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Proceedings

# Narrative Realities and Optimal Entropy †

Derek Jones

The Open University, Milton Keynes MK7 6AA, UK; derek.jones@open.ac.uk

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**Abstract:** This talk will focus on cognitive processes between conscious and subconscious awareness in order to present a slightly different definition of narrative. Rather than simply accepting that narrative is a conscious selection of stories subject to bias, I will argue that biases are the primary structure of narrative and that their success is explained in painfully simple terms.

**Keywords:** narrative; rhetoric; embodied cognition

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*'I suppose a quick anecdote is out of the question?' he croaked.  
Conina sighed. 'There's more to life than narrative, you know.'  
'Sorry, I lost control a little, there.' (Pratchett, 1989)*

In his fantasy book series set in the Discworld, writer Terry Pratchett referred to the imperative of narrative as a force in nature. At its simplest, his characters respond to events in particular ways according to (stereo) type; at the meta-scale it is presented as an ontological structure that guides societies and larger historical events.

It sounds better when you tell the story of it: when a wagon or coach crashes, regardless of the context, there must come from it a burning, rolling wheel. And, of course, million in one chances happen all the time.

Treated superficially such narrative archetypes or rhetorical anecdotes are simply that: entities that have no more importance than their immediate effect. But I will argue that there is very little that is more important than narrative when we construct realities cognitively.

In fact, the claim is that the world of stories is more important than reality. There really is a narrative imperative as Pratchett suggested.

## 1. We Do Not Live in a Cartesian Universe

Firstly, we have to be wary of skepsicentrism, the supremacy of 'conscious' thought over any other form of human knowing. In particular other forms of coming to know and even knowledge exist. Descartes famously articulated the essentialist view in terms of becoming through thinking but it's simply not accurate when we consider recent findings in cognitive neuroscience [1]. We are only aware of about 10% of the cognitive activity in our brains [2–4]. We use confirmation bias, preferred selection [5] and whole range of belief-based thinking [6]—most of which we are unaware of. When we become aware of it we use a further set of techniques to reconcile what we actually thought with what we think we thought [7,8].

To summarise: 'we' (what we think we are) are necessary but insufficient components in the construction of our own ideas and conceptions [9].

This talk will focus on these 'between' conscious mechanisms in order to present a slightly different definition of narrative. Rather than simply accepting that narrative is a conscious selection of stories subject to bias, I will argue that biases are the primary structure of narrative and that they are pseudo-fractal, acting at different scales in any narrative.

Motivated reasoning, for example, is one such mechanism and this has a very strong storytelling component to it. We can readily hold multiple truths [10] and contradictions in our minds. We have to maintain our self-perceptions [11,12] but we extend such ‘storytelling’ (or confabulation) to construct our realities too. This is not a superficial filter we apply to reality—it is our reality: red is not red [13]; We really do not know ourselves [14] and what we think of as our core personality traits change over time [15].

The trick to achieving all this ‘mediation of truth’ is to make sure that we can arrive at a reality we find acceptable:

*“people are more likely to arrive at conclusions they want to arrive at, but their ability to do so is constrained by their ability to construct reasonable justifications for these conclusions” [16].*

In order to construct a ‘reasonable justification’ people use narrative structures and storytelling as forms of knowledge—story epistemes. Central to making this argument is the ways in which information is used.

## 2. Information Is Not Enough/Too Much

The simple model of the transfer of information is not enough to explain the transfer of concepts. The model doesn’t claim to either. As we discuss some complex concept or difficult ethical dilemma a huge range of ‘meta-information’ is required, whether this is existing knowledge; cultural situatedness; responsive adaptation to the other person’s reactions; projection of position; etc.

The argument here does not propose that these metalinguistic events are epiphenomenal ‘wonder tissue’ [17]—it is perfectly possible for them to be tangible and realisable entities at some pragmatic level in sense of James and Landauer [18,19]. The issue here is not their nature, but their number. At present, it is not possible to state whether the amount of information to be accounted for is computable or simulatable at any lower ‘resolution’ than the total system itself. It is a P versus NP problem [20].

And that leads to the next problem—humans simply do not have the ‘bandwidth’ to process a fraction of this information. This is considered, in evolutionary terms, to be one of the primary drivers for mechanisms such as cognitive bias, motivated reasoning, justified belief and others. To put it bluntly, our brains use about 20% of our body’s energy at a resting state (40% when we are really thinking hard

So it is hardly surprising that we have developed strategies to optimise the use of this entropy-gulping grey matter. If you are making notes on this or even just scrolling up and down your interface in annoyance you are using your environment to offload some cognitive activity [21,22].

And interestingly, we are also more likely to ‘lie’ when we have lower cognitive resources available [6].

All of which suggests that there is some optimisation between information density and our efficient/effective use of it. That is, between too much or too little information ‘processing’ there exists a zone within which Homo Sapiens can operate (effectively) whilst still maintaining an acceptable energy usage (efficiently). Such optimal zones of operation can be seen throughout nature: Dawkins referred to this as the “survival of the stable” [23] and we see such optimisations occurring regularly in human interactions. In design the MAYA principle underlies successfully creative products in that they are optimised between being different enough but not so different they are difficult to ‘process’ [24,25]. It is argued that narrative operates, and indeed ‘is’, human conceptualisation in this zone of optimal effect and energy use.

Narrative, it could be said, is a naturally occurring means (mode?) by which entropy increases at an *acceptable rate* to human beings.

### 3. Characteristics Arising from an Optimised Conceptual Narrative

This zone of optimisation has to be understood, not as processing or computation of information, but as *human use* of information. As previously noted, our essentialist view of thinking fools us into believing in a linear or normative pattern to its structure—that we interact, then think, then at some point may recall this as an historical incident. But the actual process of cognition works in a very different way. Our memories are most definitely not essentialist and rely on re-cognition rather than linear recall [8,26]. As a further example, we still view knowledge as acquiring, collecting and building, not reconstruction—this is known as the acquisition metaphor [27]. Each and every time we have a thought or memory we are *re-creating* it—not recalling it or even processing it.

This emergence of conception through cognition is not quite the same as processing or computing. Rather, if it is, it suffers precisely the same problem as the problem of concept transfer—it is (currently) a P vs. nP problem. The utility of human use is entirely contingent on circumstance, availability of energy and a whole range of other relative factors. It is a non-normative, situated for of use whose purpose and value is inter-dependent on its own situation. It is this very fuzziness of human use that allows us to retain ‘superpositions’ of information—to hold contradictions as valid truths.

The only way to deal with such a contingent complexity is through conceptualisation—an ill-defined cognitive, socio-psycho process. The emergence of such conceptions is dependent on their own efficiency and effectiveness, meaning they must be:

### 4. Quick and Easy to Communicate and Conceptualise

This is necessary because of the need to optimise the complexity/energy gradients required to generate the concept. Doing this allows a lot more ‘space’ to do things with the narrative. For example, see Dawkins for (all internet) memes [23]. Or consider basic, existing, embodied cognitive schema, such as ‘light is good; dark is bad’;

*“In the middle of the journey of our life I found myself within a dark woods where the straight way was lost.”*

Such ‘simple’ concepts are exceptionally powerful because they take very little information to convey them and are easily conceptualised, not simply thought about. Once a conceptual metaphor is transferred (i.e., you ‘get it’) you cannot remove it. Sticky stories survive—others simply die.

### 5. Acceptable to Our Preferences, Worldview and Beliefs

For example, metal and wood at the same temperature do not feel the same temperature [28]. This type of experiential knowledge can conflict with other forms of knowledge and we can intellectualise and understand that what we feel is not necessarily the same as how we might describe it for the purposes of creating a scientific or engineering model. But what is more interesting is that even graduate physics students will make use of the experiential knowledge as a ‘lie’ to inform the intellectual knowledge. We only make use of knowledge that fits with our worldview. Narrative emerges from, aligns with, and can only exist due to, emotional states and belief. As Bohm suggested,

*“Reality is what we take to be true. What we take to be true is what we believe... What we believe determines what we take to be true.”*

The extents to which we are prepared to act based on obvious falsehoods or where little evidences is available to support our beliefs are often incredible. And at no point do we even consider that we might be lying to ourselves—we don’t need to because we are too good at pretending it’s not a lie:

*“...ethical evaluations are not a dichotomy between honest and dishonesty but rather a continuum stretching between the two ends.” [6]*

## 6. Summary

Much of this is already well established in a variety of disciplines and domains. Memes, sticky ideas, conceptual metaphors, rhetoric, etc. have all been around for a very long time and research into how these are used in politics, business, design, and many other.

And in many ways this sums up the ‘multiple readings of reality’ [29] we face, not as objects in the world, but as objects who create themselves continuously in their own realities. We are no more able to control our own constructions of reality than we are to control the bacterial populations in our gut. But we can elect to influence it—to be aware of it, reflect on it and, ultimately, to act on it.

*“That is all as it should be, for in a question like this truth is only to be had by laying together many varieties of error.” [30]*

Our human ability to ‘lay together varieties of error’ allows us to do incredible things—good and bad; stupid and wise. Truth or ‘right’ or good has no preferential transport route in any storytelling. As Mark Twain advised, “Never let the truth get in the way of a good story.”

It’s the story that matters. It’s the optimal conceptual structure to help us navigate a perceptually rich environment; to retain a culturally rich social knowledge; and to continually reconstruct ideas of what the world might be.

The world of ideas and stories is the only world there is.

Let’s leave the last word to Pratchett:

*“The stories don’t want you to think, they just wanted you to believe what you were told...” The Wee Free Men*

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