

Anežka Kuzmičová
Stockholm University

Literary Narrative and Mental Imagery: A View from Embodied Cognition

Introduction

Mental imagery is reportedly one of the commonest things people remember about their narrative reading in the long term (Sadoski et al.), and it correlates with various other dimensions of reader response, most notably with emotion (Krasny and Sadoski).

The objective of this article is twofold. In the first part, I will discuss two issues central to any theoretical inquiry into mental imagery: embodiment and consciousness. I will do so against the backdrop of second-generation cognitive science—more specifically, the increasingly popular research framework of embodied cognition—and I will consider two caveats attached to its current exploitation in narrative theory. In the second part, I will attempt to cast new light on readerly mental imagery by offering a typology of what I propose to be its four basic varieties. The typology is grounded in the framework of embodied cognition, and it is largely compatible with key neuroscientific and other experimental evidence produced within the framework. It is, however, primarily based on introspection, the one tool available to me for accessing conscious experience. Even though individual predispositions towards imagery (e.g. the tendency to image more or less often, more or less vividly, in greater or lesser detail, or within specific sensory modalities) are known to differ significantly, the proposed varieties are meant to capture imagery structures operating, in full or in part, across these differences.

The notion of mental imagery is used in its narrow sense here so as to capture those instances in which modern silent readers of literary narrative, while reading an expression “X,” experience some form of sensory representation of what they (more or less literally) understand to be X.¹ Despite individual variations in susceptibility to mental imagery, all readers experience mental images some of the time, and some readers experience them all the time (see also Sadoski and Paivio 74). Such experiences can be grounded in any sensory modality, deploying the external senses—i.e., the visual (sight), the auditory (hearing), the olfactory (smell), the gustatory (taste), and the tactile (touch)—as well as the internal senses—i.e.,

the interoceptive (pain, hunger, etc.), the proprioceptive (balance, limb and organ position, etc.), or the motor/kinesthetic (movement-related proprioception: effort, acceleration, etc.). They can, and very often do, combine several of these modalities.

Extant theoretical literature on mental imagery thus defined is small but thematically and methodologically diverse. Authors tend to focus on highly specific questions such as those concerning the art of composing imageable face or flower descriptions, respectively (Jajdelska et al.; Scarry), or the links between spatial imagery and readers' childhood memories (Burke). As a consequence, this article is probably the first attempt to categorize readerly mental imagery in the most general of terms, as a set of distinct embodied experiences, each with a unique combination of essential properties. However, as literary scholarship is more and more accepting of crossovers into cognitive science, the theoretical literature accounting for mental imagery keeps growing steadily. The contemporary second generation of cognitive science, and especially the framework of embodied cognition, can indeed be very helpful to advancing our understanding of mental imagery and other lower-order (e.g. affective) aspects of reader response. Perhaps most notably, narrative scholars have begun to explore what goes under the name of embodied simulation (for a review, see Caracciolo, "Embodiment at the Crossroads").

Embodied simulation stands for several interrelated cognitive phenomena that are currently being unraveled with the help of fMRI and other experimental methodologies and that are perhaps most notoriously represented by (but not restricted to) mirror neurons. Briefly put, it has been suggested that in the processing of language referring to sensorimotor contents, whether it is an isolated phrase such as "grab the cake" (Raposo et al.) or a full-fledged narrative (Speer et al.), our sensorimotor cortex becomes automatically activated in much the same way as if we were acting out the represented actions and perceptions ourselves. For instance, when a story protagonist is reported to pick up an object, e.g., a textbook, this is reflected not only in the motor but also in the visual area of the brain that would be active if the reader actually picked up the same object.

Nevertheless, the exploitation of embodied simulation in literary and other theory is not wholly unproblematic. In each attempt at fusing literary theoretical speculation with experimental cognitive science, one could identify a host of methodological problems, starting from the fact that the stimuli used in cognitive experiments usually do not bear the slightest resemblance to literary narrative. I have chosen to accept most of these problems as a natural part of any interdisciplinary inquiry. However, there are two caveats that I would like to mention: I will call them "the problem of referential bias" and "the problem of consciousness."

1. The Tenets (and Caveats) of Embodied Cognition

1.1 Referential Bias

As much as one should be impressed by the fact that the nonverbal, referential contents of narrative literature can be traced in one's sensorimotor cortex, or even musculature (for a review, see Fischer and Zwaan), there is evidence pointing toward embodied simulation of yet another kind: the *verbal* kind. That is, not only do we process sentences such as "He picked up his English workbook" (Speer et al. 991) in ways largely resembling the situations they refer to, but we also process them in ways largely resembling the activity of reading them out loud or listening to them as spoken by somebody else.

It has long been suggested that the speech apparatus and auditory circuitry are active during language comprehension, including silent reading, in a process known as subvocal rehearsal (Baddeley, Eldridge, and Lewis). More recently, studies have shown that listening to speech activates the recipient's tongue muscles (Watkins, Strafella, and Paus); that verbal auditory imagery activates the auditory cortex (for a review, see Hubbard); and, crucially, that silent narrative reading activates the temporal voice areas associated with speech perception (Yao, Belin, and Scheepers). In other words, silent reading entails "voices" in one's brain. The conclusion that narrative reading is a largely simulative and embodied process thus applies to the verbal medium as much as it applies to referential contents. From the viewpoint of narrative theory, traditionally studying the many different ways in which nonverbal phenomena (characters, events) can be verbally conveyed, this should make perfect sense. Yet, interestingly, verbal simulations have enjoyed far less popularity compared to their referential counterpart. In contemporary narrative theory, verbal simulations (and verbal imagery) are largely unnoticed (but see Tsur for an account of verbal imagery in poetry). This is what I mean by referential bias.

Referential bias may be a direct effect of the preceding decades of verbal hegemony epitomized in structuralist and poststructuralist thinking. Also, it coincides with a general tendency in cognitive science, including standard theories of mental imagery, to privilege referential over verbal images and, within the referential domain, to privilege the visual over other sensory modalities. One notable exception is the dual coding theory first proposed by Allan Paivio (*Mental Representations*) and later adapted for reading in collaboration with Mark Sadoski (*Imagery and Text*), an integrative theoretical project bridging the gap in cognitive science between the first and second generation. Sadoski and Paivio postulate two parallel cognitive systems, the nonverbal (in my nomenclature: the referential) and the verbal, each with a potential to yield sensorimotor effects during reading (e.g. a visual image of

a cup vs. the verbal auditory image /*kup*/). Although a major part of their imagery examples still belong to the referential domain and visual modality, other modalities and types of imagery are cited or at least recognized.

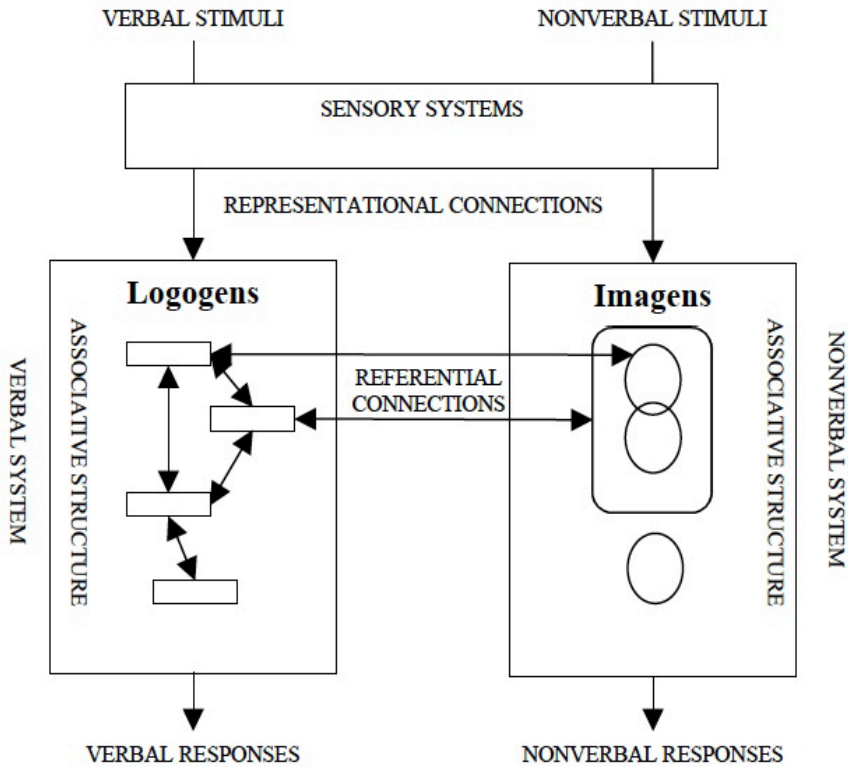


Fig. 1. Paivio's general model of the dual coding theory (first published in 1986 as Figure 4.1 in his *Mental Representations: A Dual Coding Approach*, p. 67; reprinted by permission of Oxford UP, USA). Under this model, what I have termed readers' referential imagery and simulation processes belong to the right-hand system, while the left-hand system accommodates imagery and simulation processes pertaining to the text as verbal stimulus.

1.2 Consciousness

Despite its undeniable qualities, even Sadoski and Paivio's work seems to be (partly) implicated in the second caveat that needs to be mentioned at this point, i.e., the problem of consciousness. The problem arises whenever non-conscious subpersonal processes on the one hand and conscious experience (i.e. processes at least partly noticeable to the subject herself) on the other are treated as if they were

the same thing. For instance, neuroscience research of the kind mentioned above is often cited, especially outside the home discipline, with so much enthusiasm that the non-conscious processes central to this research—be they called “mental representation” as in first-generation cognitive science, including Sadoski and Paivio, or “embodied simulation” as in the framework of embodied cognition—become more or less conflated with the notion of mental imagery.

This happened for instance when one of the very first fMRI studies of embodied simulation using entire connected narrative (a straightforward account of a boy’s day at school), conducted by Nicole Speer and colleagues, was publicly announced in a newspaper article titled “Readers Build *Vivid* Mental Simulations of Narrative Situations, Brain Scans Suggest” (Everding; my italics; see Ryan for further discussion). Obviously, the “vividness” ascribed in the article to the fMRI-detected simulations is an *experiential* category, whereas cerebral blood flow is not. In a similar vein, literary scholar Hannah Chapelle Wojciehowski and neuroscientist Vittorio Gallese use the mirror neuron literature to support the conclusion that, “by means of the mirroring mechanisms,” literature “guides us into . . . imagined bodily *experience*” (Chapelle Wojciehowski and Gallese; my italics). Without denying the importance of fMRI or the mirror neuron literature, it should be acknowledged that few readers probably experience muscular activity and other vivid motor imagery *every time* they read about a boy picking up a textbook from a desk. If this were the case, the reading mind would be constantly overtaxed. To say that one’s brain runs a simulation of X is not to say that one necessarily experiences X or a mental image thereof. This distinction is not drawn often enough or explicitly enough. This is what I mean by the problem of consciousness.

Sadoski and Paivio are more careful than most other authors in both literary studies and cognitive science about drawing the line between non-conscious and conscious processes, but they are still ambiguous on this point. In some places (e.g. Sadoski and Paivio 53) they define imagery as a conscious experience. However, they also seem to assume that the nonverbal (in my nomenclature: referential) imagery system is at work in all language comprehension, even when images are not expressly noticed by the comprehender (e.g. Sadoski and Paivio 74). This discrepancy may provoke questions: What exactly is a mental image if it is not consciously experienced? If we do not notice it, how do we know the contents are really there as an image, i.e., something to be directly perceived rather than decoded propositionally?

The small but growing field of empirical literary studies, unlike its ancestral disciplines literary theory and cognitive science, is mostly clear with regard to

the problem of consciousness because it deals with readers' conscious self-report (questionnaires, verbal protocols, class discussion recordings, etc.). But when mental imagery is brought up in this field at all, it is usually conceptualized as one of many dimensions on a scale devised to measure a more complex phenomenon, such as narrative transportation (Green)² or perceived literariness (Miall and Kuiken). As a consequence, researchers rarely ask subjects to do more than simply report if and to what extent (on a scale from 1 to n) a given stimulus text calls up images in their mind. This tells the researchers little about what it is *like*, in terms of experience, to have these images and what they are really images *of*. Although the researchers need not worry about this in pursuit of their particular research objectives, their research thus entails a nested problem of consciousness in that it fails to account for the felt qualities of the reported imagery experience.³ What follows is a theoretical account of exactly those qualities. Its validity remains (to the extent that this is possible) to be empirically verified.

2. Varieties of Mental Imagery in Literary Narrative

What is it like to experience mental imagery while reading literary narrative, or rather, what are the basic varieties of this what-it-is-likeness?

Generally, mental imagery in reading is subject to three factors (see also Esrock and Kuzmičová): *the text* (What kind of imagery does it invite?), *the reader* (What kind of imager is she?), and *the situation* (What way of reading does she happen to engage in at a given moment?). The text factor, i.e., the task of determining the imagery potential of discrete narrative strategies, is probably of most obvious interest to literary scholars. Some of my earlier work dealing with this factor is referenced in footnotes below. Meanwhile, this article makes but a few generic suggestions as to how the different imagery varieties may typically be cued in text. It focuses on exploring the experiential diversity of mental imagery *per se*. For this purpose, the proposed imagery varieties will all be exemplified with the same literary passage, and partly also the same sentence. This should demonstrate how the text factor operates in concert with the individual reader's predispositions (the reader factor), as well as with the unique dynamics of a particular reading session (the situation factor). The four scenarios described below may be seen either as four different imagery experiences of four differently predisposed hypothetical readers or as four different hypothetical situations of a single reader-imager (in this case, myself).

Until this point I have discussed two varieties of mental imagery: the referential and the verbal. The referential and the verbal may be understood as two values of a variable called *the domain of imagery*. If we are to answer the opening question of

this section, however, identifying the domain of imagery is not enough. For instance, consider the following snippet from Ernest Hemingway's novel *The Garden of Eden*:

The breeze from the sea was blowing through the room and [David] was reading with his shoulders and the small of his back against two pillows and another folded behind his head.
(Hemingway, *The Garden of Eden* 45)

Suppose a reader of these two lines focuses, as most readers usually do, on the human character present on the scene. The reader-imager may then easily form a referential image of David as conjured from within: enacting David's familiar body posture, experiencing the breeze and the pressure of pillows against his back and head, a viewing of the pages in David's book, and perhaps even a glancing at the indistinct furnishings of a room. Alternatively, the reader-imager may form an image of the scene as conjured from without: visualizing a sketchy male figure half-sitting on a sofa or bed, a book in his hands, a pillow behind his head. Obviously, these two images, albeit equally referential, yield qualitatively very different experiences. One puts the reader in David's position, the other does not. Therefore, it is necessary to introduce a second variable, the variable of *stance*.

Stance in mental imaging can be either *inner* as in the former image of David conjured from within, or *outer* as in the latter image of David conjured from without. That is, although all mental images are necessarily internal to the imager's body, their contents differ in the degree to which the imager's body is felt to be actively at work. The two variables of domain and stance,⁴ having two instantiations each, slice up the field of imagery experiences into four, combining in four possible ways into four distinct imagery varieties. Let us now proceed to an overview, and to a further characterization, of the four varieties. Let us also keep in mind from the very beginning that, even though separated here for the sake of clarity, the four varieties are meant to serve as prototypes only, constituting in fact a continuum of sorts and thus allowing for quick transitions and in-between experiences. Consider the continued quotation:

The breeze from the sea was blowing through the room [A] and [David] was reading with his shoulders and the small of his back against two pillows and another folded behind his head [B]. He was sleepy after lunch but he felt hollow with waiting for her and he read and waited. Then he heard the door open and [Catherine] came in and for an instant he did not know her. She stood there with her hands below her breasts on the cashmere sweater and breathing as though she had been running.

"Oh, no," she said. "No."

Then she was on the bed pushing her head against him saying, "No. No. Please David. Don't you at all?"

He held her close against his chest and felt it smooth close clipped and coarsely silky and she pushed it hard against him again and again.

“What did you do, Devil?” [C]
She raised her head and looked at him and her lips pressed against his and she moved them from side to side and moved on the bed so her body was pressed against his. [D]
 (Hemingway, *The Garden of Eden* 45; my italics)

Briefly, here is what is happening: David and Catherine are on their honeymoon. It is the 1920s. Unexpectedly to David, Catherine comes home one day with her hair cut short in a new, provocative way.

Depending on the reading situation and the individual reader’s predispositions, the passage may prompt the following varieties of imagery.

2.1 Enactment-imagery

Enactment-imagery is the former of the two varieties exemplified above: it belongs to the *referential* domain, and it is experienced from an *inner* stance. It amounts to vicarious experiencing proper of the referential contents of a given passage. For instance, upon the reading of Segment [B] above, a reader imaging in the enactment mode may adopt David’s first-person sensorimotor experience so closely as to feel the pressure of a pillow against her neck, or squint imperceptibly in an attempt to fixate on the letters in David’s book.

Enactment-imagery is often the dominant aspiration of modern literary narrative with respect to referential imaging, and it is largely considered one of the most aesthetically rewarding experiences (e.g. Collins 96). In spite of, or perhaps by virtue of, its experiential richness, it is felt to be extremely short-lived during the very act of fluent reading. It is multimodal, often fusing many different sensorimotor modalities, external (e.g. the sight of letters on a page) and internal (e.g. the position of one’s arms when holding a book, and the muscular tension therein). Whenever such fusion takes place, a sense of first-person *presence* arises relative to the storyworld.⁵ For a brief moment, then, you are really there, in the shoes of an experiencer, physically linked to David’s (imaged) pillows behind your back and his (imaged) book in your hand.⁶ The interaction between the experiencer (and thus also the reader) and the imaged environment need not be “literally” physical such as the one between David and his book, although such cuing probably adheres most closely to the workings of perception as defined within the framework of embodied cognition (e.g. Wilson, see also Müller in this volume). Sometimes it is enough that a literary character is simply referred to be looking at something, or even just reflecting upon it, for the reader to enact the character’s embodied stance *vis-à-vis* this something. The presence of an experiencer (or at least the possibility of inferring one on the part of the reader) is, however, a pre-requisite of enactment-imagery.

Enactment-imagery is felt to occur spontaneously, surprising the imager at times, and seemingly without much cognitive effort. It entails a sense of medium transparency. In the instant of experiencing enactment-imagery, the reader-imager comes as close as one possibly can to forgetting that the experience was in fact mediated by a string of words on a page. The imager is directly situated with regard to the storyworld, experiencing no mediating filter between her embodied mind and the referential text contents. With respect to the narrative at large, the image in turn is perfectly situated, fitting seamlessly into the surrounding flow of reading experience. The last two observations will gain further clarity upon comparison with the next imagery variety, description-imagery.

2.2 Description-imagery

Description-imagery is the latter of the two varieties exemplified above. It belongs to the *referential* domain, and it is experienced from an *outer* stance. The designation “outer” refers not only to the fact that the internal senses are shut off in description-imagery. It also points to the fact that the imager’s body is situated outside the storyworld. Let me restate my above example. My contention that David, in Segment [B], can also be imaged from without clearly suggests that even though the explicit or inferred presence of an experiencer (in this case, David) is a necessary pre-requisite of enactment-imagery, it is not a sufficient pre-requisite. That is, experiencers can also be imaged outwardly as objects of description rather than only inwardly as subjects of sensorimotor experience proper. This is at the core of description-imagery.

Description-imagery shares some characteristics of enactment-imagery in that it yields visual images of objects extended in space, but it is not enactive because the experience differs in important ways from direct perception. One of the main differences is that the verbal medium is not felt to be fully transparent. Rather than approaching the stretch of text as someone who is experiencing the contents of the mental image directly, the reader thus approaches it as someone who is being propositionally informed of an object (or, in this case, a human character) having such-and-such properties or behaving in such-and-such manner. For instance, when processing Segment [B] above, the visualization of a sketchy male figure reading with a pillow behind his head is then experienced as a compliant response to somebody’s (the narrator’s) instructions (see also Scarry 199) to assemble pieces of visual information into an image of a male figure reading with a pillow behind his head. Therefore, the image is not experienced to have arisen spontaneously, or not particularly so. Rather, the reader becomes aware of the cognitive labor invested in the imaging process. The pace of reading is felt to have slowed down as the image

is being consciously conjured in the reader's mind. As a consequence, the image lacks the experiential richness of enactment-imagery.

I have suggested above that enactment-imagery is effectively cued by references to literary characters having sensorimotor experiences, especially when physically linked to the environment by way of direct interaction (e.g. by virtue of being seated with pillows amassed behind their back, holding a book in their hand). What kind of cues, then, would typically prompt description-imagery? Given the sensuous qualities of Hemingway's prose, especially the introductory reference to breeze inviting the reader to form a cutaneous (skin-based) enactment-image from the outset (Segment [A]), the rendition of David provided in Segment [B] is not a very good example. But imagine an alternative version of Hemingway's passage, one in which the pillow behind David's head is minutely described in several long sentences, e.g., as being folded in a particular way and tilted at a particular angle, the decorative pattern of the case consisting of minuscule florals of such-and-such colors forming such-and-such complicated ornaments. In this version, the flow of narration would be interrupted by a static, thickly descriptive bit. Such are the passages that typically prompt description-imagery, especially when centered around isolated inanimate objects (rather than around people or larger spatial configurations; see below), which are not easily imaged from within.⁷

To the extent that a description is noticeable as a pause in narrative, a description-image is not always organically situated (in contrast to enactment-images) with respect to the preceding flow of reading experience. It may rather be perceived as a semi-autonomous experience. Nor is the reader-imager's body situated with respect to the referential contents directly but only through a filter of verbal communication. At times, this filter itself becomes the object of the reader's mental imagery while the referential contents of a description (or other text structure) fade away from, or simply never enter, the reader's conscious imagery.⁸

2.3 *Speech-imagery*

This is where we are entering the domain of verbal imagery. The first variety to be discussed is speech-imagery. Speech-imagery is *verbal*, and it is experienced from an *outer* stance. This means that speech-imagery yields verbal auditory images with only a moderate degree of embodied agency. More specifically, it puts the reader in the position of a vicarious *listener*, someone who is receiving the text as if it were spoken out loud by an extraneous speaker. For instance, upon the reading of Segment [B], the reader may suddenly feel as though she were hearing the voice of an impersonal narrator, telling her about David spending his afternoon with a book,

a bunch of pillows behind his back. The reader may even have the impression that there was actual pitch, timbre, volume, pace, and so forth to the narrator's voice.

Again, given the referential suggestiveness of Hemingway's prose, this variety of imagery may not be terribly likely to occur with Segment [B] —, unless the reader is specially predisposed—for instance, by a weakness for rhythm or by having previously heard the audio edition of the novel (Hemingway, *The Garden of Eden (Unabridged): Read by Patrick Wilson*). Speech-imagery is, on the other hand, quite likely to occur with Segment [C] in the same passage (“What did you do, Devil?”). Then of course it is not the bland voice of an impersonal narrator the reader images to be hearing but the manly bass (or whatever voice type the reader happens to fancy) of a full-blooded character, David. In typical speech-imagery cues, such as David's question, a higher degree of orality is detectable compared to other instances of literary narrative, including Segment [B].

In speech-imagery, the verbal medium can never be experienced as fully transparent because language, or human speech more specifically, constitutes the contents proper of a verbal image. However, speech-imagery may still seem comparably immediate because it comes on quickly, spontaneously, and without effort. Therefore, it may also be experienced as relatively robust in terms of experience, despite being limited to the auditory modality. Similarly to description-imagery, the situation of the reader is a communicative one rather than one of a direct (referential) experiencer. Similarly to enactment-imagery, speech-imagery is short-lived, as it is perfectly situated with respect to the surrounding flow of narrative experience. No lags, delays, or pauses in the flow need to arise for speech-imagery to become fully experienced.

In fact, speech-imagery marks a degree of situatedness often accompanied by referential imagery of the communicative situation. That is, the reader may not only hear David utter his question but also *see* him do it (or alternatively see Catherine, David's interlocutor, or both as engaged in their conversation). However, this combinability of speech-images with various nonverbal images of communicative situation does not make such speech-images referential *per se*. As long as an image represents the sound of a circumscribed verbal structure (“What did you do, Devil?”) rather than its nonverbal contents (hard to define as they are in the case of a question), it will remain, with regard to that particular structure, a verbal image.

2.4 Rehearsal-imagery

Rehearsal-imagery, the fourth variety, belongs to the *verbal* domain, and it is experienced from an *inner* stance. That is, while the voice imaged in speech-imagery belongs to a speaker outside the reader's body, putting the reader in the position of

a vicarious listener, the voice imaged in rehearsal-imagery belongs to the reader, putting her in the position of a vicarious *speaker*. The distinctive corporeal feature of rehearsal-imagery *vis-à-vis* speech-imagery is that it is consciously felt to deploy the reader's vocal cords and the muscles in her mouth and throat. It is literally inner in that it originates in the reader's articulatory apparatus. Thus rehearsal-imagery is not only auditory; it is also, and necessarily, kinesthetic. There need not be much of a voice for one to experience rehearsal-imagery as long as one feels the vibrations.

Compared to the other three imagery varieties, rehearsal-imagery may be slightly more difficult to predict based on text cues alone. Depending neither on the referential imageability of the text contents (as enactment- and description-imagery do) nor on the notional presence of a distinct speaker (as speech-imagery does), rehearsal may be allocated much more randomly. Still, in its context, Segment [B] may not be the most persuasive example of a sentence to prompt rehearsal-imagery. Segment [D] should work a little better: "She raised her head and looked at him and her lips pressed against his and she moved them from side to side and moved on the bed so her body was pressed against his." Rendering in so many words an event that intuitively should be referentially quite imageable, this sentence is likely to make some readers impatient. Because of its syntax, the sentence is in particular need of explicit rhythm and parsing, for both of which it depends on the reader's articulatory apparatus. Readers may thus experience sentences akin to this one by way of rehearsal-imagery.

Similarly to description-imagery (as compared to enactment-imagery), the embodied experience of rehearsal-imagery entails significantly more effort as compared to speech-imagery. Reading is felt to lag behind the text as it were because this is where the limits of the verbal medium are tried, the reader becoming aware of language in its opacity. With the reader's own vocal apparatus as its medium proper, the mental image feels far from spontaneous or immediate. The reader's experience is non-situated both with respect to the preceding flow of reading overall and with respect to the referential contents of the narrative. At the very point of experiencing rehearsal-imagery, the reader imaginatively partakes neither in direct perceptual experience nor in communicative speech. The words are being mouthed over for her to make sense of them at all. Although weak in terms of auditory perception, rehearsal-imagery is an imagery variety nevertheless. In certain markedly literary or poetic types of narrative prose, it may even be the predominant variety.⁹

Conclusion

My descriptions of the four imagery varieties are summarized in Figure 2. Apart from imposing order onto the many distinctive qualities and variables specified above, Figure 2 puts additional emphasis on an aspect hitherto undeveloped: the four imagery prototypes form a single experiential continuum. What the double-headed arrows are meant to show is that the discrete varieties may sometimes be experienced to shade off into each other. At least within the two basic domains of imagery, the referential and the verbal, such transitions may be experienced as relatively smooth. Between domains, they may be more readily perceptible, requiring time for a figure/ground reversal from the referential to the verbal or *vice versa*. In addition, the double-headed arrows remind us that what was described in 2.1 to 2.4 are precisely just prototypes, and that various kinds of in-between experiences are conceivable, combining the properties of two or several different imagery varieties.

<i>Variety</i>	Enactment-imagery	Description-imagery	Speech-imagery	Rehearsal-imagery
<i>Continuum</i>				
<i>Domain</i>	Referential		Verbal	
<i>Stance</i>	Inner	Outer	Outer	Inner
<i>Reader</i>	Experiencer	Visualizer	Listener	Speaker

<i>Medium awareness</i>	Low High			
<i>Image situated (vis-à-vis preceding experience)</i>	Yes	No	Yes	No
<i>Reader's situation (vis-à-vis referential contents)</i>	Direct	Communicative	Communicative	---
<i>Typical cue</i>	Character/storyworld interaction	Static object description	Oral style	---

Fig. 2. Imagery continuum

It would not make much sense to talk about prototypical in-between phenomena. However, let me single out one example of in-between imagery for each domain. Starting with the referential domain, what kind of experiences may be located in the midst of the arrow linking enactment-imagery with description-imagery? I have proposed that enactment-imagery, amounting to first-person enactment of the embodied stance of a direct experiencer, requires that the presence of an experiencer is indeed mentioned, or at least inferred, in the text. I have also proposed that description-imagery, amounting to visualization from the perspective of an extraneous spectator, is most reliably prompted by descriptions (detailed) of inanimate objects, which are not easily imaged from within.

Then how about descriptions (more or less detailed) of spatial configurations such as rooms, buildings, or landscapes? Even though they refer to the inanimate, they certainly can be easily imaged from within. To the extent that a description of a space seems compelling, the reader can therefore readily adopt the vantage point of a direct experiencer-spectator without necessarily adopting the vantage point of a literary character. This is the kind of image one may perhaps form for Hemingway's Segment [A] if read in isolation ("The breeze from the sea was blowing through the room"). Technically, this image would be neither an enactment-image nor a description-image, feeding primarily on the cutaneous sense and only very little on the visual. For some, the in-between experience may even last throughout the subsequent Segment [B], the reader becoming a quiet spectator, watching David from somewhere in his room. Such outer image would probably only last until the first mention, in the subsequent sentence, of David's inner feelings of being sleepy and hollow. That mention locates the perceptual center inside David's body, eliciting enactment-imagery instead.

In-between experiences may also occur in the verbal domain. In fact, one such experience has been described (or nearly so) in 2.3 above. I am thinking of the kind of speech-imagery (or nearly so) one may experience when mentally imaging sentences that can only be attributed to impersonal narrators, e.g., the one informing us about David's quiet afternoon. The voice of such an ontologically indistinct narrator who does not make the slightest effort to introduce him- or herself as a speaker in his or her own right may often sound rather bland, impoverished. More precisely, albeit seemingly extraneous to the reader's body, the only voice imaged in this scenario is the reader's own subvocalizing. This variety of verbal mental imaging corresponds neither to speech-imagery (it is not properly voiced) nor to rehearsal-imagery (first-person articulatory activity does not reach the reader's consciousness).

Unlike the referential kind of in-between imagery prompted by spatial description, this verbal kind of in-between imagery cannot be easily predicted to occur with a specific type of text cue. It can only be predicted in a most generic way, by saying that it is likely to occur when the narrator is indistinct, refraining from commentary and oral residues of the “Dear Reader” family.¹⁰ Needless to say, narrators of all varieties (and hence any sort of focalization) can be perceived in many different ways in the short term, on the level of individual sentences. Here again the boundary between what is prototypical and what is in-between is thin, partly because transitions happen in a matter of milliseconds.

Like in the referential domain, moreover, my last example of in-between imagery experience suggests that imageability and image variation largely boil down to the degree of perceived figuration (Is there a human body acting/speaking in the text?)—i.e., to the amount of embodiment effectively catered to the reader’s cognition, or, more precisely, to the reader’s consciousness. It is consciousness, not the subpersonal processes of embodied simulation alone, what makes a literary narrative slightly different each time we reread it, producing new combinations and sequences of mental images. While it must be acknowledged that individuals vary in their tendency to experience mental imagery, evidence (for a review, see Sadoski and Paivio) suggests that even in the referential domain alone, there are few non-imagers in the absolute. Once readerly imagery is redefined so as to overcome referential bias, it is probably fair to say that mental imaging of some variety permeates any literary reading experience.

It remains to be studied more closely how the different imagery varieties intersect and how these intersections are prompted by textual cues. Perhaps more importantly, a whole other line of inquiry needs to be pursued to unravel the ties between mental imagery and higher-order aspects of reading as sociocultural practice. Are particular types of interpretive thought facilitated, or even preconditioned, by particular varieties of mental imagery? Do avid referential/verbal imagers differ from readers less susceptible to such imagery in how they understand narratives and how they transfer literary insight into daily life? Does mental imagery, in its tendency to recur in memory, intensify the long-term impact of narrative? Continued research into readerly mental imagery will need to address these questions because a reader is not only an embodied being responding to sensorimotor stimuli; a reader is also a specialized thinker who performs countless *ad hoc* operations at a time, all the while observing socially preconceived interpretive strategies as well as deeply personal needs for meaning-making.¹¹

Notes

¹ This definition is narrow insofar as it excludes willed mental images (i.e. images one has purposely determined to conjure off-line, while the course of reading is interrupted) as well as mental images prompted by indirect association (e.g. spontaneously imaging the smell of grandma's apple pie as a result of reading "apple tree") or sheer mind-wandering (mental images untraceable to the narrative).

² Transportation is a term referring to deep overall involvement in a narrative reading experience.

³ For an exception, see the work of Karen Krasny and Mark Sadoski ("Mental Imagery and Affect"), where subjects were asked to rate imagery in general as well as describe it freely.

⁴ There is also the important variable of sensory modality. Is the image in question visual, auditory, olfactory, gustatory, tactile, motor, and so forth or alternatively, which of these modalities does it combine? Sensory modality will, however, be treated as a dependent rather than independent variable since it combines with the previous two variables in partly predetermined ways. For instance, a verbal image cannot be olfactory or gustatory. An interesting exception may perhaps be found in the experience of synesthetic readers.

⁵ For more on enactment-imagery and presence and their possible textual triggers, see my "Presence in the Reading of Literary Narrative."

⁶ Highly transitory in nature, enactment-imagery does not necessarily entail enactment of other aspects of a character's experience (e.g. emotions). But when such further merging between reader and character takes place (see also Caracciolo's "Fictional Consciousnesses"), enactment-imagery can be a contributing factor.

⁷ Readers' enactment in relation to inanimate or abstract entities has been accounted for by Ellen Esrock ("Embodying Literature"). Although closely related, the phenomenon described by Esrock falls outside my introductory definition of mental imagery in that it requires "reinterpretation," wherein the reader responds to an expression "X" (e.g. "wind") by experiencing an embodied process Y (e.g. attending to her own breathing, thus "becoming" wind) rather than by a more or less literal mental image of X, whether cutaneous (feeling wind against her skin) or visual (seeing a windy landscape).

⁸ For more on description-imagery and its basis in descriptive passages, see my "Fidelity without Mimesis."

⁹ For more on speech-imagery and rehearsal-imagery and their textual underpinnings, see my "Outer vs. Inner Reverberations."

¹⁰ Alternatively, in-between verbal imagery may be common in the reading of narratives employing strategies such as free indirect discourse and stream of consciousness where characters' utterances are consistently fused with the ones attributable to impersonal narrators.

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