not what it is that is sequenced. Accordingly, the definition leaves out things (such as consequence, events, or agency) that are certainly general characteristics of narrative, and might be thought definitional—are indeed definitional, according to some narrative theorists. In this definition, however, these characteristics do not define narrative, but result from the kind of order that narrative imposes upon phenomena. It is important to maintain a distinction between narrative thinking itself and the effects of such thinking.

"Consequence," for example, would have smuggled in the notion of causality, and so begged the question of whether causation is a condition for narrative representation or one of its conceptual products. This is not only a question for the philosophy of science but also a pragmatic caution: narratives frequently do impute causal connections without positively asserting them, and often in manifestly erroneous ways.

What about "events"? The event is the fundamental unit of almost every definition of narrative you're likely to come across, but that too seems to beg the question. Such appeals to the idea of "event" treat it as both a punctual and a durational concept. Some definitions assume that it is the link between two or more events that makes a minimal narrative, but an event can also be understood as something with internal structure and duration.[2] Such internal structure is explicit in definitions of narrative as minimally the articulation of a single event, but even the notionally punctual events that comprise two-event examples of minimal narrative can invariably be reconceived as durational: for example, consider the two events in E.M. Forster's minimal story, "the king died and then the queen died" (Forster 1962, p. 87). The narrative event is itself a product of narrative thinking, not its raw

[2]For a two-event definition of minimal narrative, see Prince (1982); for a one-event definition, see Genette (1988).

material; and it is itself an open question whether narrative thinking is adequate to the actual structure of processes, as this volume testifies.

Many narrative theorists would also want to insist that narrative is more specifically concerned with sequences of acts, that is, with agency; and I think it is, even where a particular narrative concerns entirely inanimate processes (a solar eclipse, say), for reasons that I discuss below. But if we want to consider a sequential account of a solar eclipse as a narrative—and I do—then agency too is better thought of as one of narrative's effects rather than a constituent element. This view also applies to a related and even more restrictive criterion for some definitions of narrative, which is "experientiality."[3] The essential quality being insisted upon here is not that narrative represents the action of agents, but that it represents experiencing agents; it is about their subjective experience, not just the action in itself. Again, this can't be literally the case unless the scope of narrative is restricted considerably. How much? Should there be no narratives without human agents? If not, how far should the criterion of experientiality extend, literally or figuratively? Narrative doesn't always deal in the human or human-like, but it does always bring its materials into relation with a human frame of reference, because that is what making narrative sense entails. In doing so it necessarily imposes a range of collateral ideas to some degree, including agency and experientiality.

## *2.2 Temporal*

The sequential order narrative imposes is not spatial or conceptual, but temporal. Narrative is fundamentally about time, a quality which is distinct from the fact that expressing or producing it, as well as interpreting it, happens in time. In this respect, narration may be contrasted with description. Description is like narration in that it takes place in time, but unlike narration in that its own logic is spatial. This is to say that a description of a process either *is* a narrative, or is a conceptual spatialization of its temporality (the latter being an important alternative to narrative in the case of systemic processes). Conversely, a narrative may of course include spatial information (a substantial narrative may include extended passages of description, for that matter), but this is inessential to its logic as narrative. In this sense narrative and description are complementary, antithetical conceptual dispositions towards spatiotemporality.

Narrative, then, has a dual temporality, in that it both predicates temporal sequence and is itself articulated in temporal sequence. A narrative is *about* a certain temporal sequence, and its narration *has* a certain temporal sequence, and the two may not directly align. This quality has been a focus of enquiry in narrative theory, not least because the relation between these two temporalities, that of the told and that of the telling, is often exploited in the elaborate literary narratives that

[3] See especially Fludernik (1996).

narratological research has tended to favour. But such a circumstance is itself indicative of narrative's important capacity for reflexive elaboration. Just as it is possible to transform description into narrative simply by projecting, for example, the story of an act of looking onto its discursive movement from point to point, so it is possible for the temporality of a narrative's telling to become itself an object of narrative, giving us represented acts of narration. This reflexiveness is commonplace in more elaborate narrative forms, and it is often also recursive.

I have already rejected the idea that causal relations define the scope of narrative, but causality is often touted as a crucial feature taken to distinguish "narrative proper" from "mere" temporal sequence.[4] According to this definition, however, causality (or a certain notion of causality) is not a foundation for narrative sense but one of its contingent products. This view accords with a famous suggestion by Roland Barthes, that narrative is characterized by a systematic application of the logical fallacy, *post hoc ergo propter hoc* (Barthes 1975, p. 248). Accordingly, to define narrative by reference to causality would be to make one of the conceptual effects of narrative into a prerequisite for narrative. But might not a similar argument be advanced against defining narrative with reference to temporality? There is some force to this objection, and indeed approaches to narrative grounded in phenomenology have emphasized that our senses of time and narrative are dependent upon each other and mutually reinforcing.[5] If so, it would seem illegitimate to give conceptual priority to temporality and invoke it as part of a definition of narrative. But, on the one hand, our experience of temporality is broader and more fundamental (even if less coherent) than our narrative grasp of it; nor is narrative our only resource for thinking about time. And on the other hand, it is in any case folly to expect that an even more abstract definition would deliver more solid metaphysical foundations.[6]

## 2.3 *Linear*

The word "linear" in the definition serves to delimit the particular kind of temporal sequencing characteristic of narrative, and to exclude and contrast with the "non-linear," despite the fact that certain kinds of narrative—especially literary narrative—are often characterized as non-linear, and celebrated for that reason. There are two distinct senses of the non-linear at stake, however. The first, which is the sense that actually applies to narratives, refers to the various ways in which the articulation

[4]For example, Forster distinguishes between plot and mere story (in his own specific sense) on the basis of causality; so "The king died and then the queen died *of grief*," he says, is a plot (Forster 1962, p. 87). Causality also features prominently in White's distinction between annals, chronicle and narrative proper in his own, restrictive sense (White 1980); and causality is made the central feature of narrative in Richardson (1997), and in Kafalenos (2006).

[5]This is the central theme of Ricoeur (1984–1988).

[6]The philosophical background to the relation between narrative and time is nicely expounded by Currie (2007); see also the chapter on time in this volume ("Time Will Tell", Chap. 19).

of events in a narrative may not be given in a single consecutive sequence (i.e., non-linearity in narration), or the events narrated may not cohere as a sequence in principle (i.e., non-linearity of the narrated). Such narratives may simply narrate a non-chronological sequence of events or, more radically, they may fork down mutually exclusive paths, or form endless cycles or paradoxical strange loops. Even in the most extreme cases, however, "non-linear narrative" is strictly a misnomer, because these are not alternative forms of narrative so much as ways of impeding or subverting narrative. All these strategies are striking in part because they foreground the fact that narrative logic itself is always doggedly linear, requiring an inexorable progression from point to point, one by one, even when the narrative is structured in a way that exposes how pedestrian or inadequate this is.

The other sense of "non-linear" is the mathematical sense, in which the changes in two (or more) related variables are not directly proportional to each other. This sense applies only figuratively, at best, to "non-linear narratives." However, the centrality of non-linear systems to complex systems science does bear importantly upon narrative in two respects. Firstly, narrative is inadequate to the task of representing non-linear dynamical systems because of its limited ability to model multiple, simultaneous, reciprocal and recursive relations. The limitation is not just a practical matter of our finite cognitive resources, because our reliance upon narrative sensemaking (which is itself an adapted form of cognitive efficiency) makes it into a matter of principle. The narrative conception of temporality is linear in that it is founded upon an additive procedure (this particular, and then this, and then this; one damn thing after another), which gives narrative effective attentional focus, but at the cost of its synoptic grasp. Such a procedural constraint fails to address the quality of mathematical non-linearity captured by the phrase "solutions cannot be added together," and therefore cannot cope with complex systemic processes. Or, to frame the problem more generally, narrative is definitionally unable to account for the quality in *processes* that corresponds to the unity of complex *substances* as Aristotle conceives it; namely, in his much quoted phrase from the *Metaphysics*, the respect in which the whole is (according to various translations) "something beside," or "distinct from" or "over and above" the "mere heap" or "aggregate" or "sum" of the parts.[7]

Secondly, and antithetically, any given narrative may itself be considered to function as a system, in that its own coherence depends upon a network of significant relations within the medium in which it is told. The systemic discursive realization of a narrative may be part of a larger, prior system of meaning, such as a natural language, or it may establish its own signifying structure, as with a performative narrative. In either case, these systemic relations are internal to the narrative's operation as a way of meaning, and distinct from the temporal relations it attributes to its referent by giving narrative form to some actual or conceptual process. Meaning is a systemic phenomenon that narrative strongly coerces into the form

[7]From the *Metaphysics*, Book 8, 1045a. These are the translations of, respectively, Ross (Aristotle 1908), Tredennick (Aristotle 1933), and Bostock (Aristotle 1994).

of a linear logic. Even as a narrative imposes this logic upon its materials, its own dynamic production of meaning (the process of its articulation, or the process of any subsequent interpretation of it) is a manifestly non-linear process, involving a geometrical proliferation of significant relations with each meaningful unit that is introduced.[8] This important quality is particularly evident, for any extended narrative, in the gap that opens up between denotation and connotation; between what the narrative propositionally says (as the expression of a linear logic) and what it implies (through its elaboration within a system of meanings). Narratives, intriguingly, are themselves instances of the non-linear dynamic systems they are so ill-equipped to represent. This circumstance is crucial to the potential for cultural elaborations of narrative to transcend the limitations of narrative form. Not only does it offer a powerful conception of the history of narrative, it is also highly suggestive for the further potential of emerging forms of narrative in contemporary culture.

## *2.4 Articulation*

The term "articulation," in this definition, serves to express the idea that narrative is indeed fundamentally a process, a meaning-making activity, both in production and reception. While a narrative *text* is a thing, narrative in the sense intended by this definition is neither that text itself, nor something transmitted by that text, but the basic cognitive mode of its creation and its interpretation. The word "articulation" has specific advantages in conveying this idea. It might seem that "communication" would be a more self-explanatory alternative, but that would limit the scope of narrative to its social manifestations, whereas we are seeking to characterize a kind of cognitive process. Although the conditions in which narrative cognition originated were very probably social, and possibly communicative, and indeed some kinds of narrative thinking might appropriately be described as forms of self-communication, even an internalized notion of communication doesn't capture the most elementary instances of narrative cognition.

Another alternative with less restrictive connotations than "communication" would be "expression," but there is a second objection to both of these terms. The problematic implication of both words is that there is something—some content, structure, meaning or intention—that exists prior to the narrative act, and is transmitted by it. Such a transmissive model of narrative looks plausible, perhaps, when the narrative concerned is taken to be a specific recounting of some prior conception, or "story," in another specific narratological sense of the word. In this view, a narrative's "discourse," the telling, is conceived as the transmission of its "story," the told.[9] A distinction of this sort seems plausible when interpreting the literary

[8] A unit of (narrative) meaning is a "seme" for Greimas (1983) and Barthes (1974); or a "narreme" for Dorfman (1969).

[9] The distinction between the telling and the told as "discourse" and "story" comes from Chatman; in the older terminology of the Russian Formalists, it is "syuzhet" and "fabula" (Tomashevsky 1965).

narratives on which narratology has tended to focus, not least because their narration often prominently deviates from chronological order or other kinds of perspectival coherence. Even in literary contexts, though, it is a problematic and contested idea, and one that I have argued against myself (Walsh 2007, Chap. 3). But in any case we are concerned here not just with the interpretation of extant narratives, but with narrative as a primary sense-making process in which meaning is created rather than merely transmitted, so we need a term with that connotation.[10]

"Articulation" works here because it can do the work that "expression" and "communication" do, and at the same time convey the required sense of "structuring, jointing; giving form to." To articulate, then, is both to *produce* significant form and, in doing so, to *express* it at the same time.

## 2.5 Semiotic

Semiotics, a field that was formalized by Charles Saunders Peirce in the late nineteenth century, is the study of signs and systems of signs and the production of meaning. The articulation of narrative is of a semiotic kind because it belongs to the realm of meaning and the use of signs, even where these signs are percepts, functioning within the mind's native perceptual systems. Narrative does not occur in the world, unmediated by the mind; rather, it is a cognitive process by which the mind makes the world intelligible, abstracting usable sense, pattern and order from it in some semiotic form. Narrative is only constituted as narrative in this conceptual abstraction from the immediacy of embodied experience to a semiotic domain.

This definition describes narrative as a semiotic process, rather than a more narrowly linguistic process, for more fundamental reasons than the evident fact that narratives can be told in media other than language. There are certainly many non-linguistic media that serve as vehicles for narrative, notably film (including silent film), visual arts such as comics, and performance arts such as dance, drama and mime; but this fact does not in itself preclude the possibility that we make cognitive sense of such narratives in linguistic terms. The more important consideration is that to characterize narrative cognition as linguistic would be to make it a much narrower concept than this definition intends. Peirce distinguishes between three types of sign: symbols, icons and indices.[11] While there is a loose sense in which any semiotic system can be called a language, linguistic signs in the strict sense are symbolic signs, those in which the relation between the sign's form and its meaning is purely conventional. In order to understand narrative cognition as a mental process operating most fundamentally at the level of perception, we also need

[10]My distinction here draws upon the one between "making sense of stories" and "stories as sense-making" in Herman (2003, pp. 12–14).

[11]For the first elaboration of these categories of signs, see Peirce (1982–, vol. 2).

to accommodate iconic signs, in which meaning involves resemblance, and indeed indexical signs in which meaning involves direct empirical connection.

It might be urged that narrative is not just semiotic but more specifically representational, and that the latter would be a more appropriate term. But it is at least plausible that the logic of narrative cognition can and should be understood in abstract terms distinct from its representational manifestations. There is, for example, some suggestive research on the connections between narrative and music (in an abstract rather than programmatic sense) that makes it worth keeping open this possibility.[12]

## 3 Implications

Narrative, then, is the semiotic articulation of linear temporal sequence; a basic cognitive mode of sensemaking that creates meaningful form with a specific temporal logic. It is the way in which we are cognitively disposed to discover **pattern** in processes, and to impose an order upon the flux of temporal phenomena. It is important to recognize that these patterns are in some sense there to be found, but also that their status *as* patterns is irreducibly relative to a view, to a specific cognitive stance informed by a set of assumptions about salience and relevance. These cognitive assumptions do not bear only upon the form taken by specific narrative representations, but also upon the form of narrative logic itself.

Narrative theory has always been a kind of **formalism**, but the drift of recent work in cognitive narratology is increasingly to locate the foundations of narrative's basic form in our cognitive architecture. One implication of this move is that the most fundamental features of narrative are evolved cognitive abilities, and no doubt adaptive to specific evolutionary pressures. The actual conditions in which narrative cognition emerged are open to speculation; what is certain is that they have little in common with the range of demands upon our narrative sense-making abilities today. In which case, the question is whether cultural forms of narrative, and the enculturation in narrative that is part of individual development, tend to perpetuate or mitigate the constraining features of narrative cognition. Is narrative sensemaking bound by the terms of its fundamental logic, or can it transcend them? (I think both.)

One of the most basic attributes of narrative cognition is that it is **perspectival**, in several senses. Because cognition is situated, narrative necessarily imposes order upon phenomena from a specific spatial and temporal point, which is that of the telling or articulation (the semiotic act) rather than that of the told. This perspective is intrinsically constituted in narration, and just as intrinsically adopted in the reception of narrative. Just as a narrative may concern circumstances abstracted from immediate experience, so its perspective of narration may be abstracted from the immediate site of cognition, and may in fact be abstracted from any embodied site of

[12]See Walsh (2011) and Almén (2008).

cognition whatsoever. What is striking, however, is that narration always remains spatiotemporally perspectival, even where it assumes the hypothetical privileges of omniscience, as in some forms of novelistic narration.

Sophisticated forms of narrative can also foreground and manipulate its perspectival qualities by representing the narrative act itself (character narration) or by partially aligning the narration with the perspective of a character (focalization).[13] Represented narrative acts draw attention to the potential for the perspective of narration to be itself extended in space and time, and hence the potential for significant change in that perspective, which may therefore have a narrative development of its own. Such elaborate explorations of the dual temporality of narrative, often compounded with a pointedly non-chronological relation between the time of the telling and that of the told, are a staple of modernist literary narratives by, for example, Virginia Woolf, William Faulkner, Joseph Conrad and Ford Maddox Ford.

The perspectival interest of such narratives is rarely just spatiotemporal. In most cases it is not the physical constraints upon the narrative subject position that matter, so much as the **evaluative** constraints associated with that position. In literary narrative theory these constraints tend to be explored in nuanced cultural terms, regarding the ways a narrative manifests the limiting assumptions of broad ideological or ethical attitudes, or the symptoms of a narrating character's psychological or intellectual profile, or the motivational context of such a character's interpretation of events. Where there is such a narrating character, the relevant narratological concept is unreliable narration, in which the evaluative limitations or biases of the narrator are foregrounded and themselves become central to the implicit authorial point of the narrative.[14]

The evaluative constraints upon narrative perspective run deeper than this, however. Every narrative is situated in a pragmatic context as well as a spatiotemporal context, and pragmatic considerations define its perspective because they determine criteria of **relevance**. Relevance is usually understood as a criterion of communicative pragmatics, so that the narrative form is influenced by circumstances of the context of telling.[15] This context will involve broad considerations, and often very specific ones too, that dictate the parameters of "tellability," or what is worth saying, for a given narrative act.[16]

In this sense, relevance may be understood as both a communicative consideration for the teller, and an assumption driving the interpretative effort of the receiver of a narrative. It is the answer to the standing question, what is the **point**? But a communicative context is only one aspect of the pragmatics of narrative, and not

[13]The concept of focalization was introduced in Genette (1980, Chap. 4).

[14]Unreliable narration, and the (partially) related concept of the implied author, were developed by Booth (1983).

[15]For relevance theory, see Sperber and Wilson (1995).

[16]On tellability, see Pratt (1977). A related concept is narrativity, which seems more specific, but also invites confusion between the qualities of the communicative act and those of its object. See Prince (1982).

even a necessary one. In the privacy of narrative cognition, the same sense of point orients the perspective of narrative sense making in relation to the subject's context of action, and indeed to the subject's current framework of understanding. The criteria of relevance that apply in narrative cognition can be wholly pre-reflective, but they strongly determine the narrative's identification of salient features in the object of its scrutiny.

Substantial implications follow in connection with a basic attribute of narrative, its **intentionality** regarding temporal phenomena, which is to say its "aboutness"; narrative articulates, in semiotic form, processes that are assumed to be actually or hypothetically independent of that articulation. The consequences of this intentional relation run in two directions simultaneously: from the cognizing subject towards the object, and (reflexively) back towards the subject. Features of narrative sensemaking activity are projected onto target processes, which are themselves then taken as the empirical ground for the logic of narrative itself. So, the sequential singularity of the narrative line is a feature of narrative's cognitive form, but one it attributes to its intentional object. Similarly, as already noted, the mere connectedness of narrative representations themselves inevitably implies **causal** connections in the represented processes. Forster made an explicit causal connection in "the king died and then the queen died of grief," but some implicit causal connection was already latent in "the king died and then the queen died," just to the extent that we take it as a narrative rather than some kind of list. The causal explanation is open to interpretation: it may be natural (a contagion?), social (a plot?), or supernatural (the Fates?); it may also be reflexively disavowed (paranoia?). All these possibilities share the assumption that some intimation of causality lurks in narrative coherence itself. While we may reflectively critique these attributions of causality, we can hardly avoid making them in the first place; and critique is not always vigilant.

Other consequences of the perspectival horizons of narrative cognition work in the same way. The pragmatic finitude of cognition demands that narrative seeks temporal wholes, an imperative that gives it a drive towards **closure** that is apparent at every scale of narrative unit from the minimal "narreme" to apocalyptic narratives, the function of which is to impose closure upon the history of time itself.[17] It is not just that closure is a representational imperative projected onto the object of representation; it is that this imperative is driven by criteria of relevance, or point, that are values of the representational perspective itself. Among the more elaborate forms of narrative there are many that make this quality of closure especially obvious. The sense of point at the end of a literary narrative, for example, really never reduces to finding out what happened; and some such narratives deliberately divorce the two. Raymond Carver's short stories, stereotypically, end before the end; Thomas Pynchon's *The Crying of Lot 49* ends, pointedly, just before the crying of lot 49. Yet that doesn't make these cases of incomplete, unresolved narrative; narrative closure is not ultimately about the resolution of an event, but the satisfaction of a semiotic demand for significance, for achieved relevance.

[17]On fictions of apocalypse as paradigms for narrative, see Kermode (1967).

The semiotic basis of closure has important consequences for narrative understanding, precisely because its logic tends to get projected onto the represented events. As a semiotic discourse, narrative is oriented towards the end; its form, at every level, is given by the anticipation of closure, the ultimately achieved meaning that makes sense of the whole. But, inevitably, these qualities of the discursive form of narrative get attributed to its object of representation, giving narrative a strong disposition towards **teleology**. In fact the notion of teleology, or "final cause," as a principle of innate orientation towards an ultimate form, is the manifestation of a fundamentally narrative way of thinking.

Teleological thinking is an effect of narrative form, and distinct from any presumption of **agency** inherent in narrative. But narrative does strongly attribute agency, in the sense of a capacity for goal-directed action, for reasons that are probably intrinsic to its adaptive value as a cognitive tool in a social environment. Narrative theory has become very interested in narrative's role in theory of mind, or folk psychology, on the premise that the ability to attribute motive and intention to other people, and so anticipate their behaviour, is one of its basic affordances.[18] The agency attributed by narrative is a more inclusive concept than this, but any narrative representation of an agent strongly connotes such folk psychological attributions of motive and intention. Most substantial narratives are preoccupied with understanding the agency of others, whether real people or fictional characters, and much of the work in this field assumes that such understanding is a projection of our understanding of ourselves. However, it is at least as plausible to hypothesize that our understanding of ourselves first arises from an internalization of our representations of others. The reflexive nature of such a move, to the extent that it also applies to other selves, means that this aspect of narrative sense-making is to some extent self-fulfilling, and its recursive nature ties it closely to the history of consciousness.

If narrative agency is understood as, at bottom, a direct consequence of narrative logic, then it helps to clarify one of the most obvious effects of narrative, which is its **anthropomorphism**. Definitions of narrative that restrict its scope to the experientiality of human agents can deal with the obvious fact that narratives often concern non-human agency by saying that they always treat their subject matter *as if* it had qualities of human agency. But while there are plenty of examples to support this idea, from beast fables to wildlife documentaries, they vary considerably in their degree of anthropomorphism, which suggests that it is an *effect* of narrative representation rather than a defining quality. On this view, human experientiality may itself be understood as contingent upon narrative sense-making. Narrative projects agency because it is the cognitive strategy of a social animal, and it does that much indiscriminately, but the more specific features associated with an experiencing human subject seem best treated as secondary effects of the development of narrative.

Another way of expressing this point is to say that narrative is not *about* the experiencing human agent, but *for* the experiencing human agent. That is, it is not in

[18]Key sources on narrative and other minds are Keen (2007), Palmer (2004), and Zunshine (2006).

essence an anthropomorphic form of representation, but an **anthropocentric** form of cognition. Fundamentally, this anthropocentrism is simply a pragmatist condition for knowledge as such, in that understanding something necessarily involves bringing it into an intelligible relation with a human point of view. If we consider narrative not as a subset of knowledge but as a form of knowledge, though, the significance of such a constraint is more pointed. On the one hand, narrative imposes a horizon upon understanding within its domain in just the way the general anthropocentrism of knowledge implies; on the other hand it is the legacy of a cognitive pre-history with imperatives quite different from the demands we place upon narrative today.

A further implication of this pragmatist view of narrative is worth bringing out. Its cognitive function, as I have formulated it, has an irreducibly heuristic character; it is good enough for current purposes. Narrative therefore always rests, not circumstantially but constitutionally, upon unexamined assumptions, so that the sense it produces remains, at its core, **implicit**. The limits of articulate sense in every narrative are in one respect just a pragmatic horizon to its endless capacity for elaboration, imposed by the finite resources of cognition or interpretation. But these limits are also the pragmatic limits of sense as such, in that narrative is not built upon some fundamental unit of meaning, but upon the embodied nature of cognition.[19] The roots of narrative logic necessarily spring from an empiricism beyond semiotics. The force of narrative is therefore always more bound up with what its form implies than with what it actually expresses, and the potency of the implicit has been evident throughout this discussion of narrative's effects.

At the same time, the territory of the implicit provides for narrative's most powerful feature, which is its **reflexiveness**. The vast capacity for elaboration that makes narrative such a ubiquitous presence in culture and daily life is accountable, in a rudimentary sense, to the way in which the implicit borderlands of every narrative invite further explanation, and our appetite for pursuing it is apparently insatiable. The implicit in narrative is itself a prompt to narrative cognition, making it the object of and occasion for more narrative. The impulse is manifest everywhere from the child's incessant "why?" in response to every narrative explanation, to the saturation of culture with sequels, prequels, series, spin-offs, adaptations, fan fictions and versions of all kinds. But more fundamentally, narrative's propensity for reflexiveness bears upon its own logic, not just the particulars of a given instance. Narrative sense-making's attention to itself does not only lead to its proliferation, but also its refinement. The cultural history of narrative traditions can be read as an extended series of such reflexive moves, in which the taken for granted becomes the focus of attention, or a particular meaning becomes a way of meaning, an instance becomes a trope. These reflexive moves occur on all scales, from local representational devices (the development of free indirect discourse, say) to global communicative purposes (the rhetorical possibility of fictionality).[20] I said earlier that I think narrative is both

[19]For approaches to narrative grounded in embodiment, see Turner (1996) and Fludernik (1996). For more specifically enactivist approaches, see Hutto and Myin (2012) and Caracciolo (2014).

[20]On fictionality as a rhetoric, see Walsh (2007); on the sense of narrative reflexiveness described here, see Walsh (2016).