



# Narrative in the Face of Complexity as a “Limit-of-Sense” Phenomenon

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## NARRATIVE IN THE FACE OF COMPLEXITY AS A “LIMIT-OF-SENSE” PHENOMENON

### Introduction

My concern in this paper is to examine certain constraints upon the possibility of understanding complexity, as a first step towards identifying the most effective ways of negotiating with those constraints. I am using “understanding” here in a sense delimited by the overlap (in terms of the issues raised) between understanding and communication. That is, I want to consider what it is to bring complexity into a meaningful relation with our cognitive capacities, both for ourselves and for each other. In doing so I shall be taking a pragmatic view of cognition, in that I do not want to make a categorical distinction between understanding and other kinds of familiarity that provide for use of an object, or for action within an environment. This view, which assumes a continuity between cognition and even very primitive kinds of response to stimuli, is a broadly enactivist approach to cognition, rather than a representational approach; I will not be offering direct arguments for my preference in this paper, but its relevance to the problem in hand will soon become apparent.

To bring complexity into a meaningful relation with our cognitive capacities means, at least with respect to complex processes, bringing it into relation with narrative. Narrative, at its most elementary, is simply our primary cognitive model of temporality, of change (or indeed persistence) over time. But it is a premise of this paper that complexity resists narrative, so the question here is, how can we characterize that resistance, from a cognitive point of view? To characterize a complex system *as* a system is already to have achieved some cognitive grasp of it: any system, understood as such, is a more or less well-defined whole, comprising a certain set of elements and the relations between those elements (both the existence and the nature of such relations). It doesn’t matter, for my purposes here, whether we are talking about a model of some real-world phenomena, or a system conceived in the abstract; in either case, to understand it as a system is already to achieve a certain cognitive resolution. A system is something. All the interesting questions, though, have to do with what this something does.

In principle, a system may do absolutely nothing – that, we might say, is the extreme of order; or it might (again, in principle) behave in ways exhibiting no pattern, no structure whatsoever – that is the extreme of chaos. In either case, there is nothing more to be said of the system; it is what it is. There is a continuum of cases in between, however, where the system’s behaviour seems more or less intelligible, that is, accessible to narrative cognition. Many of these are orderly enough to be encapsulated in a narrative adequate to some purpose; such narratives may be very simple or extremely elaborate, but they are always intelligible in principle just to the extent that a narrative logic is applicable. In all such cases we are able to progress from talk of what the system *is* to what it *does*; but for certain systems there is an important gap between our narrative talk of what a system does and how the system actually does it. In these cases our narrative understanding is not of the systemic behaviour of the system but its emergent behaviour, and at the cost of a disregard for how this emergent behaviour is actually being produced.

Such systems, for which narrative understanding latches onto emergent behaviour in itself rather than in its relation to underlying systemic behaviours, are those we would want to call complex systems. This may seem a rather oblique approach to the question of complexity, but from a cognitive point of view (and therefore from a communicative point of view) it is fundamental. In the face of a complex system, we can make narrative sense of emergent behaviour only with a simultaneous awareness that our narrative logic is not really explanatory - or, worse, with a lack of such awareness; mistakes of this sort can be pointed out to us, of course, though they are always liable to recur in more subtle forms. Our cognitive need for narrative sense, then, needs to be kept in check by a meta-sense of its limitations. Must this negation of understanding result in a kind of collapse into incomprehension, or is there an inhabitable cognitive borderland here? I’m going to argue that there is certainly a borderland—and, much more tentatively, to consider the merits of inhabiting it.

Complexity has been characterized as an “edge of chaos” phenomenon<sup>1</sup>; however I want to consider the cognitive understanding of complexity as an “edge of sense” phenomenon. In our dealings with complex processes we can treat the bounds of this edge as, at one limit, the perception of pattern, and at the other, the cognitive resolution of narrative. The latter, for our purposes here, is sense; the question is, how might we deal with the edge of sense?

### Defining emergence

Having invoked the concept of emergence, I need to consider a little more carefully what it means. My purpose in doing so is not primarily to define emergence, though, but rather to consider some of the implications of efforts to do so. A helpful survey of some of these attempts at definition can be found in Aleš Kubík’s “Toward a Formalization of Emergence,” which proposes a formal description of basic emergence in a multi-agent system. It does so on the basis of a distinction of levels common to many approaches to emergence, and consistent with the terms of my own reference to emergent behaviour here: emergence is a quality of the “macro behaviour” of a system, as opposed to the behaviour of its interacting system components, while the underlying behaviour of these components (which may include both agents and the system environment) is nonetheless what *produces* the emergent macro behaviour.<sup>2</sup>

One significant implication of such an approach is that emergence is “not primarily a matter of inexplicability.”<sup>3</sup> The definition is expansive enough to include very straightforward interactions within a system (Kubík instances direct co-operation between agents); just because a system exhibits emergent behaviour narratable at a macro level, it need not follow that interactions comprising the underlying component-level behaviour are intrinsically *unnarratable*. The crucial point is that these are discrete narratives, and the narrative of emergent behaviour is not explanatory at the level of the systemic interactions themselves. This rejection of inexplicability as a defining feature of emergence is also a rejection of previous attempts to define it in terms of surprise.<sup>4</sup> For Kubík, appealing to the observer’s surprise is an unhelpful move:

We believe the category of surprise obscures emergent phenomena. As a consequence there is a tendency to consider emergence as a property of the system that “cannot” be reduced to the lower level of description (i.e., properties of the agents and their interactions). Another consequence is that one can only describe as emergent those phenomena for which we lack a satisfactory notion of how they work.<sup>5</sup>

More broadly, it is clear that for any reproducible emergent phenomenon, even the uninformed observer’s surprise will not survive many repetitions. This seems so self-evident, though, that the most interesting issue is not whether surprise should be considered a defining feature of emergence, but why anyone might have ever thought that it could be. The very idea is extraordinary, and perhaps best taken just as evidence for the perceived importance of something about our experience of emergent phenomena that it only approximates or gestures towards. Surprise, I suggest, is the wrong concept; but its place in the literature on emergence and its intuitive relevance to the cognitive challenge of complex systems make it a useful point of departure for my own discussion.

### Surprise and suspense

Perhaps the best way to flesh out the ideas at stake in the notion of surprise, from a narrative perspective, is to invoke Alfred Hitchcock’s well-known distinction between surprise and suspense. In interview with François Truffaut, he explains it like this:

We are now having a very innocent little chat. Let us suppose that there is a bomb underneath this table between us. Nothing happens, and then all of a sudden, “Boom!” There is an explosion. The public is surprised, but prior to this surprise, it has seen an absolutely ordinary scene of no special consequence. Now, let us take a suspense situation. The bomb is underneath the table and the public knows it, probably because they have seen the anarchist place it there. The public is aware that the bomb is going to explode at one o’clock and there is a clock in the decor. The public can see that it is a quarter to one.... In the first scene we have given the public fifteen seconds of surprise at the moment of the explosion. In the second we have provided them with fifteen minutes of suspense. The conclusion is that whenever possible the public must be informed. Except when the surprise is a twist, that is, when the unexpected ending is, in itself, the highlight of the story.<sup>6</sup>

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<sup>1</sup> See Crutchfield and Young 1990.

<sup>2</sup> Kubík 2003: 44.

<sup>3</sup> *Ibid.* 46.

<sup>4</sup> For example, Ronald, Sipper and Capcarrère 1999.

<sup>5</sup> Kubík 2003: 43.

<sup>6</sup> Quoted in Truffaut 1984: 73.

For my purposes here, there are three features of Hitchcock's account worth drawing out. Firstly, the distinction between surprise and suspense turns upon a matter of knowledge; the audience's lack of key information is the precondition for their surprise at a sudden reveal; whereas suspense *depends upon* the audience's knowledge, as distinct from that of the characters, as the basis for its tension between perspectives. The public must be informed. Secondly, Hitchcock's concern is with narrative affect; the power of the story to enlist the audience's emotional engagement. His preference for suspense is justified by the quantifiable increase in affective power it offers to the storyteller. Thirdly, this preference is ultimately a choice of genre. As his final comment acknowledges, there is a kind of narrative for which surprise is not only appropriate, but the main point, and that is the mystery story; whereas his choice of suspense aligns him with the thriller. In these generic terms, surprise coincides with the resolution of the mystery plot – the point when it finally makes sense, and the mystery is revealed to have been merely a puzzle with an intelligible solution. Surprise, in the mystery plot, is the affective response to unanticipated intellectual closure. Suspense, on the other hand, *precedes* narrative resolution; it is affectively constituted by an unresolved tension between two perspectives, audience knowledge and character knowledge, and closure is the convergence of these two perspectives and so the resolution of the emotional tension.

It is not that the experience of trying to make sense of complexity is like a thriller, exactly; I am not arguing that the relation between narrative and complexity can be explained simply by replacing surprise with suspense. What Hitchcock's distinction helps us see is that the emphasis, in the notion of surprise, upon the affective rather than cognitive impact of emergence, can be articulated in other ways which offer a more rounded idea of the experience whilst avoiding some of the oddity that surprise entails. So the notion of suspense retains the emphasis upon the affective dimension of the observer's experience of emergence, but also draws attention to other key features of this experience: a certain double relation to knowledge, and a state of unresolved engagement, *in medias res*, within a narrative in process rather than in response to the sudden coup of narrative closure.

### **Knowledge and understanding**

By speaking in terms of "making sense," I am privileging the idea of the relational quality of the cognitive encounter with phenomena, and emergent phenomena in particular. That is, we make sense of something to that extent that we are able to articulate its qualities in terms of our own representational or semiotic resources as cognitive subjects. But even the notion of "making sense" is ambiguous. On one reading, certainly, making sense is a cognitive activity like understanding, and so less about a state of affairs in itself than about your cognitive relation to it. You may understand more or less, and understanding is pragmatic in that it may be more or less sufficient for given purposes. On the other reading, however, something makes sense if it constitutes an actual or possible self-consistent state of affairs; if it is a legitimate object of propositional knowledge. Propositional knowledge does not admit of degree—you either know it or you don't. But what if there are legitimate objects of propositional knowledge in this sense which nonetheless elude our cognitive capacity to articulate them? What if there are phenomena that both do and do not make sense? This is how I want to take up the double perspective that Hitchcock's account of suspense introduces into the discussion. For him, that doubleness operates between the knowledge of audience and the knowledge of the characters, and it is the superior perspective of the audience that provides for the affective quality of suspense. The situation when we attempt to understand emergence is somewhat reversed; we are aware of an order, an underlying logic, to the emergent behaviour, yet our cognitive representations of it are unable to do justice to that order. Here the double perspective opens up a third space between sense and nonsense; a space in which things appear to make sense even while we are unable to make sense of them. The affective quality of this experience is not suspense; I suggest that it is best characterized as wonder.

### **The evocation of wonder**

Wonder, on this account, is the affective quality attached to that region just beyond the limits of understanding; it is the intuition of an order of things that exceeds my grasp. It is not alien to scientific discourse; in fact it has always been a powerful affective driver for scientific curiosity, and it is very prominent in the rhetoric of contemporary science evangelists in popular media. The latter context, though, captures the respect in which an attitude of wonder points to something other than the terra incognita of the not yet known, as it does in the frontier model of the advancement of science. Wonder is also a religious feeling, precisely because it expresses a sense of the radically unknowable nature of a cosmos which *is* nonetheless known; this other, inaccessible perspective is that of an omniscient deity.

The distinctive feature of the religious sentiment of wonder is that it hypothesizes a perspective, that of an anthropomorphic yet inconceivably alien god, from which the order of things makes sense entirely; a perspective

that transcends space and time and provides for absolute and final knowledge. So that while the premises of scientific advancement frame the wonderful as the not yet known, the premises of religious sentiment frame the wonderful as the known, but not by us. On the religious view, the feeling of wonder conforms literally to the structural principle of a double perspective I have derived from Hitchcock's suspense; the order of things, whilst eluding *us*, submits to omniscient cognition. But of course it follows that omniscience, the attribute of the deity, is itself necessarily unknowable.

Given more time, my next move would be to pursue the question of omniscience in relation to the fortunes of its literary analogue, omniscient narration. Arguably, omniscient narration both lays claim, if only in imagination, to the possibility of a transcendent perspective, and at the same time foregrounds the inherent contradiction between "omniscience" and "perspective," the necessary unavailability of such a position. Contemporary omniscient narration seems much more aware of the dilemma than nineteenth-century manifestations, but the continuing attraction of the mode is a significant dissent from the triumph of perspectivalism, of first-person narration and internal focalization, that we associate with modernism. I'm inclined to claim that one reason for this dissent is that contemporary literary fiction is wrestling with the challenge of narrating complexity. Here, though, I can only pose the question, by invoking a negative example from Don DeLillo. DeLillo is an author who has himself taken up the challenge of omniscient narration, notably in *Underworld*, but who presents the dilemma from the other side in *White Noise*, with its protagonist narrator Jack Gladney.<sup>7</sup>

Gladney, as narrator and as protagonist, is very much *in medias res*, and the affective state attached to his position is fear of death. In one respect, this fear is well motivated; he has been exposed to an "airborne toxic event," and his medical data now include alarming "bracketed numbers with pulsing stars."<sup>8</sup> But the fear is also a pervasive emotional response to mortality, shared with his wife Babette, who has resorted to the unlicensed drug Dylar in order to suppress it. Dylar's side effects include losing the ability to distinguish between words and what they represent.<sup>9</sup> This loss of duality, or of the exteriority of representations to their objects, saturates the novel, which is preoccupied with the postmodern phenomenon of images that constitute their own immanent artificial reality. The consequent lack of any detached perspective comes together with both the issue of death and that of narrative in Gladney's reflections upon plot. For him, "to plot is to die"; he sees himself as a death-bound protagonist. His academic friend Murray counters that "to plot is to live," offering Gladney the possibility (in theory) that he might transcend his fate by becoming the narrator of his own life.<sup>10</sup> This train of thought leads him to plot the murder Willie Mink, the pedlar of Dylar, which farcically deviates from his own efforts to script it.<sup>11</sup> Gladney cannot gain a perspective beyond his own, and the novel ends inconclusively, his fate still unknown.

But in spite of this deflationary rhetoric there is another side to the novel; throughout, the phenomena of postmodern society (from TV to the artificial sunsets caused by the airborne toxic event) have attracted a language of aesthetic awe, a register of religious affect. The religious subtext comes to a head in Gladney's encounter with some atheist nuns at the end of the novel, for whom it is important only that people believe that they believe.<sup>12</sup> Their faux-naïf painting of a cloudy heaven recalls the airborne toxic event itself, as well as its corporeal manifestation in the "nebulous mass" that may or may not be growing in Gladney's body<sup>13</sup>; but it also connects with the toddler Wilder, Babette's son who has yet to master language, has no concept of death, and is described as "a cloud of unknowing" by Murray.<sup>14</sup> The last substantial action of the novel concerns Wilder's apparently miraculous literal imperviousness to death, but I want to end with the paradoxical tradition of medieval mysticism to which *The Cloud of Unknowing* belongs, and in particular its claim that to know God we have to relinquish altogether the idea of knowledge.<sup>15</sup> The cloud of unknowing is a feeling, a kind of understanding that is not knowledge, nor even the fantasy of a higher knowledge, but actually the negation of knowledge. My disconcerting hypothesis is that this mystical tradition may be the closest thing we currently have to a characterization of the wonder I have associated with emergence in complex systems.

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<sup>7</sup> DeLillo 1997; 1984.

<sup>8</sup> DeLillo 1984: 117, 140.

<sup>9</sup> *Ibid.* 193.

<sup>10</sup> *Ibid.* 291.

<sup>11</sup> *Ibid.* 304-13.

<sup>12</sup> *Ibid.* 319.

<sup>13</sup> *Ibid.* 280.

<sup>14</sup> *Ibid.* 290.

<sup>15</sup> Spearing 2001.

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