NARRATION, LYING, AND THE ORIENTING RESPONSE

Abstract. What is the orienting response, and what does it have to do with narrative? How is narrative related to lying? And what is the motive force of narrative? I will show that the mental activity of writers creating fictions, readers reading them, liars fashioning lies, and listeners when they detect a lie, all share distinct and significant cognitive functions.

I

Imagine you are strolling along a shaded, tree-lined sidewalk in a quaint little town. You feel content and are expecting a relaxing day. Suddenly, your contentment is shattered by what sounds like a gunshot close at hand. Instantly, involuntarily, your head ducks down, your arms lift to each side of your head, and your body turns toward the sound. Your attention is laser focused on determining what that sound means, and nothing else. You perceive a cloud of black smoke fading away behind a truck. You notice that everyone else on the street is similarly oriented toward the truck. You realize the sound was an engine backfire. Your muscles begin to relax and you continue your walk. After a few moments you realize that your heart is beating a bit faster and your skin feels warm, but not very long after that you are back to normal.

Now imagine that you come upon the perfect bookshop. You enter and walk around aimlessly for a while, soaking in the atmosphere. You remember that a friend of yours mentioned an artist she was interested in. You wander over to the art section and find a book on that artist. You open it and look at the first illustration. You are not quite sure what you are seeing. Your attention becomes fixed. You turn to the next illustration. You now feel even less sure. The novelty of the images has
captivated your attention, but something else has also. You experience an emotional reaction. Specifically, you feel uncomfortable and even a little threatened by what is before you. Perhaps the images are too violent, too disturbing, too graphically sexual. Whatever that line is between what you expected and what you are experiencing, between what you are comfortable with and what you are not, these images have definitely crossed that line. Your attention slowly broadens from the book in your hands to the environment around you. You become uncomfortably aware of the other shoppers in the store. You feel guilt and perhaps even a twinge of panic at the thought of being caught looking at these disturbing, compromising pictures. You sense your heart beating faster and your skin becoming warm. You place the book back onto the shelf and move on.

You wander around the bookshop some more until you feel normal again. You reflect that you haven’t discovered any new novelists in a while. You locate the fiction section and set yourself a game: You will read the names of the authors on the spines of the books, choose books one at a time by authors you do not know, and, still standing in the aisle, read the first few pages of each book till you find one that grabs you. You try this experiment with four or five books, but nothing happens. Then you encounter a book that does catch your attention. It’s not clear to you why it does so, but you don’t think about that at the time. You are an experienced reader of literature, so what it is precisely about the book that is working on you in a positive way may be very subtle and hard to define. But you distinctly sense something new, unexpected, and pleasurable. Your attention is drawn in more and more until you find you have almost involuntarily covered five, or ten, or fifteen pages. You stop reading and decide that this book is a keeper.

You check your watch and see that you still have a lot of time to kill. You decide to repeat the experiment. The results are pretty much the same: a number of books that don’t excite you, and then another that definitely does. You have now found two books that have given you the same pleasurable response. You decide to buy them both.

II

Now let’s take a closer look at the three scenarios described above. The first case (the truck backfiring) is not an example of the orienting response but rather the startle reflex, although both processes begin in the same neural circuits. The difference is that the stimulus in this
case occurs too suddenly and at too great an amplitude to initiate the orienting response. With the startle reflex, the mind reacts in a defensive manner to the stimulus even before it knows what the stimulus means. The reflex is innate: if you hold a baby directly after birth and gently blow air onto its face, it will exhibit the same startle reaction.

The second scenario (the art book) does offer an example of the orienting response. Although you may or may not be consciously aware of it, you enter that particular situation (opening the book) with a specific set of expectations based on what has been stored in both your short- and long-term memory. E. N. Sokolov, who was among the first to define the orienting response, refers to these stored memories as the “currently active neuronal model” corresponding to each situation in which you find yourself. As soon as you open this particular book, however, a group of closely connected neural circuits in your brain, including the hippocampus (memory), the anterior cingulate cortex (emotion and decision making), and the prefrontal cortex (focusing attention and predicting consequences), are activated by the mismatch between the novel stimulus you are experiencing and the neuronal model in your memory. This mismatch triggers the orienting response.

First, although you will not have noticed it, your heart rate actually decreases to allow for heightened sensory intake and increased perceptual processing. This happens because your mind’s first task is to determine what precisely this stimulus is—how truly novel it may be and what significance it may have for you.

Next, the stimulus has to be sorted between what is called the defense system and the appetitive system. In other words, does this novel stimulus represent a threat to be avoided or a positive enticement to be pursued?

If the stimulus is perceived to be a threat (in this case, the highly disturbing images in the art book) then your mind and body prepare for action: your heartbeat now quickens and you feel your skin become warm.

If, on the other hand, the stimulus is perceived to be pleasurable (as in the case of the two novels you choose to buy), then your attention remains focused and you continue to explore the source of this positive stimulus.

III

Now imagine that you are sitting comfortably at home with your two newly purchased novels. You open the first and begin to read it from the
beginning. Once again, the book captures your attention at the start, but perhaps not as completely as before. You continue for about forty pages or so until you feel your engagement with the book slowly flagging. Whatever it was that seemed fresh and exciting to you at first—perhaps the unusual situation, or curious point of view, or interesting tone, or accomplished management of syntax, or surprising but particularly apt choice of words—now feels repetitive and predictable, a mere literary trick and not a fully integrated artistic style. You stop reading and put the book down, rather disappointed.

You reflect on this experience for a few moments, then you start in on your second novel. Rereading the first fifteen pages, you excitedly notice things that you had not picked up on before. As you continue reading, you become more and more intrigued by both the subject matter of the story and the style of the writing. You sense that you are probably missing many subtleties and details, but your interest in the narrative carries you effortlessly along. You figure you can always go back and reread the earlier parts later. You become fully engrossed. You cannot put the book down and continue reading late into the night.

Let’s examine your experience with these two books. Obviously, one cannot remain oriented toward the same source of stimuli indefinitely, for a reason. Your active neuronal model is constantly updated by subsequent experience. This process, in regard to the orienting response, is referred to as habituation. Stimuli that produce a mismatch at one time may become part of your expected experience later. Something that feels novel, threatening, or pleasurable at first encounter may become flat and boring after only five or six repetitions (“NSA,” p. 3). On the other end of the spectrum, the sense of novelty you experience may be so extreme and even chaotic as to feel uncomfortable and off-putting right from the start (think James Joyce’s Finnegans Wake, for many readers). A fine balance is to be maintained, especially with an experience as subtle and complex as reading a work of literature, between unexciting repetition and excessive, confusing novelty.

Another dimension to consider is the matter of significance, which in this context means the personal and emotional connection that a reader may have with the subject matter of a particular narrative. Obviously this will vary with each reader. A narrative about the loss of a loved one, for instance, might have more significance to someone who has just gone through such an experience than to someone who has not. In such a case, the general frame of the narrative is not novel to the reader, although the specific details most likely will be. In general, a narrative
felt to have greater significance to a particular reader is more likely to induce the orienting response more intensely and for a more prolonged period than it will for a reader who does not feel the same high level of significance ("NSA," p. 2). Even after the novel features of the storytelling mode have become fully habituated, the mere memory of an event of great significance may once again induce the orienting response.

So far, I have considered the orienting response in relation to one broad and complex behavior: reading a work of literature. Now I will focus on a single component of that activity: narrative. The first question is, how and when does the capacity to create and attend to narrative arise?

In the mid 1970s the linguist M. A. K. Halliday set himself the task of observing the development of language in a single child from the age of six months to twenty-one months, through the stages of nonverbal communication to the onset of what Halliday calls the adult mode of language use. I offer only the briefest outline here, but suffice it to say that for the first nine months the child (whose name is Nigel) communicates primarily by gestures (grabbing what he wants, tapping away what he does not), as well as sounds (often a rising tone for something he wants). Toward the end of this period (which Halliday calls phase 1) the child has added simple, two- or three-word combinations that fulfill the following functions: personal ("I'm sleepy"), interaction (a short dialogue or exchange of meanings with another, usually a parent), regulatory (what Halliday describes as "the child's incipient mode of social control"), and instrumental ("I want that"). Of Nigel's development from phase 1 through phase 2 (up to sixteen months), Halliday observes: “The picture is broadened and refined at all points. New meanings are added and details are filled in. But it remains a model of the same kind. The main headings are the same, though the content of each has significantly expanded" (LH, p. 84).

What is absent from this picture is narrative. Halliday notes that a child in phases 1 and 2 may be fully able to articulate an experience ("Daddy funny face"), but when asked a moment later to recount the event to a person who has just entered the room, the child is unable to do so. What the child lacks is verbal memory, or what Halliday calls "text" contained in memory to refer back to and narrate. The child "has not yet learned that language is not just an expression of shared
experience, it is an alternative to it, a means of imparting the experience to another” (LH, p. 105).

Although investigating the onset of narrative abilities is not Halliday’s main focus, enough evidence exists in his study to suggest what elements are missing and how this capacity develops later on. What follows are the first two narratives that Nigel forms, as recorded by Halliday.

In the first, Nigel states: “Tree, broken, take away, all-gone, bye-bye” (LH, p. 111). What is important to notice is that what accompanies the production of this narrative is most likely an activation of the orienting response. We can assume that Nigel is old enough to have developed a currently active neuronal model of what the world looks like outside his window. Then one day he looks out the window and registers a mismatch between the stimulus he is receiving and the model in his memory: the tree has a large branch broken off which is then carted away. Granted, the perceptual model and the verbal text are different memory functions; nonetheless, Nigel is now at a stage of development where his mind is able to process, store, and draw upon such memories. He is able to retell this narrative for some time after the experience is over.

Nigel’s second narrative is more elaborate. I reproduce the complete passage:

Nigel, at 20 months, has been taken to the zoo, and in the children’s section has picked up a plastic lid which he is clutching in one hand while stroking a goat with the other. The goat, after the manner of its kind, starts to eat the lid. The keeper intervenes, and says kindly but firmly that the goat must not eat the lid—it would not be good for it. Here is Nigel reviewing the incident after returning home, some hours later:

Nigel: try eat lid
Father: What tried to eat the lid?
N: try eat lid
F: What tried to eat the lid?
N: goat . . . man said no . . . goat try eat lid . . . man said no

Then, after a further interval, while being put to bed:

N: goat try eat lid . . . man said no
Mother: Why did the man say no?
N: goat shouldn’t eat lid . . . (shaking head) good for it
M: The goat shouldn’t eat the lid; it’s not good for it.
N: goat try eat lid . . . man said no . . . goat shouldn’t eat lid . . . (shaking head) good for it
This story is then repeated as a whole, verbatim, at frequent intervals over the next few months. (*LH*, pp. 111–12)

Once again, we observe that the capacity to relate a narrative manifests itself alongside the orienting response. Clearly this situation contains novelty: Nigel does not expect to be spoken to by the zoo keeper, and it never occurs to him that anything the goat might do could be harmful or wrong. In addition, we can deduce that the episode holds a certain degree of significance: presumably Nigel is excited, enjoys petting the goat and wants to keep doing so (the appetitive system), but then he is told “firmly” by a stranger and an authority that what he is doing (or allowing to happen) is in some way bad or wrong, which would probably be felt by the young child as some level of threat (the defense system). So, the novel situation Nigel finds himself in is carefully balanced between positive and negative emotion. We can assume this with some assurance, since we also learn that Nigel continues to repeat this story verbatim at frequent intervals over the next few months.

The point here is that the orienting response is not only activated by external stimuli. If the mismatch between experience and the neuronal model is especially significant, profound, endangering, or problematic, the mind will continue to call up the relevant components from memory in an attempt to habituate or assimilate them into a novel, comprehensible, and acceptable form. We could take as an extreme example a mismatch occurring in a personal relationship, such as one partner discovering that he or she has been betrayed by the other. In such a case, it may take months, or years, or even one’s whole lifetime to put the pieces of the experience into comprehensible shape. The traces of the original orienting experience in such a case reside entirely in memory as an unresolved mismatch, which can be brought forward to consciousness and mulled over again and again.

**V**

Imagine you are driving through a strange part of town and unexpectedly see your spouse walking up the street. She steps into a restaurant that you have heard of but never been to. She often needs to entertain clients, take them out to lunch, things like that. You think nothing of it. A few weeks later you and your spouse discuss going out to dinner. You suggest that restaurant. She says “Is it good? I’ve never been there.”
Instantly, the orienting circuits in your brain detect the mismatch. They fasten on to the anomaly and won’t let it go. Is she lying? Lies are motivated. Is she hiding something? If so, then what? There is a story there, and the orienting circuits in your brain, activated by the mismatch, will not rest until that story is made clear.

Plato and Aristotle talked about poets (by which they meant fiction makers) as though they were liars. Perhaps they were on to something. I now take a closer look at the role of anomaly, fallacy, and falsehood in the creation of narrative.

The practices of lying and creating a narrative must be analyzed from two opposite perspectives: on the author’s side, both lying and narrating a story involve the management of truth and revelation, working from a situation that involves an untruth, fallacy, or disjunction; on the audience’s side, unraveling a lie or following a narrative involves the capacity to hold in one’s mind incomplete or inconsistent elements while still trying to make one’s way forward.

Sometimes an author will introduce this mismatch, fallacy, or disjunction in the very first line of a story:

“It was the best of times, it was the worst of times.”

“It is a truth universally acknowledged that a single man in possession of a good fortune, must be in want of a wife.”

“All happy families are alike; each unhappy family is unhappy in its own way.”

“As Gregor Samsa awoke one morning from unsettling dreams, he found himself transformed in his bed into a gigantic insect.”

“A screaming comes across the sky. It has happened before, but there is nothing to compare it to now.”

Obviously, an author does not have to place bold, ironic, or puzzling statements such as these right at the start of a work, but somewhere near the beginning of a narrative readers must be confronted with a conceptual problem that will orient their minds toward the fallacy, mismatch, or deception.

It is a truism that reading literature may open a reader’s mind to new ways of seeing, thinking, and feeling about the world. Indeed, Plato worried about the effects of fictional narrative for precisely this reason. “We give children fables,” he laments, “before we give them physical exercises.” But in spite of our early training in falsehood, we tend to believe as we grow older that our vision of the world is true and that we have an adequate hold on reality. Narratives, however, reawaken our sensitivity to new possibilities in experience, and fictional narratives
reawaken this sense in a different way and to a greater extent than do stories we take to be true. Our sense of the possible is violently expanded by our sense of the false, just as a lie in personal relationships, when perceived, violently expands our awareness of the character of another person and that person’s relation to us.

One could even say that a sense of danger is involved in the possibility of losing one’s way, which contributes to the tension we experience in vicariously following the events of a narrative. The element of falsehood is crucial to this sense of danger, as the false paths always outnumber the true path. Michel de Montaigne writes:

If a lie had no more faces than one, as truth hath, we should be in far better terms than we are. For whatsoever the liar should say, we would take it in a contrary sense. But the opposite of truth hath many, many shapes and an infinite field. Pythagoreans make good to be certain and finite, and evil to be infinite and uncertain. A thousand byways miss the mark, one only hits the same.5

We tend to forget what an enormous role falsehood plays in our lives. In an ordinary day, what percentage of our utterances are completely and strictly speaking true? “Lying,” Ludwig Wittgenstein writes, “is a language game that needs to be learned like any other one,” and by this he means learning not only what things we conventionally tell the truth or lie about but also under what conditions we would describe a particular statement as a lie.6 The issue is the control and management of truth in human discourse, as opposed to the straightforward presentation of truth. In regard to narrative, we begin to think in terms not of apparent truths that can be logically compared but of revealed or hidden truths whose management is controlled by the conscious activity of the author.

Possessing a secret and encoding a secret into narrative is by its nature a two-sided activity, involving a motive for action and an awareness of the content of other minds. “Having a secret,” one could say, is part of the frame that contains the activity of “creating a narrative.” The narration poses a situation that is in some way problematical, paradoxical, anomalous, dysfunctional, or false. The need for resolution on the part of the reader of the originally posed logical problem produces the tension or motive force of the narrative. Just how an author will manage this tension is his or her great secret. Narration is essentially an exercise in curiosity.
Looked at in this way, lies and narratives may be compared to mazes and labyrinths, which also are deliberately designed fallacies or true-false paths. To step into the labyrinth is the same as to step into the lie or the narrative. The labyrinth opens unexpected possibilities of movement and deception, just as the lie and the narrative open up unexpected possibilities of meaning, falsehood, and revelation.

The lie, the narrative, and the labyrinth share structural similarities as well. All three are human artifices that obey a specific set of rules in their construction. The formal confines of the labyrinth mirror the special confines of probability imposed on the liar and the storyteller. Recognition and reversal, which to Aristotle are essential components of a well-made tale, are peculiarly labyrinth-like concepts. Further, a principle of economy exists in lies, narratives, and labyrinths. We assume conscious human action will have some point. When we sense that we have been lied to, or that a narrative is taking shape, or that we have entered a labyrinth and not just tangle of confusing passageways, we begin to concentrate our attention on discovering the primary motivation of the lie, the main point of the narrative, and the one true path of the labyrinth. Indeed, pretending in our daily lives that we are making our way through a labyrinth is one of the most efficient ways of imagining that our lives are following a narrative structure.

Angus Fletcher has written, “The denial that the labyrinth exists has a curious result: everything becomes labyrinthine.” In this regard, the lie, the narrative, and the labyrinth provide a structural background that gives motive and direction to our ordinary, truthful, and non-labyrinthine activities.

VI

As soon as we introduce the word “structure,” however, we are faced with a potential paradox in our account of narrative. We feel certain that the elements of a narrative must be connected by something; the question is what. Our instinct may be to construct a model the structure of which corresponds to the elements of the narrative. Doing so, however, may simply multiply our unanswered questions. We still need to know not only how the elements of the narrative are connected but also how the elements of the model are connected, and then how the narrative and the model we have made of it are connected to each other.

The activity of model building is not so much wrong in its conception and application as in the expectations we have for it. Perhaps the
more narratives or “narrative structures” we study, the finer our sense may become of the way narratives hold together and are driven forward. But we must not make the mistake of thinking that any one structure will explain the nature of representation in another. We might say, as Wittgenstein maintains, that any one form of representation may “show” or reveal the structure in another, but cannot “say” it.

Wittgenstein has an interesting demonstration of this point. Imagine that you wanted to symbolize the meaning “A stands in a relation to B.” You could do so simply by writing:

A B

Now imagine that someone objects, “Well, this shows that they are in a relationship—the relationship of “to the right of” and “to the left of”—but doesn’t say it.”

Fair enough. So how do we make this proposition say it? Imagine we try the following:

A R B

which we now read as “A stands in a relationship [R] to B.”

Perhaps. But notice that “A” and “B” must each stand in a relationship to the relationship term “R.” By the logic of the original objection, that relationship cannot be understood unless it is symbolized also. The proposition is “incomplete” until we have added a new term to represent the relation of “A” to “R” and “R” to “B.” Thus:

A r R r B

where “r” represents the relation of “A” to “R,” and so on. Obviously, the demand for a symbol to represent the relationship leads one into an infinite regress. This fact suggests that the meaning of the original symbols must have been potentially manifest right from the start.

In this regard we might consider the startle reflex and the orienting response. In both cases, a stimulus issues in purposive action before the mind knows what the stimulus means. In the case of the startle response, the action is defensive. In the case of the orienting response, the action is increased attentiveness, leading to an evaluation of significance. In either case, something exists in the mind and is processed systematically
before the mind is able to grasp what the stimulus means or articulate that meaning in language.

Although this mental process is, by its nature, difficult to describe, it is not hard to illustrate. The reading of even a single sentence is enough to demonstrate the projection of significance into a future time. In order to make sense of any sentence (such as the one you are now reading), you must hold the first part of it in your mind as you move forward and connect those elements with the subsequent parts of the sentence. You proceed as if the sentence will make sense, even though as you are reading it you do not know that it will make sense.

We cannot hope to use any particular model of narrative to explain the mystery of another, since it embodies that mystery itself. The best we can do is attempt to illustrate the structure of narrative through the use of various analogies (such as the labyrinth), but we must do so with the awareness that what we are looking for can only be revealed by analogy and cannot be explained by analogy, or probably by any other means.

VII

The task before us is to discover the motive force of narrative—not what structure a narrative may or may not exhibit but what actually drives it forward. I have proposed for this role the orienting response, for several reasons. Our response to narrative, like the orienting response, thrives on what is novel, changing, and creatively developed. Both engage related brain circuits, and for similar purposes. Each activates neural and physiological changes in the subject before the substance of the stimulus is “understood” in any developed sense. Both are intensified and prolonged by the perception of personal significance. Both lead to sustained attention when the experience is mostly pleasurable, although that may be balanced with some manageable degree of threat or danger. Both may leave traces in the mind of unresolved personal and emotional experiences to be returned to and activated at a future time.

Narrative is also connected to lying, for overlapping reasons. Creating a fictional narrative and telling a lie demand an increased cognitive engagement not found in the telling of truthful statements. Indeed, research shows that no brain area is activated more by truth telling than by lying. Further, the creation of fictional narratives and lies depends on an assessment of the content of other minds—what are called theory of mind processes—to an extent not found in truth telling. Both practices accomplish this by activating centers of social cognition in the
brain specifically devoted to predicting the intentions and emotional responses in an audience or listener.\textsuperscript{11}

As for the capacity to attend to narrative, ongoing research suggests that the mind segments or “chunks” elements of a story into bundles, determining event boundaries according to significance, time, and what we might call the sense of an ending. These story chunks are then processed in memory in a nested hierarchy for more efficient recall and possibly continued processing later.\textsuperscript{12} These findings are entirely consistent with a view of narration as a product of the orienting response.\textsuperscript{13}

Much can be said in terms of conceptual clarity and explanatory power for pursuing the orienting response as the motive force of narrative. More than that, doing so places narrative study on a provable and disprovable scientific basis, a goal that becomes more plausible as research progresses. Although the field is broad and ever changing, the findings at this time strongly suggest that the orienting response is the first step in a cascading set of processes that produces deeper receptivity, prolonged attention, and more profound engagement with narrative.

**Pound Ridge, New York**


13. It is interesting to note in this regard that Henri Bergson anticipated many of these laboratory findings over one hundred years ago, working entirely intuitively. See Henri Bergson, *The Creative Mind: An Introduction to Metaphysics* (Mineola: Dover, 2007), pp. 114–27.