

Chapter 8

A Cognitive Framework for Narrative Structure

1 INTRODUCTION

This chapter lays out a framework of factors and relationships intended to represent the structure of narrative and its context.¹ Here, narrative is understood to encompass productions of a certain kind, whether these are conversational, written, theatrical, filmic, or pictorial. More broadly construed, narrative can be understood to encompass nonproduced entities of a certain kind, such as history or an individual's life. The ultimate goal is to develop a comprehensive framework for ascertaining and characterizing the structure of all existing and potential forms of narrative, as well as the larger context within which narrative is situated. Such a comprehensive framework would include provision for the points of articulation around which narratives and contexts of any kind can vary.

The specific framework set out in this chapter is a step in that direction. This framework was constructed as a working grid for heuristic purposes—much will need to be added to it, and no doubt much of it will need to be revised. The goal here was not to analyze some smaller circumscribed area exhaustively, nor to include all the categories relevant to the final analysis. Rather it was to discern a number of the main structural articulations in their distribution over a broader and, in some respects, perhaps unbounded domain. By presenting a distributed selection of such structures, we aim to initiate the process of limning out the comprehensive framework.²

1.1 The Cognitive Approach to the Analysis of Narrative

Our treatment of narrative adopts the presuppositions of cognitive science, cognitive psychology, and cognitive linguistics in assuming the existence of a mind that has produced the narrative as well as of a mind

that is cognizing the narrative. Unlike some approaches that limit their scope of attention to the confines of the narrative alone or that deny the existence of individual minds, the approach here describes a wealth of structural interrelationships that could be observed only by the adoption of a wider scope that includes the existence of both generative and interpretative mental activity. Thus, in our theoretical framework, a particular portion of space-time can be a narrative “work” only insofar as there is a mind that has assembled it and a mind that perceives and cognizes it as such. Otherwise, it is merely some physical pattern.

More accurately, this last statement applies only to more narrowly construed narrative—that is, to our usual idea of narrative. But it needs to be amended in two ways to cover narrative more broadly construed. First, the perceiver of a narrative need not be an entity separate from its producer. Thus, a producer can create a narrative without any separate sentient entity to perceive it. But that producer will function as perceiver as well, even if only in the course of production.

Second, an intentional sentient producer is not strictly necessary for the construal of something as a narrative. A perceiving mind by itself is capable of experiencing some naturally occurring formation or some unintended formation by a sentient entity, as being a narrative work. More systematically, a perceiver regularly construes the external events she has witnessed over a period of time as narrative—a type that might be termed “history.” And a perceiver regularly construes the sequence of personal experiences he has had over time—both interior and externally based experiences—as constituting a narrative, that of his “life.” Thus, for there to be a narrative, there must at least be a cognizant perceiver, while narrowly construed narrative also requires a cognizant producer.

Broadly construed, narrative can be placed within a larger cognitive context by bringing in the notion of **cognitive systems** (which can themselves be posited as a part of overall psychological functioning). A cognitive system consists of a set of mental capacities that interact with each other to perform a particular integrated and coherent function. Cognitive systems, which can range from small to large, are assumed not to be wholly autonomous, like Fodor’s (1983) concept of modules. A putative cognitive system for interconnecting an assembly of mental experiences so as to form a single overall pattern is relevant here. This can be called the **pattern-forming cognitive system**. This general system, then, has a specialized application to a sequence of experiences that are cognized over time. It integrates them into a single pattern understood as a story, a his-

tory, or a life. This functioning of the pattern-forming cognitive system with respect to sequences experienced through time will be called the **narrative cognitive system** here.

Thus, we posit that the mental faculty for the generation and experiencing of broadly construed narrative constitutes a specific cognitive system in its own right. This narrative cognitive system would generally function to connect and integrate certain components of conscious content over time into a coherent ideational structure. More specifically, as detailed in section 4.4.1, this is a system that ascribes entityhood to some sequential portion of experienced phenomena, that imputes continuity of identity to that entity, that integrates contents associated with that continuing identity into an ideational whole, and that fixes a feeling of attachment to that complex. As noted, we posit that this cognitive system functions in approximately the same way to generate in consciousness the experience of a time-based pattern that constitutes a story one has heard, or a history one has witnessed, or the life one has lived.

It appears that the narrative cognitive system is typically a robustly active system and so can commandeer much of an individual's attentional resources. This system is thus responsible for the sense that an individual often has of being gripped by a story and of being unwilling to disrupt it until its conclusion. This operation of the system must be in place rather early in development, since stories typically absorb young children.

The pattern-forming cognitive system and its application to temporal sequence in the narrative cognitive system presumably evolved through selective pressure into their present form of having great scope and attentional attraction. The advantage in the increase of scope was that it made possible the cognizing of larger patterns and longer-range plans. To the extent that such patterns and plans corresponded accurately to actual conditions, the increase was adaptive.

The fact that the human mental faculty for narrative may constitute a particular cognitive system has led to a principal feature of the present analysis: an endeavor to relate the narrative system to other cognitive systems. As background, we note that a principal direction of the author's work has been to determine the properties of conceptual structuring that apply in common across many or all the major cognitive systems that constitute human mental functioning insofar as these are accessible to consciousness. As presented in the introduction and in a number of the chapters in this volume, this line of research has so far examined structural properties in common between language and such other major

cognitive systems as perception, reasoning, affect, memory, anticipatory projection, and cultural structure. And to these cognitive systems can now be added the putative cognitive system for pattern formation and its temporal specialization, the narrative cognitive system, dedicated to the formation of narrative structure broadly construed.

As part of our “overlapping systems model” of cognitive organization, a comparison of these cognitive systems has provisionally yielded the general finding that each system has certain structural properties that are uniquely its own, certain structural properties that it shares with only one or a few other systems, and certain structural properties that it shares with most or all the other systems. These last properties would constitute the most fundamental properties of conceptual structuring in human cognition. Certain aspects of this fundamental structure were described in chapter I-1. But their greatest expansion and detailing to date appears in section 4 of the present chapter. The parameters described in that section are the factors that to this point in the present line of research seem the most general and common across the range of cognitive systems. Because they have been included in the present treatment of narrative, most of the examples used to illustrate the parameters pertain to narrative structure. But their cognitive generality is nevertheless intended.

To sum up our cognitive approach, we see narrative as something that by necessity is cognitively produced or experienced, rather than as anything that could exist autonomously in its own right. We believe that it represents the operation of a cognitive system and that its characteristics share the properties that are common across cognitive systems generally, so that it can, in turn, be used to better understand the nature of those properties. This particular cognitive perspective distinguishes the present analysis from most other treatments of narrative.³

1.2 The Cognitive Approach to the Narrative Context

As indicated above, narratives per se are understood as necessarily situated within a larger context. Heuristically partitioned, this context encompasses—in addition to the narratives proper—their producers, experiencers, containing societies, and the surrounding world. Since our analytic framework is cognitively based, we must address the ways that its factors and constructs apply to the divisions of this context.

First, as already discussed, this cognitively based framework will apply directly to the cognition of the producer of a narrative, both generally and

in the course of producing the narrative, as well as to the cognition of the experiencer of a narrative, both generally and in the process of experiencing the narrative.

In addition, the cultures and subcultures in which the producers and experiencers of narratives cognitively participate can constitute a largely coherent cognitive system that informs much of the conceptual structure, affective structure, presuppositions, values, and, in general, the “world-view” of those individuals. This culturally based cognitive system within the psychological organization of these individuals can affect or determine a set of narrative characteristics, and so it is an additionally appropriate target for the kind of analytic framework proposed here.

Finally, the surrounding physical world for humans is seldom—perhaps it intrinsically cannot be—simply a matter of autonomous physics. It can be argued, rather, that the characteristics that are attributed to it, at any level of organization, are entirely determined by the individual’s cognitive processing of the stimuli impinging on her and by the cognitively generated schemas that she imputes to it. To be sure, the ways that human cognition performs this processing and imputation reflect a biological evolution in which the organisms that preceded humans interacted with their environments. But, regardless of its origins, human cognition presently has a set of characteristics that shape everything pertaining to mind and behavior. To characterize the ways in which the surrounding world is represented in narrative (as well as in much else of human concern), we must look to the ways human cognition structures such representations, aside from whatever independent examinations we may make of the surrounding world in accordance with a notion of an autonomous reality. Thus, the “surrounding world” can now be understood more broadly to comprise not just the physical world, but also the conceptualization of it that arises from the cultural, producer, and experiencer portions of the full narrative context. Thus, once again, a cognitively based framework of analysis is called for.

1.3 Organization of the Framework

The present heuristic framework treats the narrative context in three divisions. These are the **domains**, the **strata**, and the **parameters**—presented in that order in sections 2, 3, and 4. In brief, the parameters are very general organizing principles, the strata are structural properties that pertain to narrative, and the domains are different areas within the total narrative context to which the first two sets of analytic categories can apply.

More specifically, some of the same analytic categories pertain to what can be heuristically treated as five areas within the total narrative context, as discussed earlier. Here termed “domains,” these are a narrative itself, the producer of a narrative, the experiencer of a narrative, the culture in which the narrative and its producer and experiencer are situated, and the surrounding spatiotemporal world. More accurately, such categories apply not only to the cognitive representations in a narrative, but also to the psychology of its producer and experiencer, as well as to our conceptual representation of the culture and the surrounding world.

The “strata” are the basic structuring subsystems of narrative. These subsystems progress concurrently in a coordinated way through the course of a narrative. One image for their operation might be the working of a polygraph machine in which separate styluses trace the concurrent functioning of several different coordinated subsystems of a single body’s physiology. The strata presented in section 3 are temporal structure, spatial structure, causal structure, and psychological structure. The term “strata” has been chosen for these structuring subsystems to suggest their parallel alignment but not to suggest any “vertical” ranking among them.

Certain general organizing principles can be observed to apply in common across the structural properties of the strata. These are here termed “parameters.” The following parameters are presented in section 4: the relating of one structure to another, relative quantity, degree of differentiation, combinatory structure, and assessment. Further, these parameters, together with others not addressed, appear to constitute the set of organizing principles that apply in common across all the major cognitive systems. As noted, these parameters are the author’s most elaborated account to date of such fundamental organizing principles. Though these principles are mostly exemplified with illustrations from narrative, the exposition of them is intended to be fully general. The reader less interested in narrative than in general cognitive properties may prefer to proceed directly to section 4.

Criteria are needed to help determine whether a particular analytic category should be understood as a stratum or as a parameter. Two criteria for assignment as a stratum are as follows: (1) The phenomenon fluctuates at the microlocal or local level of granularity in the temporal progression of a narrative, it is expected to vary in this way as an intrinsic characteristic of the nature of narrative, and the producer of the narrative intentionally controls for this variation. And (2), this phenomenon varies

in correlation with other comparably varying phenomena in an integrated way through the progression of the narrative.

Thus, “psychological structure” is treated below as a stratum because a producer typically varies such phenomena as a character’s mood or a tonal atmosphere in the course of a narrative. On the other hand, the category of, say, “aesthetics” would not generally count as a stratum, even though an experiencer can feel the beauty of a narrative to fluctuate rapidly as the narrative progresses. This is because a producer rarely induces successive portions of a narrative to vary as to their beauty—in general, he would probably wish it to be of uniformly great beauty. Accordingly, the category of aesthetics is understood as a parameter, not a stratum. However, such divisions cannot be rigid in a framework intended to accommodate changes and ranges of narrative practice. Thus, insofar as a producer intentionally varies the beauty of her narrative for the effects that that would have on the experiencer, to that extent the category of aesthetics would be functioning as an additional stratum.

Of course, a category’s assignment could be unclear or dual. For example, below, the category of “significance,” which includes the function served by a narrative element, is presented as a parameter because it is a type of organizing principle. But this category could alternatively or additionally have been presented as a stratum because such functions vary in the course of a narrative.

2 DOMAINS

The entire context in which a narrative can exist includes not only the narrative itself, but also the sentience that creates and experiences the narrative and that manifests the culture and appreciates the world in which the narrative is situated. As previously noted, this total context can be heuristically divided up into some five portions, here termed “domains.” These are the spatiotemporal physical world with all its (so-conceived) characteristics and properties; the culture or society with its presuppositions, conceptual and affective structuring, values, norms, and so on; the producer or producers of a narrative; the experiencer or experiencers of a narrative; and the narrative itself.

In the rest of this chapter, we will use terms for these domains that are general enough not to suggest solely written narrative. Thus, we refer to a **narrative** or a **work**, instead of, say, to a “book.” We refer to an

experiencer or an **addressee** of a narrative, instead of to a “reader.” And we call the creator of a narrative either its **producer** or its **author**, since the latter term already applies more generally than just to writers. Several of these terms, like “work” and “author,” do suggest narrowly construed narrative, but their intended reference is to broadly construed narrative.

Each of the five domains deserves extensive investigation. Here, though, we only sketch properties of the work itself, then proceed to consider selected interrelations between two or more of the domains.

2.1 The Domain of the Work

First, with respect to its composition, a work comprises both its physical characteristics and its contents. The work’s physical characteristics mostly involve aspects of its medium—for example, voices in air, print arrayed over the pages of a book, film projected onto a screen, or the performers and scenery on a stage for a play. The contents of a work are its cognition-related characteristics, encompassing both the affective and intellectual, and including the implicit/inferable as well as the explicit/overt. In a narrative, such contents comprise what is called the **story world**.

Next, through an assessment of different genres, we consider the factors that make a work a prototypical narrative. Narrative can be treated as a prototype phenomenon with a core that trails off in various directions. Three factors relevant to characterizing narratives are presented below. A particular value for each of these factors must be present for a narrative to be prototypical.

2.1.1 The Main Cognitive System Engaged The first factor is the particular type of cognitive system that is primarily engaged by the work. Most prototypical narratives involve the **ideational** system in the cognition of the experiencer. This is the system that establishes “concepts”—ideational, denotative components with referential content—and organizes them in a “conceptual structure.” Less prototypical are works that primarily address or engage other cognitive systems, such as a musical work that induces a sequence of moods or affective states in the listener, or a painting that induces in the viewer the class of responses associated with the perception of visual form.

The designation of the ideational system as primary for narrative is not intended to deny the incidental or even systematic evocation of emotion by works basically focused on ideation. Nor, on the other hand, should

we underestimate the degree of narrativity in nonprototypical works. For example, a symphony that progresses through a sequence of energetic and calm passages can evoke in the listener a sense of the unfolding of a coherent and meaningful succession of exciting and tranquil events. Nevertheless, ideation appears central for the prototype.

2.1.2 The Degree of Progression The second factor relevant to characterizing narrative is that of the Degree of Progression. We are probably innately built to have the experience about the world that it can consist of “events” that “occur” in “succession” through “time.” These, taken together, are what is here termed **progression**. This is not the only experience we can have about the world, but it is a fundamental one, and a work can evoke this particular category of experience. The more a work evokes this experience of progression, the closer it is to the narrative prototype.

The evocation of progression does not require the conveying of an actual succession of distinct events. The depiction of a single event—or even of a static scene—can serve as long as it is (designed to be) experienced as an excerpt from a progression, where a prior and/or subsequent sequence of events is implied or can be inferred.

A look at forms of nonprogression in a work can help set off the nature of progression. One prominent type of nonprogression involves the consideration of, or the evocation of, the constant characteristics that are present in some situation. This type can be in effect, for example, in a physics textbook describing the principles of magnetism, in a painting of still life, or in a section within a narrative that portrays a static scene.

A nonprogressional aspect of a work can be coupled with a progressional aspect. Consider, for example, a rhetorical political work that characterizes some societal situation. Here, what is nonprogressional is the synchronic situation that the work characterizes. But the progressional is the marshaling of emotions and the “and therefore” quality of the call to action arising from the description of the disliked state of affairs.

There is a certain property a work can have that primarily, if not determinately, evokes an experience of progression. A work with this property is so organized that the experiencer will cognize different parts out of the totality of the work at different times. This part-at-a-time effect can be achieved in two main ways, either or both of which may be operative: the work reveals different parts of itself through time, or the experiencer directs her attention to different parts of the work through time.

A work that reveals different parts of itself through time can be considered intrinsically **dynamic**. Examples of genres of this type are conversation, storytelling, a play, a film, a comedy routine, an improvisational theater performance, a mime performance, a religious ceremony, a dance performance, music, video art, and kinetic sculpture.⁴

Other works are intrinsically **static**, but the experiencer can interact with them by successively directing his attention to different parts of the whole. Static works may be classed into two groups on the basis of whether or not there is a cultural convention that prescribes a particular sequence in which attention is to be directed (even though it would be physically possible to direct one's attention elsewhere). Works that involve such a convention include a book, a cartoon strip, a sequential fresco, and an Australian aboriginal sand tracing depicting mythic treks.

Other types of static work are designed for random access by the experiencer's focus of attention. Examples of such works are a painting or tapestry with a number of different depicted components; a sculpture designed for viewing from different angles; an architectural structure that one can view from different interior and exterior points; and a geographic-sized art work, as by Cristo.

An interesting observation emerges from this analysis. Any old tapestry or painting that in effect depicts a story by showing a number of figures and activities together suggesting a succession of events, but one that the viewer must piece together through her own self-determined sequence of visual fixations, is as much an example of interactive fiction as any modern computer-based form.

The prototype requirement for narrative that it be progressional is abetted to the extent that a genre exhibits a certain one of the characteristics outlined above. This characteristic is that the genre's partwise succession is determined—whether by physical shifts of exposure or by conventions for directing attention—rather than being open to attentional random access.

2.1.3 The Degree of Coherence and Significance The third and final factor considered here is that of Coherence and Significance. A high degree of coherence and significance are required for the narrative prototype. Coherence is the property that the parts of the work fit together into a sensible whole. That is, relative to the average human conceptual system,

the parts of the work can be cognized together in a way that they constitute a higher-level entity that can be assessed as a unity. A work loses coherence to the extent that parts of the work are experienced as contradictory, irrelevant, or random with respect to each other. Significance (in its nonneutral sense) is the property that the parts and the whole of a work can be experienced as fulfilling some purpose or mission on the part of the author.

It can be seen why a prototypical narrative requires that the factor of coherence and significance be added to the previous two factors, and that all three factors have positive values. A “work” could be prototypical in being ideational and progressional but, without coherence and significance, it would hardly qualify as a narrative. An example of this combination of values is a diary or a chronicle, which recounts a succession of ideational events but lacks story character to the extent that the entries do not cohere. A collection of references to a succession of unrelated events—whose juxtaposition would thus not only lack coherence but also significance—would be even less of a narrative. On the other hand, to the extent that a diary is seen as someone’s personal history or “story,” or that a chronicle is seen as the history or “story” of, say, a kingdom, the recounted succession of events would be accorded a sense of coherence and purpose and so come closer to being experienced as a narrative.

2.2 Relations between the Domain of the Work and the Domains of the Culture and the World

The relation of the surrounding sociophysical world to the story world of a work—as we understand these—offers many research possibilities. One major issue is the particular aspects of the sociophysical world that are represented in, or imputed to, the story world, as against those aspects that are negated or changed. The narrative cognitive system appears to project much of the familiar world into a story world. Perhaps a fundamental projection is to treat a story world as if it were a real and exhaustive world in its own right, in the same way we conceptualize the familiar world around us. Further, we seem to systematically project most of the structures and particulars that we take to inform the surrounding world into the story world. Thus, most readers of Sherlock Holmes would imagine that time in Holmes’ world progressed unidirectionally at the same rate as in our world, and that Holmes used the toilet, even though such ideas are not directly represented in the stories.

In fact, an author can exploit this projection process in the addressee to engender certain effects. For example, the space-exploring narrator in a science fiction story might describe the strange inhabitants of a planet he has visited and how they destroyed themselves, where only the last lines in the story make it clear that those inhabitants were humans and the narrator is extraterrestrial. Here, the author relies on an addressee's propensity to project the familiar—in this case, our space exploration—into a story. The author then reverses these projections to bring about in the addressee the surprise of a shifted perspective, the shock of recognition, and the experience of ideational reorientation (see section 2.5 for author-addressee relations).

2.3 Relations between the Domains of the Work and of the Addressee

Another type of interrelationship is that between the domain of the work and the domain of the addressee. One relationship within this type consists of the degree of separation or intermingling of the two domains. In Western works, the norm is a lack of interaction or exchange between individuals in the story world and individual addressees. But some authors play around with the usually impermeable boundary between the story world and the addressee's world—for instance, by having characters in a play address audience members or by bringing audience members onto the stage. Some genres intrinsically bridge the two domains; an example would be the genre of the interactive street mime, who develops his or her brief narrative episodes in the course of interacting with individuals gathered around or passing by.

A further type of relationship across the domains of the work and the addressee involves the balance in the basis for comprehension. This balance occurs along a continuum that runs between the work and the addressee. On one end of this continuum, some narratives are assumed to be self-contained and self-explanatory. That is, all that the experiencer has to do is to progress through the narrative and all its relevant contents will be conveyed (if we presuppose the addressee's general prior familiarity with the form and medium of the narrative's genre). But other narrative types are assumed not to be sufficient in themselves and, rather, to rely on the addressee's prior familiarity with some portion of the story or story world. For example, the story of a classical ballet would generally be inaccessible to a naive viewer. Such a viewer would no doubt pick up on some aspects of the story but generally could not get the whole plot.

For this, the viewer must have knowledge of the story from outside the presentation of the work itself.

2.4 Relations between the Domains of the Author and of the Work

A further type of domain interrelationship is that between the author and the work. If the performers of an enacted work can be considered part of the domain of the work, those performers can be thought to bridge the domains by being co-authorial with the work's main author with respect to certain aspects of the work. These aspects are the ones determined by the performers' intonational emphases, timing, accompanying affect of the delivery, and so on—in short, the **interpretation**. Such aspects can be considered authorial because they affect the meaning and import of the work.

2.5 Relations between the Domains of the Author and of the Addressee

An author composes her narrative and sets its structural features largely on the basis of her assumptions about the way the addressee processes incoming content. For example, an author can set the rate at which story events take place relative to her assumptions about the effects that different rates will have on the average addressee. An author may slow the rate of events to engender a sense of calm in the addressee, or quicken the pace to engender a sense of excitement.

To have the intended effect, these authorial choices must be based on an assumed baseline for rate in the addressee. It is relative to such a baseline that deviations, such as “slow” or “fast” rate, are defined. Of course, such baselines differ across cultures and subcultures. If we are to correctly judge the intentions of an author from another culture or period, we must first assess the likely baseline of the intended addressees.

The author-addressee relation for narrative in general is often assimilated to a “conduit” model of communication. By this model, an author transmits a body of his ideational content to the addressee. By a related model that avoids the concept of transference, the author acts to evoke or replicate in the addressee a body of ideational and other phenomenological content equivalent to his own. This latter model is presented in section 1.1.1 of chapter II-6 as the core form of communication. But as section 1.1.2 of that chapter goes on to show, neither model—however well it may capture our naive or core sense of communication—adequately characterizes the narrative process. This is because an author often wants

to engender in the addressee certain conceptual or emotional responses that the author does not himself currently experience. Examples are suspense, surprise, interest, or hurt. To accomplish this, the author must orchestrate the selection, sequencing, and pacing of material in a way that is likely to cause the desired effects, given his understanding of the addressee's psychology.

2.6 Relations across the Domains of the Author, the Work, and the Addressee

We finally consider a type of interrelationship involving three domains, those of the author, the work, and the addressee. One relationship of this type pertains to the timing in which these domains come into play. To a large extent in the Western tradition, the author composes the work first and then the addressee experiences the work. This is the case with all precomposed writing, painting, dance, music, film, and so on. But other forms are composed "online" as the addressee is experiencing the work. This type of work is generally called **improvisational**. Examples occur in music (e.g., some jazz recently in the West, or classical Indian music as a whole), improvisational dance, and improvisational theater performances.

In another relationship of the current three-domain type, the addressees are co-authorial with the main author(s) of the work. For one example, if the performers of an improvisational comedy act are now considered to be the main authors of the work, then the addressees—that is, the audience members—become co-authorial when the performers ask them for suggestions on aspects of the piece to be improvised. Similarly, in some traditional storytelling or puppet shows for children, the children are asked to choose the way the story will end, or are told that they can demand a return to some point in the story to change certain events. More subtly and indirectly, one way that the audience-addressees can become co-authorial is where their online reactions to an ongoing performance influence the performers to alter their delivery, whether these performers are the main authors (as in improvisational comedy) or are themselves, in our sense, co-authorial with the playwright by virtue of their interpretations.

More recent forms of co-authoriality and co-composition include interactive forms in which the addressee makes choices with respect to the progression of the work. An example is interactive video, in which the work is composed with multiple alternatives at various nexuses. Here, the

user can choose the particular alternative that gets realized. Comparably, some modern books are written so as to allow the reader alternative routes for flipping back and forth within the text.

3 STRATA

We now turn to the next division of the narrative context: the **strata** that operate within and across domains. The strata can be thought of as the basic, or “ground-level,” structuring systems of a domain, prototypically so of the domain of the narrative work, but perhaps as readily so in the other domains of the total narrative context. The several strata are understood as being in effect coextensively. Thus, in the domain of the work, one can track several different strata of a narrative as one progresses through the narrative, noting the concurrence and correlations across these several systems. As noted earlier, an apt metaphor here is that of the polygraph, where each line represents one mode of activity taking place as the narrative progresses.

3.1 Temporal Structure

The stratum of **temporal structure**—that is, the dimension of time—uniquely has the property of “progression.” It has internal structure in the form of “events” and “textures.” It has contents such as “processes” and “activities” or “situations” and “circumstances.” And it has systematic correspondences with other narrative structures, as discussed in the following subsections.

3.1.1 Events One form of structure that can be applied to the temporal stratum is **conceptual partitioning**. By the operation of this cognitive process together with that of the **ascription of entityhood**, the human mind in perception or conception can extend a boundary around a portion of what would otherwise be a continuum of time, and ascribe to the excerpted contents within the boundary the property of being a single-unit entity. One category of such an entity is perceived or conceptualized as an **event**. This is a type of entity that includes within its boundary a continuous correlation between at least some portion of its identifying qualitative domain and some portion of the so-conceived temporal continuum—that is, of the progression of time. Such a correlation may rest on a primitive phenomenological experience that can be characterized

as **dynamism**—that is, a fundamental property or principle of activeness in the world. This experience is probably both foundational and universal in human cognition.

An event can vary with respect to a number of parameters, including many of those described in section 4. Thus, an event may be discrete, with a clear beginning and ending point, or it can be continuous, experienced as unbounded within the scope of attention that has been partitioned off by the cognitive processes of event formation. The contents of an event may change over the span of the event, in which case the event is active, constituting a process or activity. Or the contents of the event can remain unchanged over its span, in which case the event is static, constituting a situation or circumstance. An event can be global, spanning, for example, the full length of a narrative, or local, or even microlocal, thought of as covering just a point of time (e.g., a flash of light plus burst of sound that a story could present as a point-durational event). Further, one event could relate to another event along any of the relationship parameters described in section 4—for example, be embedded in it, alternate on a par with it, concurrently overlay it, or exhibit part-for-part correlations with it.

3.1.2 Temporal Textures A perhaps second-order aspect of temporal structure can be termed its **texture**. This consists of the patterns that various events show relative to the overall temporal progression and to each other. In our experience with the world around us, different temporal textures are exhibited. Thus, one kind of temporal texture is exhibited by a waterfall in which a myriad of quick minievents that involve gushing, cascading, spouting, streaming, and dripping merge into and emerge from each other. Another type of texture is exhibited by the gradual slow increase and differentiating change of a flower bud unfolding into full blossom (as we assemble this event in our memory from periodic viewings). And a third type of texture is exhibited by the medium-slow evenly pulsing rhythm of a throbbing headache. Similarly, a person can experience her whole life to have had one or another temporal texture, such as a stately cadence of successive discrete phases, or a helter-skelter jumble of overlapping events impinging on her. Comparably, a narrative can assert or describe a similar variety of temporal textures for any structure within the story world, or can itself exhibit them in its own pacing, or can evoke them in the addressee.⁵

3.1.3 The Relations of Narrative Time to Addressee Time Temporal structures can also be related across domains—for example, between a work and an addressee. A narrative work has the following two forms of temporal structure. **Story-world time** is the temporal progression that is attributed to the world that the narrative depicts and within which it sets its particular story. This progression through time is generally taken and supposed to be taken as the same as that of our everyday world, though some works play with that assumption. On the other hand, **story time** is the temporal character of what is selected for explicit depiction or implicit allusion to constitute the narrated story. **Addressee time** is the progression of the addressee's life in the course of the everyday world.

As a comparand against which to observe relevant deviations, we must establish a baseline relationship between story time and addressee time. Here, this baseline will be exact continuously coextensive, forwardly directed, same-rate progression. That is, for this baseline, time and events in the story progress with exactly the same continuity, direction/sequence, and rate as they do in the addressee's world as the addressee attends to the progression of the narrative. This set of correspondences can be termed **co-progression**. Although useful as a baseline, such co-progression is not the norm, and works that aim to achieve it are generally deemed experimental. Examples include quasi-documentary-style films that purport simply to leave the camera on as events before it unfold in their natural way. Such works include, for instance, Andy Warhol's (1969) film of a couple having sex and, perhaps more challenging to the viewer's attention, his (1964) film showing a stationary building through the course of a full day.

There are two main types of deviation from this baseline. In one type, story time deviates from co-progression with the addressee, who is directing steady attention at a conventional rate to the work. In the second type, the addressee deviates from this steady-paced processing.

Under the former type (with the addressee attending in the conventional way), story time can deviate in several ways. First, the story may present only certain discontinuous excerpts selected from the presumed continuous progression of events in the story world. Here, the addressee still progresses forward in story time, but only certain moments and scenes are selected for presentation, with the intervening periods gapped.

Another deviation from the baseline is when story time is out of sequence relative to addressee time. This would include backward jumps in the tale, as for flashbacks or returns from flash-forwards. As noted in section 4, such

temporal jumps can themselves form a higher-level pattern. An example from the story “A Free Night” (Costello et al. 1995) is the pattern of flashbacks that progressively zero in on a particular temporal point and the dread event that occupied it, where the flashbacks alternately overshoot and fall short of that point.

Still another series of narrative temporal characteristics can be attributed to deviations of the rate of story time from the baseline. First, a rate deviation can be steady, so that the rate of the narrative’s progression is, by some constant degree, slow or fast relative to the addressee’s experience of the rate of events in the everyday world around him. Second, the rate of story time can change, either slowing down or speeding up. Hill (1991) has observed that story time tends to slow down (and the density of detailing tends to increase) as the story approaches a critical or emotionally charged point. Third, story time can exhibit different rates at which this change in rate takes place—that is, it can be gradual or abrupt (or somewhere in between) in its slowing down or speeding up. An author can use a story’s abrupt shift from a slow to a fast pace to intensify in the addressee certain emotional responses, such as fright or excitement. This abrupt change in pace may be a recurrent component of certain other emotions, such as surprise.

Next we turn to situations where the addressee deviates from the baseline, in particular, from the baseline at which she directs steady attention in a forward progression and at a normative rate to the work. One category of deviation involves a discontinuity of attending. For example, a reader can put a book down and pick it up later. In this way, forms of discontinuity are introduced into the consciousness of the experiencer that have nothing to do with any discontinuities in the temporal progression of the story. Some works are intentionally constructed to involve addressee discontinuities. An example is the movie adventure *serial*. The very concept of a **cliff-hanger** at the end of one episode of a serial depends on the notion of addressee discontinuity.

Another category of addressee deviation pertains to forward sequencing. As an example of this, a reader may choose to skip around in a book rather than read it in the canonical sequence of the printed format. Some recent works directly address the reader’s ability to re-sequentialize the print by explicitly suggesting paths for skipping around.

A third category of addressee deviation involves the rate of attending. Thus, a reader can choose to read a written work faster or slower relative

to some norm of processing the text. Or a viewer could intentionally run a film faster or slower than its canonical speed.

One motivation for an addressee to undertake deviations from the baseline is to introduce certain additional controls over the effects that the work will have on his cognition. For example, by setting a book down, a reader can give himself a chance to digest and think over some events in a novel before reading on to the next events. By skipping around in a book, a reader could give herself a sense of the story's overall design and character. Or, by playing a video in slow motion, a viewer could give himself greater opportunity to process the details of the scenes.

It should be noted that many of the same relations just described between story time and addressee time can also occur within the story itself. For example, they can occur between the time characteristics of one part of the story and the time characteristics of the consciousness of a character or of the viewpoint of a deictic center. An interesting example is the science fiction story by Zelazny (1971) where the protagonist starts going backward in time through the last portion of his life before that "rewind" process stops and he resumes living forward in time. As this character rewinds, some aspect of his psyche is aware of this backward rewind, noting it as it happens. The viewpoint is located at that aspect of his psyche, and we, the reader, are watching through that viewpoint. From the perspective of this viewpoint, we are really moving forward in its own time awareness, even though the contents of what appears in that awareness is a rewind of what had once been forward progression. Further, that temporal advance of the viewpoint's time awareness itself has a second-order availability of all the deviations described above—it too can skip, think back and forth, and so on.

3.1.4 Relations of the Temporal Stratum to Other Narrative Structures

Only the stratum of time has the intrinsic property of "progression." But for any other structure within the total narrative context, particular related instantiations of that structure can be correlated with different points of the temporal stratum. Where such instantiations are different from each other, that structure has undergone **change**, and where they are the same, it has exhibited **stasis**.

Changes through time can involve the structure of space. In particular, changes in the location of material objects over time constitute the concept of **motion**. Changes through time can also involve psychological

structure. This includes changes in the cognition of a character or the atmosphere of the narrative over time. Some structural units must, by definition, change with time. Plot structure is one example.

Change through time is also particularly relevant in the domain of the addressee, in whom the progression of a narrative engenders a continually updated model of the narrative's content and a succession of psychological states consequent on the updates.

3.2 Spatial Structure

The stratum of **spatial structure** exhibits two main subsystems. One subsystem consists of all the schematic delineations that can be conceptualized as existing in any volume of space. This subsystem can be thought of as a matrix or framework that contains and localizes. Static concepts relevant to it include **region** and **location**, and dynamic concepts include **path** and **placement**.

The second subsystem consists of the configurations and interrelationships of material occupying a volume of the first subsystem. The second subsystem is thought of more as the contents of space. Such contents can constitute an **object**—a portion of material conceptualized as having a boundary around it as an intrinsic aspect of its identity and makeup—or a **mass**, conceptualized as having no boundaries intrinsic to its identity and makeup. An analogy may exist conceptually between material as the contents of spatial structure and events as the contents of temporal structure. Both types of contents exhibit a similar array of structural properties, such as being either bounded or unbounded.

The material subsystem of space can bear certain static relations to the matrix subsystem of space. With respect to relations that it can exhibit directly, material can, for example, **occupy** a region and be **situated** at a location.

Spatial properties that material entities exhibit in themselves or with respect to each other can also be related to schematic delineations of the containing framework. We can see three forms of this. First are the spatial properties that a single object or mass of material exhibits in itself. Examples are the contour of the entity's external boundary that determines its shape, like the shape of a doughnut or a skyline, and its internal structure—for instance, the interior disposition of a solid or a latticework. Second are the spatial properties that one material entity can have with respect to another. These include geometric relations, such as those specified by English prepositions like the ones in *X is near/in/on Y*, as well

as ones specified more elaborately. And third are the spatial properties that a set of material entities can exhibit as an ensemble. These include their “arrangement,” potentially to be conceptualized as a Gestalt of geometric patterning—for example, as in a cluster or a sheaf. (An ensemble whose multiplex composition has been backgrounded can be conceptualized spatially in the same way as a single object or mass.)

The material subsystem of space can also bear certain dynamic relations to the matrix subsystem of space. With respect to relations that it can exhibit directly, material can, for example, **move** through a region or along a path, or exhibit a **transposition** from one location to another. Spatial properties that material entities exhibit in themselves or with respect to each other can also be related to schematic delineations of the containing framework in the same three ways as before. Thus, first, a single material entity can exhibit dynamic spatial properties in itself. Examples include change of shape, like twisting or swelling. Second, one entity can execute various paths relative to another entity. Examples are the paths represented by the English prepositions in *X moved toward/past/through Y*. Third, a set or ensemble of entities can alter their arrangement. Examples of this are scattering and converging.⁶

As we conceptualize it, the second subsystem, the contents of spatial structure, need not be limited to physical matter but can generalize to more abstract forms. For example, in a narrative, we can apply all our usual conceptions of spatial relations to understanding the location and motion of a viewpoint, the angle and direction of our sighting from that viewpoint to an entity to which we are attending, and the size and shape of the zone of this attentional projection.

Spatial structure can also vary along most of the parameters outlined in section 4. For example, it can exhibit hierarchical embedding, as when we see, or when a narrative describes, a restaurant as a containing structure within which are situated in a particular pattern of arrangement a set of tables, chairs, and people, each of which exhibits its own shape and internal disposition. And the properties of spatial structure can pertain to scope of magnitude from the microlocal to the global—for instance, from a ladybug on the palm of a character in a story, to that character’s geographic-scale travels.

This last case can be given an extended illustration. The O. Henry (1903) story about a safecracker at one point has this character look and move about his old apartment within local scope. But it also globally depicts this character first as localized in prison, then leaving there and

going to a nearby restaurant, then traveling to another town to get to his old apartment, then traveling to some relatively distant town where he settles down and remains for the rest of his life. The geometric pattern of this trek is significant to the import of the story, metaphorically correlating with phases of the character's psychological development. These correlations appear to be between the prison and his old way of life; the restaurant and his transition to independence and autonomy, where his actions are determined by his choices, not by orders given to him; the old apartment and his closing out his previous life (except that he retrieves his old safe-cracking tools); and, finally the new town and his new life, where the town is distant in the same way that his new way of life is distant from his old one.

Spatial structure can also pertain to cross-domain relations. One such relation is a dis correspondence between the familiar physical world and the story world, as where narrative objects and characters exhibit novel sizes, size changes, or embedding relations. Examples are seen in *Alice in Wonderland* or the film *Fantastic Voyage* (Fleischer 1966) with its miniaturized humans sailing through the bloodstream of a normal-sized person.

One may also wish to extend the stratum of spatial structure to the domain of the addressee. Thus, a playwright or director may aim to evoke a particular effect in the addressees by arranging the audience in one configuration or another relative to the performance area, as with theater in the round. Or he may partially merge the domains of the work and of the audience, as by having the actors pass through the audience.

3.3 Causal Structure

The stratum of **causal structure** can in the first instance be understood to include any so-conceived physics of matter and energy in space and time. The stratum is thus intended to cover any conceptual system of principles that govern or of patterns that characterize the behavior of entities. This stratum therefore applies not only to modern scientific physics, but also to the physics of classical and medieval science, to the physical lore of traditional cultures, to the naive physics in the mental models of untutored individuals, to "cartoon physics," to science fiction story physics, and to the causal conditions set up in stories in the fantasy and magic genre.

In addition to such nonsentient causal properties, the present stratum can be understood to extend as well to those aspects of the psychological stratum that have causal effect. Such aspects include motivation, desire, volition, and intention.

Systems of causal structure may thus address purely material issues, such as whether matter has spatiotemporal continuity or can instead appear, disappear, and translocate; or whether one entity can pass through another entity or occupy its location at the same time. Or these systems may address psychomaterial issues such as whether a sentient entity's volitional will can directly affect the course of events; or whether some supernatural power can exercise this form of will. Or the systems can address purely psychological issues, such as whether a particular psychological state in one individual can engender another particular state in another individual (e.g., self-pity arousing disgust). Narrative traditions can differ as to what they accept as causal agencies—for example, whether a ghost or a deity can affect the course of events.

One system that plays a great role in conceptions of both physical and psychological causality is that of force dynamics (see chapter I-7). This is a system of concepts pertaining to an entity's intrinsic tendency toward rest or activity, another entity's opposition to that tendency, resistance to such opposition, and the overcoming of such resistance. This system further organizes the concepts of forcing, preventing, and letting, as well as of helping, hindering, and acting in vain.

Via force dynamics, we can see that the stratum of causal structure can extend as well to ideational structure—for example, that of a narrative's plot. The force-dynamic system can characterize such relationships as two entities opposing each other, a shift in the balance of strength between the entities, and an eventual overcoming of one entity by the other. This system can then apply as well to such plot patterns as a conflict between any two factors and an eventual resolution of the conflict.

3.4 Psychological Structure

Much that is psychological can have particular associations with elements in—or particular distributions over—the spatial, temporal, and causal strata. Nevertheless, psychology can be regarded as constituting a distinct stratum by itself, with its own essential quiddity and governing principles. We consider this stratum of **psychological structure** in two ways: with respect to the categories of its organization and with respect to the levels of its organization.

3.4.1 Categories of Psychological Structure The psychological stratum encompasses all the possible contents of cognition. Though cognition as yet has no definitive divisions, some heuristic categories can be ascribed to

it. We next suggest six such categories, as well as a sizable sampling of cognitive phenomena included within the categories, to underscore the variety. Each cognitive phenomenon listed is intended to cover the range from good to poor functioning. For example, “accessibility to consciousness” also includes poor access, thus covering additional phenomena such as preconsciousness, repression, and so on, while “memory” also includes forgetting. These categories and their members pertain to the psychological structure of any so-conceived cognitive entity, a typology of which is presented below in section 3.4.2. The relationship of any of these categories or their members to the “cognitive systems” adduced in the introduction is a heuristic matter to be worked on in the course of time.

The first heuristic psychological category includes the “foundational” cognitive systems that underlie or mediate the other psychological functions. It includes consciousness and the accessibility of other cognitive systems to consciousness, attention, perspective, perception, memory, and motor control.

What may be considered a category of “executive” functions includes agency, intention, volition, goal pursuit, planning, and decision.

A third category consisting of the “ideational” or “intellective” functions and systems would include thought, concepts, and conceptualizations; beliefs, knowledge, and explanatory understanding; presuppositions and unnoticed assumptions; opinion and attitude; worldview; the assessment of familiarity, normativity, probability, and veridicality; and reasoning, inferencing, and a sense of logic.

A further “affective” category would include emotions and mood states, motivations and drives, desires and wishes, and aesthetic responses.

An additional category of “values” would include ethics, morals, and priorities—in general, ascriptions along the dimensions of goodness and importance.

Finally, a category of “composite” or “overall” psychological phenomena would include personality, temperament, and character.

These suggestive categories are not mutually exclusive—but largely combine—comparable features. For example, regret and worry are fully emotive but are based on an often-detailed intellective assessment of circumstances.

Perspective Point We single out one member of a psychological category, that of **perspective point**, for special attention because of its central role in narrative. Perspective point is treated here for its substance, later

for its function as a kind of individual, and still later for the properties governing its behavior through time.

We adopt a notion of perspective point that involves both location and assessment. A perspective point has a location either in physical space and time or in some conceptual model of space and time. A conceptual model of this sort is not limited just to an imagistic representation of physical space and time, but can be any form of “abstract space and time.” Examples of the latter might be “knowledge space” or “taste space”—the experiential and conceptual domain of all the flavors that an individual can cognize—together with the kinds of timelike progressions that such spaces can exhibit.

In addition, some assessing faculty of some sentient entity is situated at the location understood as a perspective point. This assessing faculty is typically a perceptual system, especially that of vision, but can also comprise a sentient entity’s system of beliefs and opinions, among various possibilities. The assessment system situated at the perspective point location assesses properties of phenomena situated at other locations within the same space. The criterial factor in the notion of perspective point is that this assessment is based on the particular characteristics and patterns of characteristics of the external phenomena that are able to arrive at the assessing system’s location—or that the assessing system can access—because of their relative positioning within the space.

There is no intrinsic psychological requirement that a perspectival location constitute a minimal “point.” In principle, it might be a region, or indeed a set of points or regions. Though the single point is no doubt the prototypical case, the other possibilities need exploration.

It should be noted that the entire characterization here in terms of a perspective point location in a space is inevitably founded on our visual experience. In this experience, our eyes occupy one location and are felt either to look out over the surrounding physical space from that location or, conversely, to receive stimuli from the surrounding physical space that converge on the location of our eyes. This perceptual experience proves a powerful model that structures our experience also with nonperceptual cognitive systems. Consider, for example, such non-perception-based forms of cognition as having an opinion or holding a particular ideological belief. Close analysis may show that the cognitive structure and process exhibited by such forms are not analogous to the ones just associated with perception. In particular, they may not involve features from external phenomena converging on a perspective point location or, conversely,

probes projecting out from such a location. Opinion and ideology may involve structure and process other than such convergence or projection—for example, an interactive network of interrelations, or a “filter” that allows some concepts but not others to pass, and so on. Nevertheless, much of our phenomenology—including that pertaining to having an opinion or an ideology—can be experienced as involving locatedness at some point of a space from which one assesses external phenomena. This experience thus presumably underlies expressions referring to opinion such as *from my point of view* and *in my view*.

3.4.2 Levels of Psychological Structure Our objective judgment may hold that all psychological phenomena are necessarily wedded only to individual sentient biological organisms. But our spontaneous conceptions about psychological phenomena are less limited. In fact, we typically seem to attribute psychological phenomena to three main levels of organization. These are the individual, the group or society, and the atmosphere. We consider each of these in turn.

3.4.2.1 *The Individual* The level of organization of the **individual** is presumably the most prototypical for psychological structure. An individual is what can be conceptualized as a sentient, cognitive entity in which all or some of the set of psychological phenomena outlined above are localized together. The crucial notions for the concept of “individual” are the sentience of the entity and the co-localization of the psychological phenomena in that entity. In addition, the psychological characteristics localized within a single individual are also usually interrelated with each other so as to constitute a form of Gestalt unity. However, this property of integrated psychological unity is subject to variation, as in the presentation of an individual as having incompatible attitudes, or even distinct “selves” in the case of “split” or “multiple” personalities.”

The prototypical individual is any human and, secondarily, any sentient animal. Within the immediate narrative context, the prototype individuals are the author and the addressee outside the story world, and the narrator and characters inside the story world. An individual, of course, need not be a human or animal, or even a biological organism. Any so-posited entity treated as if psychological properties are concentrated within it can serve the function, including inanimate objects, ghosts, extraterrestrials, and so on, as well as such abstractions as the perspective point of the deictic center.

Individual psychological structure can exhibit most of the parameters of section 4. Thus, a character's conception or mood can be explicit or implicit, clear or vague. It can embed within, alternate with, overlay, or correlate with another conception or mood. It can extend globally or locally. And it can change through time (for example, a character in a novel can evolve). As an example of local changes of psychological state through time that variously involve alternation, overlap, and so forth, we can track the protagonist in "A Free Night" through her evening at home as her thoughts and feelings variously comprise terror, regret, relief, reverie, and here-and-now awareness (Costello et al. 1995).

Narrative Perspective Point as a Type of Individual As indicated above, a narrative perspective point may be understood as a kind of individual with psychological structure—that is, as a sentient cognitive entity with characterological/personality, psychoaffective, and worldview characteristics, among other psychological properties. It may be that a perspective point typically is defective, at least in some works, as to the psychological properties that appear in it, perhaps evincing primarily the property of perception. But, in some works, or by other analyses, the viewpoint will also include attitude and affect.

For example, consider a line like the following, which might come from a story when it is depicting an ocean scene with no story characters present: "Its body glistening, the porpoise leapt gracefully out of the water, rose majestically into the air, executed a beautiful somersault at the top of its arc, and dove back into the water barely perturbing the surface." Such a scene is presumably being viewed from the vantage of a perspective point located above the ocean surface and near the porpoise. This perspective does include perception, as in the characterization of the events that took place and in the use of the word "glistening." But it also includes evaluation, as in the use of the word "gracefully," it includes attitude and affect in the use of the words "majestically" and "beautiful," and it exhibits expectations in its use of the word "barely," which alludes to a deviation from norms. These additional inclusions are all elements of psychological structure beyond the merely perceptual, and the perspective point is exhibiting them here.

3.4.2.2 The Group/Society Another level of organization to which psychological structure can be attributed is that of the group or of a society composed of first-level individuals. There is a principal division between concepts of group psychology. In one class of concepts, the group is a

single superorganism, a metaentity existing in its own right at an emergent level, whose psychological manifestations exist only at that higher level. A second class of concepts regards a group as a collectivity whose psychological characteristics are based on the cognition of its individual members and their interrelations. Concepts of these interrelationships themselves fall into several types. In one type, the psychologies of the individuals in a group are **in concert**. That is, they are the same in some relevant respect, so that the comparable psychological characteristic of the whole group is in this respect simply an aggregation of the individual manifestations. In another type, the individuals' psychological characteristics are **complementary** in some respect, and the individuals may **cooperate** in regard to their differences for a groupwide effect that none of the individuals could exhibit alone. In a third type, the psychological characteristics of the individuals are **in conflict** in some respect, so that the psychological pattern at the group level can include contradictions or reflect conquests, defeats, and resolutions across individuals.

These various concepts about psychology at the group level can be found among the views of laypeople as well as of specialists. Thus, many in the public regularly make characterological attributions of the metaentity type or of the in-concert type to various sociological categories, such as those of gender, race, ethnic group, class, or nation. Comparably, some sociologists and anthropologists with theories of the metaentity type ascribe such properties as worldview and affect style to a culture as a whole or to the conceptually abstracted medium within which individuals interact. Examples are "practice theory" and "conversational analysis." On the other hand, work on "distributed cognition" (e.g., Hutchins 1991) adopts the complementary and cooperative concept, where various members of a team or of a society have partially complementary forms of expertise, all needed in interaction for overall goals to succeed.

Narrative exhibits much group-level psychology, including certain special forms. One such form is the classical Greek chorus, often understood to express the collective moral position of the society, the normative questions of the average member of the society, and the like. Another example is the presentation of a succession of viewpoints expressed by individuals that make up some group, as a device to show the variety or the uniformity of the views of that portion of society. A version of this is seen in Thornton Wilder's play "Our Town."⁷

Note that a plural number of individuals need not necessarily be treated as a group but can also be treated at the level of the individual. Thus, the

psychological manifestations of the individuals in any portion of a narrative, including the whole story, can be regarded either at the group level as a collective interaction, or at the individual level as a distribution and succession of separate individuals.

3.4.2.3 *The Atmosphere* Finally, we consider the third level of psychological structure, that of **atmosphere**. Atmosphere is the experience we can have that certain psychological characteristics pervade some portion of ambient space, or some physically defined region, or some event. Such an experience is thus different from the experience that psychological characteristics are localized within a particular material object at the individual level or associated with a set of such objects at the group level.

Now, our objective judgment may hold that any atmosphere felt as associated with some region or event is merely a projection of feelings that arise in ourselves on perceiving or considering that region or event. Nevertheless, some part of our cognition seems spontaneously to attribute such an atmosphere to that region or event as an intrinsic property of it or as inhering in it.

The psychological character of an atmosphere generally involves the ideational category of psychological structure—with such properties as thoughts, opinions, choice, and the like—less than it involves the affective category. And within the affective category the psychological character of atmosphere mainly involves mood states. Examples of such mood states that might be experienced in association with a region or event are menace, light cheeriness, horror, coziness, protective security, disgusting squalor, luxurious opulence, and numinous spirituality.

Our cognitive capacity to experience atmospheric characteristics in relation to our surroundings is probably innate and largely automatic. Accordingly, the occurrence and product of its functioning within us is barely amenable to internal conscious control. Hence, atmosphere is experienced as a regular concomitant of our environment as we move through it or look about it. In a sense, everything contributes to our current sense of atmosphere. It thus seems to be unavoidable that particular combinations of our sensory surroundings will be processed by the atmosphere-related portions of our cognition so as to generate some affective complex in association with those surroundings.⁸

Given this view of atmosphere, we can note that those in charge of particular venues often employ their understanding—whether intuitive or theoretical—of the ways physical arrangements affect people's experience

of atmosphere. They regularly orchestrate and outfit their domains with care so as to engender particular desired senses of atmosphere in other people. Thus, city officials may outfit parks, streets, and buildings to engender a certain sense of atmosphere in the citizenry; shopkeepers establish the decor of their stores in this way for their clientele; and householders arrange their homes in this way for themselves and their families. Hence, a proprietor opening a tea salon and a proprietor opening a sports bar will make very different choices as to furniture, spatial arrangement, color, music, servers, the manner that the servers are required to affect, neighborhood location, and so on.

Authors regularly take pains to orchestrate the operations of our innate capacity so that we will experience particular atmospheres in association with a work. Films, for example, not only shape their visual material to this end, but also regularly use background music to engender the experience of a certain atmosphere as pervading a scene. Hence, the same scene could be apprehended in two different ways with different accompanying music—for instance, as eerily threatening or as lightly humorous. A written work can accomplish similar atmospheric effects by the choice of language and the orchestration of ideas. For example, Kahane (1996) shows how Woolf (1948) establishes an atmosphere of sanity-threatening fractionation through the use of periodic, almost subliminal allusions to menace (e.g., one reference to Bluebeard) and of startling, seemingly disjunct jumps in topic and scene.

4 PARAMETERS

The five **general parameters** presented below, as well as the **particular parameters** that they include, are generic cognitive organizing principles that apply across all the strata. And, as noted earlier, these organizing principles appear to apply not only to such narrative structures, but also to structures across a range of cognitive systems. The parameters presented here can be augmented by a number of those presented in chapter I-1, as well as in other chapters. Together, all these parameters constitute our initial outline of conceptual structure in human cognition in general.

4.1 The Relating of One Structure to Another

The wholes or parts of strata, as well as of domains, can bear certain relations to each other. The relation of one such structure to another

structure can fall along certain parameters. A selection of such parameters are considered in this section.

One parameter of this sort is that of **mereology**, which involves the mereological relationship of one structure to another. This parameter is named for the mathematical theory most simply characterized as treating part-whole relationships, but the concepts and terminology presented below were developed separately in a way deemed relevant to language structure. For simple purposes, four mereological relationships should be distinguished. One relationship is **inclusion**, where one structure is wholly located inside a second structure. Another relationship is **coextension**, where one structure occupies the same region as a second structure. A further relationship is **partial overlap**, where part of one structure is coextensive with part of a second structure but where the rest of the two structures occupy different regions. And the final relationship is **separation**, where one structure is wholly located outside a second structure. Below, we consider the relationships of inclusion and coextension in greater detail.

One structure can be related to another structure by means of further parameters. One is the parameter of **parity**. In accordance with this parameter, two structures are conceptualized either as representing two different entities or as representing the same entity. This parameter can be applied, for example, to the first-mentioned mereological relation of inclusion, in which one structure is included within another structure. Under the dual-entity conceptualization, the first structure is separately inserted or embedded within the second structure. Under the single-entity conceptualization, the first structure is a proper part of the second structure, which is the whole. Comparably, the parameter of parity can be applied to the mereological relation of coextension, in which two structures, with respect to some characteristic of theirs, occupy the same region. Here, under the dual-entity conceptualization, the two structures can be understood to interpenetrate or to co-occur, while under the single-entity conceptualization, the two structures are understood as being equal or identical. In a similar way, the parameter of parity can be applied to the fourth-mentioned mereological relation of separation, in which two structures stand wholly apart. Here, under the dual-entity conceptualization, the two structures are two distinct entities, whereas under the single-entity conceptualization, they together constitute a single discontinuous entity. The parameter of parity figures prominently in the analysis below.

One further parameter is that of **equipotence**. In accordance with this parameter, one structure can either be equivalent in priority or privilege to another structure or, alternatively, one structure can be the main one while another structure is ancillary to it. The parameter of equipotence appears below in conjunction with coextension.

4.1.1 Inclusion The relation of inclusion holds between structure A and structure B if A occurs wholly within the region occupied by B. This inclusion relation has two forms, that of **embedding** and that of a **part-whole** relationship, in accordance with whether A and B are understood in terms of the dual-entity conceptualization of parity or of the single-entity conceptualization. Thus, if A and B are held to constitute two different entities, then A is embedded within B. But if A and B are held to comprise a single entity, then A is a part of B. However, it is not always clear which of these two forms is in effect.

An inclusion relationship is often evident between two structures within a particular stratum in narratives. Thus, within the stratum of spatial structure, an obvious example of multiple inclusions in a story is where a character's location is understood as involving a particular city within the nation, a particular street in the city, a particular house on the street, and a particular room in the house. A similar form of inclusion is found within the stratum of temporal structure. In fact, the traditional organization of plays is built around such concentric inclusions, where each particular incident occurs within a particular "scene," which takes place within a certain "act," which in turn occurs within the overall temporal scope of the play as a whole.

Though less clearcut, inclusions can occur not only within a stratum, but also across strata. For example, a reader's attention could first be within the physical spatial structure of the story world, and then enter psychological structure by entering the mental world of one of the characters who is located at some point within that space. This mental world will have its own structure including aspects of space, but it is still understood as embedded within the spatial structure of the story world as a whole. Such an entrance into a mental world is not understood in the same way as, say, a shift to some new location or scene that is otherwise part of the spatial structure of the story world. The mental world the reader has entered is more like some subrealm opened up at a particular location within the main fabric of story space.

An inclusion relation can also be found within a domain. For example, within the domain of the work, one story can be embedded within another as when Shakespeare's *Hamlet* embeds a play within itself, each with its own story world. Multiple inclusions of this sort are exhibited by the film *Saragossa Manuscript* (Has 1965). The main organizing principle of this film is the repeated nesting of one story within another. In the first and largest portion of the film, each story includes a mysterious incident or aspect that unfolds out into another story that seemingly provides some background to the prior story. By the time the experiencer is wondering if this procedure will continue indefinitely and whether he can keep track of all the unfolding mysteries, the end portion of the film arrives, which zips back through all the nested stories in reverse order, revealing the mysterious events to have all had pedestrian explanations.

Abstraction The "part-whole" form of the inclusion relation is central to the relation of **abstraction**. One structure bears the relation of abstraction to a second structure within the narrative context if it is a copy of a relevant selection of parts of the second structure.

Perhaps the main manifestation of this relation is the way the contents of a story within the domain of the work can be understood as abstracted from the far richer particulars of the sociocultural and physical domains, including the human psyche and human behavior. Hence, a story typically does not act like a video camera set up to record all the particulars occurring within its frame and span of operation. Moreover, the abstraction process is prototypically not haphazard but selects relevant aspects—ones understood as structural and of concern.

The process of relevant part selection is a regular aspect of our cognitive activity, quite apart from the authorial process of copying such a selection for presentation in a work. This is seen in the fact that the cognitive structures in terms of which we experience and categorize do not much correspond to the texture of everyday life. Consider, for example, such conceptual/affective/actional constructs as jealousy, bravery, and child-rearing. In the everyday world, the components out of which such constructs are built are dispersed through time and space, there is much intervening material of no direct relevance, typical components of the construct may be absent and atypical ones present, and so on. Yet our cognitive processing succeeds in forming the constructs out of the raw experiential material by culling the relevant components, gathering them together, and organizing them into the target patterns. An author may tap

into such cognitive constructs as these for use as structures in the narrative. That is, the abstractions incorporated in a story generally correspond to conceptual abstractions already present and regularly generated in our cognition.

The same process of relevant part selection can be observed in the visual medium. For example, cartoons and caricatures are abstractions from the full detail of the physical objects that they represent. Further, in certain respects, the features that they abstract may well bear some of the same relationships to the original as just discussed. Thus, those features tend to comprise the visual structure of aspects of the original that are of concern to us.

It should be noted that abstraction is not the only cognitive operation that we perform on observed phenomena and then replicate for a literary or iconographic work. A complementary cognitive process is that of imposition. We often impose a preconceived schema onto our understanding of the world by deforming otherwise observable phenomena so that they fit the schema. Such cognitive constructs are also copied for representation in a work.

4.1.2 Coextension Two structures are coextensive with each other if they are manifested over the same region of some stratum.

Dual-Entity Type: Concurrence (with Respect to Time) We first consider such coextension under the dual-entity conceptualization of parity—that is, where the two structures are considered distinct from each other. Where the stratum in which the two structures relate is that of temporal structure, coextension has the specific designation of **concurrence**.

One structure that is concurrent with another can be taken to be equipotent with it or, instead, to relate to it as an ancillary form to a main form. When coextension is combined in this way with nonequipotence, such a structure can be termed an **overlay**. To illustrate, the work may have an overall atmosphere of, say, menace or inexorable doom, while subparts of the story will be light. This lightness can be experienced as an overlay on a subterranean impending menace whose presence does not fully disappear during the light interlude. Other examples of overlay are where a narrative section is intended to be taken as telling two or more stories at once on different levels, as, say, a parable with its metaphoric interpretation resting on its literal interpretation, or where the author has two concurrent purposes, say, to educate while entertaining. Often, per-

haps, an overlay structure is more abstract, while the substrate structure is more concrete.

Single-Entity Type: Equality We next consider coextension under the single-entity conceptualization of parity—that is, where the two structures are considered identical to each other. This form of coextension will be termed **equality**. Thus, two structures are in a relation of equality if they are considered to be two manifestations of a single entity in different venues.

Several forms of equality are well recognized where such a single entity is an individual within the domains of the work, the author, and/or the addressee. To discuss this, some distinctions need to be established. We can say that the author of a narrative work, at a first level, typically creates an **outer story world**. This outer story world, in turn, consists of a **narrator**, a **narratee**, and an **inner story world**. The narrator is an apparent individual that does the storytelling. The narratee is an apparent individual to whom the narrator recounts the story. And the inner story world is the story that the narrator recounts.

Forms of equality, then, include the following: Where the author is equated with the narrator, the inner story is understood to represent events that the author has witnessed or believes. Where the narrator is overtly equated with one of the characters in the inner story world, the narrator is a **participant** in the inner story. In that case, nonquoted commentaries may include the pronoun *I*. If there is no such identification, the pronoun *I* typically does not appear outside of quotes, and the narrator is understood as a causally noninvolved observer. Where there is a triune identification of the author, the narrator, and a character of the inner story, the work is understood to be **autobiographical** to the extent that the author is not thought to be dissembling. Where the narratee within the outer story world is intended to be overtly equated with the addressee outside the work, the nonquoted commentary may include the pronoun *you* (or such formulations as *The reader may now be thinking that . . .*). Otherwise, this pronoun, or comparable formulations, are typically not used, and the outer addressee can have the experience of listening in as the narrator recounts the story to the fictional narratee (although the reader may also feel that the narrator is telling the story directly to her, even without the use of forms of direct address).

The relation of equality also applies to structures across the domain of the work and the domain of the surrounding world. We first look at the case where such structures comprise individuals and events. To the extent

that a character of the inner story is equated with an individual in the domain of the external world other than the author, the work is understood to be **biographical**. To the extent that the events as well as the individuals depicted in a work are identified with events and individuals in the external world, that work is considered to be **historical** or **documentary**. Conversely, to the extent that it is assumed that there is no such equivalence, the work is considered to be **fiction**. Works can exhibit various mixtures of equatability and nonequatability of events and individuals between the story world and the external world, yielding such hybrids as historical novels and docudramas.

We next consider equality between the attitudes or worldview that an author expresses in a work and the history of attitudes or worldview in the surrounding world. A work whose worldview coincides with that of its contemporary culture is understood as **modern** for its time, or, if the work appears in the present day, it is simply “modern.” A work whose worldview coincides not with that of its contemporary culture but with that of a later period is understood to be **ahead of its time**, while a work whose worldview coincides with that of an earlier period is judged to be conservative or **backward-looking** for its time. To the extent that the worldview of an earlier work coincides solely with that of its contemporary period, it is said to be **dated**, whereas to the extent that its worldview coincides with aspects of the worldview found at other periods and the present, it is considered **timeless** or **universal**.

We next consider equality between the era represented in the story world of a work and the history of different eras in the surrounding world. If the era represented in a work coincides with the era during which it was created, the work is **contemporary** with its time, or, if appearing in the present day, it is simply “contemporary.” If the represented era is coincident with an earlier era, the work is a **period piece** or a **historical work** (using a second sense of the word “history”). And if coincident with a relatively subsequent time, the work is **futurist**.

The conceptual equating of entities is a well-studied issue in linguistics. Thus, “co-reference” is the mention of the same entity in two different locations in a discourse. And “deixis” is the equating of an entity being referred to and an entity taking part in the speech event. We can elaborate on one way to regard deixis. Consider the sentence *I ate snails for breakfast* with its deictic pronoun *I*. The utterance of this sentence can be viewed as representing two distinct events separated in time. One event

comprises a particular person executing the current speech act and can in effect be expressed as *A speaker is uttering this sentence*. The other is an earlier event comprising a particular person having breakfast that can be expressed as *A person ate snails for breakfast*. Separate filmstrips could record these two events, each of which includes a person who engages in its activity. By its use of the form *I*, the example sentence indicates that the person engaged in the utterance event is to be equated with the person engaged in the breakfast event. That is, they are separate instantiations of the same individual. Deixis is thus an equality relation between two narrative structural units.

4.1.3 Multipart Relations So far in this section, we have presented ways one structure as a whole can relate to another structure as a whole. In addition, though, the parts of one structure can be related severally to the parts of another structure. In one such relation, that of **correlation**, the two sets of parts are aligned in correspondence. In another such relation, that of **interlocking**, the two sets of parts interdigitate.

Correlation One example of correlation is the existence of corresponding points across a set of different strata in a narrative. This form of correlation is in fact the same as the foundational basis of the present analytic system, namely, the polygraph notion in which the different strata of a narrative are linked in their progression. Another example of correlation is that of different media or genres. This occurs, for example, in the synchronizing of dialogue, image, and music in a film or in a multimedia presentation. Another example might be the correlation of the progression in the contents of a story world with the succession of components of the physical medium of the work, as where a story is told by a series of poems with each poem appearing self-contained on each successive page of a book.

Interlocking The main form of interlocking evident in narrative is manifested over a temporal progression. This form can be termed **alternation**. In this form, the “parts” of each related structure are separate instantiations of that structure. The instantiations of each structure do not occur together, but one at a time, and by alternate turns.

Alternation can occur over any scope or scale. Thus, an alternation between the points of view of two different characters in a narrative can take place every other sentence, as in an exchange of dialogue, or every other chapter, as when a narrative presents the progress of a story by

turns from the perspectives of the different characters. Other structures frequently alternated in a narrative are different spatial locations, different points in time (as with recurrent flashbacks), and different subplots or side stories.

The following is an example of sentence-scope alternation within the story “It Had Wings,” by Gurganus (1991). What alternates is the location of the perspective point and the direction of the gaze from it that is adopted by a single character. The character is an angel addressing an old woman into whose garden he has fallen. First shown are the lines he speaks, indented by different amounts depending on the viewpoint and the view that he adopts. Next shown is a summary of the viewpoints and views adopted in the lines.

- (a) We’re just another army. We all look alike.
- (b) We didn’t before.
- (c) It’s not what you expect.
- (d) We miss this other.
- (e) Don’t count on the next.
- (f) Notice things here.
- (g) We are just another army.

(a) & (g): His viewpoint is in his current celestial existence; he looks around within that.

(b) & (d): His viewpoint is in his current celestial existence; he looks from there back to his former earthly existence.

(c) & (e): His viewpoint is in the woman’s current earthly existence; he looks forward from there to her upcoming celestial existence.

(f): His viewpoint is in the woman’s current earthly existence; he looks around within that.

4.1.4 Higher-Level Structure Virtually any structural factor in narrative can be so organized as to exhibit a second-order structural pattern, and that, in turn, to exhibit a third-order pattern, and so on. An example is shown by Costello et al. (1995) in their analysis of the temporal structure of their included story. The first-order structure, comprising the relations of certain out-of-sequence story events to the reader’s unidirectional temporal progression, was itself shown to be further orchestrated in the story. It was shown to exhibit a pattern of flashbacks that progressively zero in on a central temporal point (the death of a son), alternately overshooting and undershooting it.

4.2 Relative Quantity

The general parameter called **relative quantity** here is basically realized at three levels, with each larger level serving to embed the next smaller level. From larger to smaller, this general parameter includes **scope**—the relative amount of some structure within the narrative context being considered; **granularity**—the relative size of the subdivisions into which this amount is internally partitioned in one’s attention; and **density**—the relative number of elements within any such subdivision that enter into consideration. We discuss these three levels in turn.

4.2.1 Scope Scope refers to the relative quantity of some structure within the narrative context that is being considered over the full extent of that quantity for the structural properties that exist at that choice of quantity. The narrative structure could be, for example, a whole domain such as the work with its story world, or one or more strata such as the temporal, spatial, or psychological. Then, one can, for example, adopt full scope over a story’s temporal and spatial structure so as to track the large-distance geographic movements of a character over the whole period covered in the work. Or one could pick the relatively small temporal and spatial scope of a character moving about in a room in the course of a half hour.

There are several ways of reckoning different magnitudes of scope. One reckoning simply involves the proportion out of the total entity at issue that is excerpted for consideration. This type of reckoning has two main levels of magnitude: **global** (with consideration of the entire entity at issue) and **local**, (with consideration of only a normatively small portion of the whole). But a narrative could make relevant various magnitudes of scope between global and local or could distinguish magnitudes finer than “average local” down to **microlocal**.

Another way of reckoning is based on cognitive capabilities and would yield the following two main sizes of scope: (1) what can be experienced within a single scope of perception and span of attention, and (2) what must be assembled in memory because it is larger than scope size 1. For example, in nonnarrative everyday experience, one can consider an ant crawling across one’s palm within a single scope of perception and span of attention. But one can consider a bus trip that one has taken across the country only by assembling aspects of the total experience within one’s memory, since the experience is of scope size 2.

Comparably, within a story of sufficient length, certain structural features of the story will lie within one's span of attention and other features will exceed that span. Scope of perception may apply little to written prose (though it may do so to poetry that depends in part on the visual arrangement of the words on the page). But scope of perception can pertain to the sensory input from dynamic works.

4.2.2 Granularity The parameter of granularity applies relative to a particular level of scope. Granularity is the coarseness or fineness of the grid with which one attends to the contents within the chosen scope. That is, it is the general relative magnitude of the subdivisions that result from the further partitioning of the chosen scope of material.

For example, we could select from a narrative a spatial structure of local scope, perhaps a room in which our perspective point is located. Within this scope the narrative might present its material at these two different levels of granularity: One level could constitute a yards-sized metric, a level at which might appear such objects as furniture and people or such features as the room's architectural design. A finer level of granularity could be measured in inches, a level at which might appear such entities as details of wallpaper design, ashtray locations, and facial features. Comparably, over a global scope, in a narrative whose story spans geographic distances, a coarser granularity might pick up national regions, while a finer granularity could present towns.

4.2.3 Density Relative to a particular granularity, the parameter of density is the relative number of elements extant at that particular granularity that are selected for attention or mention. Thus, to continue the previous example with local scope of spatial structure, a sparse description at the yard-type level of granularity might mention, with respect to furniture, only a sofa and a TV, while a denser description could also mention the armchair, floor lamp, coffee table, and so on. Likewise, at the inch-type level of granularity, a sparser level of density might only mention a few items, like the wallpaper design feature and the ashtray location, but a denser description might also include the crack in the ceiling, the sunbeam hitting the family portrait, and the stain on the butler's tie.

Genres as a whole can differ greatly in the general level of their density. Thus, a story presented in a film is enormously denser in the detailing of the material objects and physical features that occupy and characterize

the spatial structure than the same story written in prose. Across visual genres, a printed or filmic cartoon version of a story will have much sparser physical detailing than a standard film version. Further, within a single genre, authors often differ as to the level of density they select. Some give innumerable details at a particular level of granularity while others do not. Finally, the level of detailing can also be varied purposively and in correlation with other factors within a single narrative. For example, Hill (1991) notes that, as a narrative approaches a crucial dramatic point, the story time generally slows down relative to reader time and detailedness generally increases.

4.3 Degree of Differentiation

The general parameter **degree of differentiation** encompasses a number of simpler parameters, seven of which are presented in the subsections that follow. These parameters pertain to various ways in which any entity or structure within the total narrative context can be more or less speciated, articulated, distinguished, defined, or determined. As characterized here, these parameters may not be wholly autonomous. They may in part overlap, and many tend to correlate. And some may pertain to certain types of narrative structures more than to other types. Still, at core, they seem to be largely independent and distinct. In the following subsections, the parameters are named with their less differentiated pole first and their more differentiated pole second. Although it is mainly the poles that are named and discussed, these parameters largely exhibit gradient characteristics.

4.3.1 The Continuous-Discrete Parameter This parameter is the axis that runs from the continuous to the discrete, where the latter is the more differentiated property. This parameter pertains to any structure within the narrative context. At the continuous end of the parameter, that structure is understood as comprising a single unified continuum or gradient that may manifest some progressive transition. At the other extreme, the structure comprises two or more entities that are separate from each other, with clear boundary lines between the entities, and with each entity bearing a distinct relation to the others.

When applied to the domain of a narrative work, this parameter can pertain, for example, to the stratum of spatial structure. Thus, with respect to scene shifting, a character can be presented as jumping from being in

one location to being in another, or as progressively executing the transition. Or the parameter can pertain to the stratum of psychological structure. Thus, an author could transpose a reader from the viewpoint of one character to that of another, or instead have the reader transit imperceptibly from the thoughts of one character to those of another. As an example of a work that emphasizes the continuous pole for transitions, the short story “The Haunted House” by Virginia Woolf (1944) sets it as a deliberate design feature of the narrative to shift gradually in many categories of structure. The author does this, for example, with the current narrative location within the house, the identity of the current character, and the time of the events being portrayed.

The parameter applies not only to dynamic shifts, but also to static characterizations. Thus, the psyche of a character can be represented as a unitary entity whose otherwise distinguishable components are smoothly integrated. Or it can be represented as composite—in the extreme case, composed of discrete “selves” in a multiple personality.

The present parameter applies as well across domains. For example, where an audience is involved with an author in the co-creation of a work (several forms of which were described in section 2), the structure consisting jointly of the author and addressee domains can exhibit various degrees along the axis from a discrete separation to a melded gradient across the two contributory domains.

4.3.2 The Uniplex-Multiplex Parameter For any particular type of structure in a narrative context, the parameter of **plexity** (see chapter I-1) pertains to the number of instantiations of that structure. The structure is **uniplex** if there is a single entity manifesting it, and **multiplex** if there are two or more entities manifesting it. This latter case would then represent the more differentiated pole of the parameter. The multiplex case, further, involves the nature of the interrelationships among the plural elements. Thus, they may function jointly, independently, interactively, or in a state of conflict.

The parameter of plexity is pertinent, for example, where a body of phenomena is conceptualized as having changed in the number of distinct entities that make it up, as with splits and mergers (see section 4.4.1). Thus, cell mitosis can be regarded as a process in which the cessation of one entity turns into the start of two new entities. Conversely, the fusion of a sperm and an egg can be regarded as a process in which the cessation of two distinct entities becomes the start of a single new entity.

Comparable forms are evident in narrative. Thus, a shift in the number of entities present—coupled with a shift in perspective point—appears in the story “Reassurance” by Gurganus (1991). The initial representation in this story is of two characters, a soldier lying wounded in a hospital and his mother back home. The reader’s perspective point is first located at the soldier apparently writing to his mother about his circumstances. By turns, it becomes clearer that this scene is actually the contents of a dream that the mother has been having. The son has already died, the mother alone remains, and the reader’s perspective comes to shift to her location. Thus, the two characters originally in the reader’s imagination have gradually melded into a single character. Perhaps more than splitting and merging, the plexity-related processes at work here can be considered ones of “extrusion” and “resorption.” Once one guesses that the events presented in the story must be routed through the mother’s psyche, one now imagines that the mother’s personal identity has extruded a portion of itself. This portion has speciated or budded off and takes on the semblance of a separate identity, that of her son. This “homunculus” is then the quasi-entity that seems to speak in its own voice in addressing the mother. One then conceptualizes the temporary homunculus as becoming resorbed again into the mother’s psyche.

4.3.3 The Distributed-Concentrated Parameter This parameter pertains to whether some single entity is spread out over a larger area or is localized within a small area. More precisely, this parameter constitutes the degree to which some entity within the narrative context, on the one hand, is **distributed** over the next larger structure with which it is associated or within which it manifests itself, or, on the other hand, is **concentrated** or **focused** relative to that structure.

The parameter of section 4.3.1 can intersect the present parameter. That is, the single entity of the current parameter can be internally continuous or discrete. The discrete case allows additional terms for the poles of the parameter. With the single entity thought to be composed of constituents, then, this parameter involves the degree to which the constituents are **dispersed** over a larger area or **gathered together** within a smaller area.⁹

The pole of the parameter that should be taken as the more differentiated one would seem to be the pole of concentration. The reason is that a quantity is generally more amorphous when it is more distributed, but it is more “crystallized”—that is, closer to an ideal notion of well-defined entityhood—when it is more concentrated.

Although this parameter can apply to physical material, as in a description of cosmic dust coalescing over time into a star, in narrative we find it applying most often to concepts and themes. To illustrate, the movie *Schindler's List* (Spielberg 1993) shows the trajectory of Schindler's ever-closer involvement with the Jews he deals with. This progresses from seeing them as useful for his business, to maintaining them against Nazi removals for the sake of his business, to protecting them against Nazi assault out of sympathy for them, to a desperately felt cause to preserve them. The progression along this trajectory is subtle, and, while watching the later stages spanning most of the latter portion of the movie, the viewer might regard them as still involving only pragmatic business concerns plus an increasing sympathy. It is only near the end of the movie in the scene where Schindler breaks down, weeping, obsessed over how he might have saved yet one more Jew, that the audience realizes the actual emotional state of desperate empathy that Schindler had been feeling in those later stages. In this scene, Schindler's emotional state is presented in a concentrated, well-defined, acute form. The viewer then realizes that this same emotional state must also have been present throughout the later stages but distributed there in a more diffuse form.

4.3.4 The Approximate-Precise Parameter The contrast between **approximateness** and **precision** is the difference between a broadband (or rough-and-ready) characterization of any entity and a fine-structural characterization of that entity. An example of this distinction can be seen for motor-visual behavior in regard to gestures. To show someone the outline of some object that is oval, one could make a quick roughly ovoid sweep of the whole hand, or instead one could move one's forefinger slowly and with tightened muscular tension to describe a fine-lined ellipse. It may be that this type of gestural difference is a cross-cultural universal and is innate. An example of the present parameter in narrative could be the depiction of the personality of a character either with broad brush strokes or with a fine-etched articulation.

It might at first seem that the present parameter in the domain of the work correlates with certain psychological characteristics in the domain of the author. Thus, approximateness in a work might be thought to correlate with indifference and carelessness in an author, while precision correlates with care and carefulness. While this association may be common, it does not seem necessary. Thus, care and carefulness can also

accompany the appearance of approximateness, as seems, for example, to be the regular association for some schools of Japanese art.

4.3.5 The Vague-Clear Parameter This parameter pertains to whether the author's or addressee's understanding of some conceptual entity—or whether the narrative presentation that manifests or mediates such understanding—is **vague** or **clear**. On the vague end, this understanding or presentation is murky, where whatever components it may have and their interrelationships are poorly worked out. On the other end, the understanding or presentation is well-developed in its clarity, with its components and their interrelationships well worked out. The pole of clarity, of course, is the more differentiated end of the parameter. One may readily associate with conceptual contents at the clarity pole the notion that they are comprehended intellectually, but at the murky pole the notion is more that they are sensed or apprehended viscerally. Contents at the clarity pole are identified; those at the vague pole are more pregnant with the potential of discovery or of being figured out.

4.3.6 The Sketchy-Elaborated Parameter This parameter pertains to the extent to which some conceptual structure is addressed and dealt with. A conceptual entity can be less extensively addressed, in which case it is **sketchy** or **schematic**. Or it can be more extensively dealt with, in which case it is more **elaborated** or **specified**. The latter is, of course, the more differentiated pole. It is necessary to distinguish this parameter from the preceding one, since the qualities of sketchiness and elaboration can intersect those of vagueness and clarity. Thus, a matter that is clearly understood and worked out need not exist or be presented with full elaboration but can be sketched out. Contrariwise, a matter only vaguely understood need not exist or be presented sketchily but can get highly elaborated. Accordingly, one can write much and with great elaboration about amorphous murk. Likewise, one can write tersely about a subject one understands clearly.

4.3.7 The Implicit-Explicit Parameter This parameter pertains to the degree to which any factor or system is **implicit** or **explicit**. At the implicit end, the factor or system is effectively present, as judged by an addressee's cognitive response to a work and perhaps by an assessment of the author's intent, but is not in its own right directly apparent. At the explicit

end, the factor or system is perceptibly manifest or is expressed overtly and directly in its own right. Implicit content comes to be present in the addressee's cognition through various processes: It can be presupposed, perhaps as part of the cultural or physical world context. It can be inferred from the explicit content via conventional reasoning processes acting in accordance with background knowledge. It can be inferred on the basis of what was not included amidst the explicit material relative to some baseline of expectations. Or it can exist in the form of second-order patterns in the explicit material that then have to be discerned. The explicitness pole of the present parameter is assumed to be the more differentiated one because the conceptual content of explicit material is more certain and univocal, whereas implicit conceptual content is generally more ambiguous.

Note that although the poles of the present implicit-explicit parameter tend to align with the respective poles of the preceding two parameters—that is, the vague-clear and the sketchy-elaborated parameters—it is in principle distinct from those parameters. Thus, with respect to the vague-clear parameter, a narrative can be quite explicit about vague material, while an implicit suggestion or innuendo can be quite clear and unmistakable. Comparably, with respect to the sketchy-elaborated parameter, explicit material can be quite sketchy, while an author can take pains to arrange for the implicit evocation of a particular elaborate pattern of presuppositions and inferences in the addressee.

An author who intends that certain conceptual content be evoked in the addressee may purposely choose to make it implicit so that it will be less accessible for observation, or for placement within a comparative framework, or for questioning, and thus be outside the conscious awareness or control of the addressee. The aims of such a choice could be to abet persuasion, or the subliminal dramatic effect, or the shock and impact of discovery when the addressee herself pieces together what had been unstated.

Note that there appears to exist a class of affective categories—ones an author may want to evoke—that actually are at their strongest when they are solely implicit. A common denominator of such forms of affect may be that their object is understood as hidden or elusive. Affective categories of this sort would seem to include menace, eeriness, and mystery—to use terms that characterize the stimulus—or foreboding, disquiet, and wonder—corresponding terms that characterize the experience. The existence of such phenomena in our experience seems to depend on their remaining

murky or being merely hinted at. When fully explicit or clear, they can lose their intrinsic character and their concomitant emotional impact. Such phenomena would then come under the aegis of other forms of cognition or emotion, such as curiosity, scrutiny, anger, or open fright. Speculatively, our capacity for such affective categories may have evolved in response to the kinds of phenomena in nature that have a hidden character. This would include, for example, stalking predators that employ stealth. There would accordingly have been a selective advantage to the evolution of a cognitive system that would detect and integrate sparse hints (e.g., the snap of a twig, a slight movement) into a suspicion of a causal agency behind them. The physiological hair-raising response, which now seems typically to accompany an inkling of menace, eeriness, or mystery, apparently in fact had its origin as a protective response to threat from another creature.

4.4 Combinatory Structure

Implemented by the pattern-forming cognitive system (described in section 1.1), the general parameter of **combinatory structure** pertains to the pattern in which elements are joined together to constitute a larger whole. Such combinatory structure can consist either of an atemporal or simultaneous association of the elements, or, instead, of a temporal sequencing of the elements. An example of simultaneous association of elements is an atmosphere, as discussed in section 3.4.2.3. An example of temporal sequencing is the plot of a story.

Various systems exist that prescribe certain forms of **well-formedness** of combinatory structure. Such a system can be, for example, culturally or authorially or innately based. The system can be a body of principles that govern, or patterns that characterize, or factors that constrain the combinations that are well formed. Different systems can be applied side by side to different structures within a total narrative context. Among the extant concepts of well-formedness, general forms of it include “consistency” and “coherence” for atemporal combination, and “cohesion” for sequential combination.

In the following subsections, though some cases of simultaneous association are included, we concentrate on temporal succession. We will use the term **sequential structure** to refer to the patterns in which a number of elements of some category combine in a sequence through time, whether these patterns conform to particular principles of well-formedness or, on the contrary, break them.

4.4.1 The Sequential Structure of Identity A fundamental conceptual construct is the **sequential structure of identity**. One of our cognitive capacities is the ability to draw a conceptual boundary around some portion of the contents of consciousness (including what is perceived or conceived) and to ascribe unitary entityhood to the material within that boundary. Such an **entity** could be a physical inanimate or animate object, an event, an institution, a personality, a trend, and so on. Our cognition can further operate to ascribe to such an entity a distinctive **identity**, so that it is conceptualized as unique and distinguishable from other entities.

The sequential structure of identity has a number of properties. One of them is that the identity of an entity can be conceptualized as maintaining continuity through time regardless of any other changes that the entity may undergo. For example, in the transformation of Kafka's (1936) character Gregor Samsa into an insect, the reader readily accepts the idea that the personal identity of Samsa continues on despite the physical change. In this instance, the personality of the original entity is understood as the essential component of the entity's identity, while its form is understood as incidental. Likewise, with little question we attribute a single continuous identity spanning decades to, say, the General Electric corporation despite what may have been complete or near complete changes in personnel, physical plant, and product.

This form of sequential structure, namely, continuity of identity despite changes, has a synchronic analog, namely, sameness of identity despite differences. Thus, the same property that is considered definitional of a particular entity's identity can be ascribed to a number of concurrent instantiations that differ in other properties. Such separate instantiations are understood as **versions** or **variants** of the same entity. What can be considered the "same story" can be told in book and film versions (where it differs as to the medium), or in short story and novel versions (where it differs in length and detail), or as the related folk tales of two different cultures (where it differs in certain aspects of content).

Another form of continuity of identity through time is the maintenance of identity across temporal gaps. Consider personal relationships. One's sense of another person's continuity of identity can hold across gaps, even long ones, as with a colleague that one sees only every four years at a conference but with whom one feels an unbroken friendship. In such cases, one may be performing an operation of **cognitive splicing**, where one joins one's experience of the various periods one spends with another person into a seemingly seamless continuum from which the intervening

periods have been excised. From one perspective, this cognitive phenomenon is merely a correlate of Piaget's object constancy. But it takes on special significance when we realize one of its consequences. Our sense of continuity of identity across gaps allows us to maintain cognizance of an enormous number of separate identities concurrently. Thus, with respect to acquaintanceships, we can conceptually maintain numerous continuing relationships interwoven through the single timeline of our life.

This temporal form of splicing across a gap to maintain identity also has a synchronic spatial analog. Consider sentences like *The park lies in the middle of Fifth St.*, or *Fifth St. extends on either side of the park*. Such sentences represent a conceptualization in which there is a single entity (Fifth St.) that spans a gap, rather than two separated entities.

The concept of identity discussed so far has been its continuation while other factors change. But there is also the concept of a change in identity. This new concept rests on a more complex basis than might at first be thought. Thus, to eliminate one possibility, no change of identity is experienced as taking place simply as a result of a person's first perceiving or conceiving one entity and then shifting her attention to another entity. For example, a person does not experience that an identity has changed when she first looks at a pen in her hand and then at a cloud in the sky, even though the percept or concept of the one entity has in sequence been supplanted by that of the other entity in her mind. Rather, our usual concept of change of identity entails a change in the identity of *something*. Hence, as before, there is a something that has maintained its continuity through time, even if its identity has changed. This situation differs from the preceding one in that here the something that persists is not treated as definitional for an ascription of identity, whereas before it was so treated. However, because of its conceptual underpinning, a conceptualization in terms of change of identity might always be open to a reconceptualization in terms of continuity of identity, namely, that of the "something" that does persist.

This may be illustrated with a type of example introduced by Postal (1976: 211–212). Consider a lizard that had previously lost its tail. One can then say of it either *The lizard grew another tail*, or *The lizard grew back its tail*. The former sentence represents a conceptualization in terms of change of identity. Here, entityhood is associated with a particular quantity of matter that formed the original tail, and since the quantity of matter forming the new tail is different, it is a different tail with its own distinct identity. But the second sentence represents the alternative

conceptualization, that of the continuing identity of a persistent something. Here, the concept of a tail is associated with a particular spatio-temporal form bearing a particular relation to the rest of the lizard's body. This form can persist or recur through time regardless of the particular material instantiating it. Such material is thus, as in the earlier discussion, an incidental property that can change without effect on the concept of identity.

Similarly, the sentence *Five windows have broken in this frame* refers to five distinct panes of glass, each with its own unique identity. But *The window in this frame has broken five times* refers to the more abstract entity of the form that fills the frame, which maintains its identity across five material instantiations of it.

In the preceding two example pairs, the conceptualization in terms of change of identity pertained to the concrete material, while the abiding factor was the form. But the reverse can also be observed. For instance, consider a story in which a craftsman has carved a tree into a canoe. Here, even though the concrete material, the wood, has persisted through time, one would usually regard the form as definitional of identity, so that where there had been a tree, there now was a canoe. Here a change of identity is exhibited by the form, whereas the material is abiding.

Even a change of identity of this type too, though, is open to a reconceptualization in terms of continuity of identity. Thus, if the story presents the tree as having a spirit, one would now associate identity with the persisting material and its indwelling spirit, so that the change in form from that of a tree to that of a canoe is merely incidental and no longer constitutes a change of identity.

This sequential change in identity also has a synchronic analog. Consider a courseway for cars that has two different names over different stretches. One can think of this as two separate streets that meet up (perhaps historically, in fact, two separate streets were later joined). This conceptualization, then, involves two distinct identities. Alternatively, as in the sequential case, the other conceptualization in terms of a single identity is also available. Thus, one could think of the courseway as a single street with a single identity that is simply called by different names over different portions of itself.

As another of its sequential properties, an identity can not only remain constant or change, but it can also begin or cease to exist. Both these processes can be conceptualized together as a pair. Thus, we have the cognitive capacity to monitor a sequence of phenomena, to draw a closed

boundary around a portion of it, and to ascribe entityhood to that portion, so that phenomena preceding the earlier boundary and phenomena following the later boundary are excluded from that entity. That entity is thus conceived as beginning at the earlier boundary and ending at the later one. This characteristic is exhibited by any so-conceived bounded event, wherein some finite quantity is progressively acted on to exhaustion. English can typically mark such an event with a temporal phrase beginning with *in*, as in *The log burned up in 10 minutes* or *I swept the floor in 10 minutes*. Conceptions can differ as to where to draw a boundary in a principled way. Thus, with regard to an initial boundary, views differ as to whether the identity of a human individual begins, for example, at conception, at the start of fetal brain function, or at birth. And with regard to a terminal boundary, views differ as to whether an individual's life ends at the cessation of brain function, at the cessation of general body functions, or at the point where no revival can be effected.

The conceptualization of an identity as having a finite span or a cessation point can lead to further cognitive formations. If one has an affective response of attachment to a particular entity, one generally feels a desire to prolong the existence of the entity and to preserve it against threats to its continued existence. Then the entity's ceasing to exist generally evokes an experience of loss and an accompanying feeling of sadness. Such feelings are prototypically associated with the life of another person dear to one. But they can also attach to any liked entity, of whatever nature or degree of abstraction. Thus, readers can experience them over the death of a fictional character—as they did when Arthur Conan Doyle tried to kill off Sherlock Holmes and had to bring him back to life due to public reaction. And one can feel them over the discontinuation of a program or the end of an era.

The cognitive processes that ascribe entityhood to some portion of phenomena, that impute continuity of identity to that entity despite changes in other factors, and that fix a feeling of attachment to that continuity may engender a further cognitive effect. They might produce the conceptualization that the identity continues past a boundary that would otherwise be associated with the cessation of the entity. In particular, we find many traditional concepts of the continuation of an individual's identity beyond the death of his physical body. Such concepts include life after death, the eternity of a soul, and the transmigration of souls.

The sequential properties for identity discussed so far have held constant the number of identities involved at any particular time, and have in

fact held this number constant at “one.” But some properties also address a change in the number of identities extant. Such properties include splits and mergers. For example, a single bacterium with its own specific identity can divide into two “daughter” bacteria, each with its own particular identity. And, conversely, two streams, each with its own name and identity, can flow together into a single river that bears its own distinct name and identity. As before, this sequential pattern has a synchronic analog. A spatial example is a street that forks into two—or, conversely, two streets that merge into one—with each of the three segments bearing its own name and identity.

Our conceptual ascriptions of entityhood are often challenged by such patterns. Thus, in the bacteria case, one might feel that the “mother” bacterium ceased to exist as an entity on splitting and that two new entities came into existence. Or, one could feel that the original bacterium somehow continues on in a distributed fashion in the two daughter cells. For a comparable example in the reverse direction, we are often unclear whether to regard a case of close symbiosis as two organisms in association or as a third organism with components.

Identity structure can exhibit most of the other parameters discussed in section 4. For example, the parameter of inclusion of the part-whole type is exhibited by an anthology. The whole of an anthology has its own name and identity, while it encompasses a set of separate contributions, each with its own title and identity. Or two entities with distinct identities could exhibit partial overlap. This relationship is often exhibited with respect to geographic distribution—for example, by nations and tribes in Africa, or by county divisions and electoral districts in the United States.

In fact, examples similar to the last one can illustrate a parameter of **accord** or **discord** between two structures. First, note that the cognitive process of drawing a boundary around a portion of phenomena for an ascription of entityhood can be founded on different bases. Thus, establishing the entity of an electoral district over a contiguous portion of territory can be based on a pattern of population density or, alternatively, on a pattern of likely party affiliation. If these two bases are discrepant, a district formed on the latter basis is said to be “gerrymandered.” Thus, the concept of gerrymandering is based on the cognitive principles that govern the ascription of entityhood and identity.

The conceptual construct of a particular continuing identity generally has a secondary property: Other phenomena conceptually associated with that identity also become associated with each other. Such other phe-

nomena, further, undergo cognitive processes that select elements from among them and integrate those elements into what can be experienced as a single ideational whole. Even where such elements might seem a disparate collection on other grounds, or as assessed by other cognitive faculties, they can be united into a complex here that seems to accord with well-formedness principles for ideational sequential structure.

A principal type of entity that functions in this way is the conceptual construct of one's self. Under the aegis of this single identity, the experiences that one has had can be conceptually united so as to constitute the ideational entity thought of as one's "life." The cognitive processes that perform this integration can base it on different selections from among the experiences, and can thread the selected components together in different ways to yield different conceptions of one's life. Such alternatives of conception can arise in the same individual at different moments or in association with particular moods, or they can vary across individuals in accordance with their cognitive style and personality (see Linde 1993). Of course, one exercises the same cognitive processes on one's perception of another human, to yield a conceptualization of that person's "life."¹⁰

Where the entity that serves as the organizing aegis is not a human individual but a nonsentient construct like a work of fiction, the same cognitive process of selection and ideational integration that one exercises yield not a "life" but a "story." And where the entity is a construct like an institution or nation, they yield a "history." The concept of the will of God as having acted purposefully through history may arise as a projection of this cognitive system for weaving a selection of events together into what is then experienced as a well-formed ideational sequence.

Strong cognitive tendencies govern the type of entity that can function in this way as an aegis or venue for the integration of secondary phenomena associated with it. In general, such an entity seems to be conceived of as a contiguous portion of space-time. Thus, a person typically limits this integration to the experiences directly associable with his biological self to form his conception of a single life, rather than mixing together excerpts from his self and from other people into that conception. Comparably, a person for the most part does not cobble together bits and pieces out of various books lying before her from which to fashion a story, but rather limits herself to the confines of a single physical book to integrate its contents into a story.

As they have been described in this section, the cognitive processes for integrating conceptual components into an entity with an identity are a

specific application of the pattern-forming cognitive system described in section 1.1. The comment in that section on the evolution of this system can be augmented here. It would presumably have been a selective advantage for an organism to have an increase in its capacity to integrate its experiences over time. Such a development would permit the accumulation, comparison, and conflict resolution of a larger set of experiences in the world, to constitute a reference body of individual lore for an organism. But further, then, this level of experiential integration may have depended on the evolution of the capacity in the pattern-forming cognitive system to form a construct of the “self” as a substrate on which the experiences could be interwoven.

4.4.2 Ideational Sequential Structure Another parameter of sequential structure pertains to ideational or conceptual content and so can be termed **ideational sequential structure**. On the one hand, a particular concept can be represented or experienced at a particular point in time. On the other hand, a number of such concepts can also be combined within a single conceptual structure manifesting through time. Such an ideational structure can range indefinitely upward in scope, embeddedness, or intricacy—with respect to language, say, from a phrase to Proust’s *À la Recherche du Temps Perdu*.

Various systems of well-formedness can be applied to such an ideational sequence. Two related systems of this sort that apply within language, mostly over a local scope, are syntax and discourse factors. Another system of well-formedness, one that operates at any scope size, though perhaps typically at a mid-range, is that of “logic,” understood in its broad sense. This includes assessments as to whether a current idea follows logically and reasonably from what has preceded, or whether there has been sufficient preparation for it, so that it is not a nonsequitur. Yet a further system, one that realizes its fullest integration over a global scope, is any set of canons or norms of plot development or of story cohesion. A system of this sort would thus comprise a body of principles and normative expectations that pertain to the sequencing of ideas over a broad scope. Accordingly, the concept of **plot** can be located within the present category of ideational sequential structure. Thus, for a narrative work, one notion of plot is that it is basically a form of abstraction from the overall ideational sequential structure of the work. This abstraction is based on some system of evaluation for structural relevance, but it typically concentrates on individuals, events of mid-sized scope, and psycho-

logical import. Of course, different sets of canons or norms pertaining to plot development and story cohesion can disagree in their principles of well-formedness. For example, one set will accept an unforeshadowed agency appearing so as to resolve a plot dilemma, while another set will dub such an agency a contrived “*deus ex machina*.”

The ideational structure of a work, as described in the preceding, as well as the character of its ideational content, may tend to reside in the background of an addressee’s attention relative, for example, to the ideational content itself. But a work can also make the structure and character of its ideational content the object of the addressee’s attention. One form of this is the “*Rashomon*” effect, where events that one might have thought had an objective character to their contents are instead presented from the perspective points of different individuals. These individuals abstract different aspects from the ideational complex and process those aspects in different ways, or they project different aspects of their own affect or cognition onto the complex, thus leaving the addressee wondering if there is such a thing as objective reality or whether all is instead only subjective interpretation. Alternatively, a work can intentionally leave unclear what has actually happened, or it can present discrepant and contradictory descriptions of what has happened. In all these ways, the character of ideational content and its sequential structure is made an issue of in its own right and is thus foregrounded.

The remainder of this section concerns addressee and authorial assessments of well-formedness in the sequential structure of ideation. An addressee has a cognitive system for assessing the well-formedness of an ideational sequence, for example, of a book he is reading or a film he is watching. Correlatively, an author typically thinks through her body of material for its logical interconnections, so she can shape the work to have the desired effect on the addressee’s cognitive system for assessing sequential well-formedness.

Now, authors often intentionally formulate their productions in a way designed not to accord with the addressee’s cognitive system for assessing well-formedness in ideational sequence, but rather to tamper with it. One reason an author may have for structuring a work in this way is—as the author might conceive it—to disrupt the addressee’s habitual attention to superficial forms of well-formedness in order to urge their attention toward deeper forms. A literary example of this might be absurdist plays, as by Ionesco or Genet. And if sequential well-formedness can be extended from a work of language to one of dance, so as to cover not only

a smooth flow of ideas but also a graceful flow of movement, then an example of intentional disruption of traditional norms of well-formedness might be a modern dance performance, as one by Martha Graham (relative to the classical ballet that preceded it). The introduction of random elements, as in some musical forms by John Cage, may be intended to serve a similar function.

Another reason for an author to tamper with—in fact, to subvert—the addressee's systems for assessing logical well-formedness might be to persuade, as with propaganda or courtroom presentations. To induce the addressees' pattern-forming system to proceed in certain directions, an author here may foreground or select certain aspects of a full account; background or omit certain other aspects; distort still other aspects; present certain aspects in a suggestive way that would invoke the addressee's processes for forming inferences but do so in an incorrect direction desired by the author; disrupt the addressee's capacities for forming logical inferences through the use of factors that evoke strong emotions; and the like.

Yet another source of discord with assessments of well-formedness is simply authorial omission. Here, an author fails to work out the ideational content of his production so that it is conceptually integrated and has its components fit sensibly together, where this might otherwise be deemed desirable. An example might be movies that rely on special effects.

Productions stamped with such authorial inability or disregard might still be well received because, in a complementary fashion, enough addressees may not require well-formed ideational structure, especially under certain cognitive circumstances. Thus, the well-formedness system of an individual such as an addressee seems generally to be readily subject to diminution or disruption in its functioning by certain intense-level activity of other cognitive systems. Such activity might consist of the perception of powerful sensory stimuli or the experience of strong emotion. Accordingly, films that have striking visual effects or that rouse intense emotions such as excitement can get away with having plots that are relatively less cohesive than in other films and still be successful.

On this interaction between authorial and addressee attention to well-formedness, it may be further observed that, in some measure, the typical degree to which a narrative is integrated correlates with the typical degree to which the average experiencer is integrative. The scope over which an experiencer is readily able or eager to integrate an ideational sequence

and to assess it for well-formedness varies across individuals and across cultures. In fact, it may alter in the course of cultural change. In this regard, some claim, for example, that forces are at work in American culture toward the reduction of an experiencer's integrative attention span down to the scope of a story segment between commercials or of a soundbite.

4.4.3 Epistemic Sequential Structure Another form of sequential structure pertains to epistemology and so can be called **epistemic sequential structure**. This is the structure of "who knows what when." More precisely, for any narrative-related domain, this is the cross-sectional and longitudinal profile of what each individual and group knows and when they know it. Broadly construed, epistemic structure also includes mistaken beliefs as well as beliefs held under various assessments of certainty and quality, as in the case of a hunch or a suspicion.

In a mystery novel, epistemic structure can be the main engine of plot progression for the characters in the story as well as for the author and reader. Thus, to look first within the story alone, epistemic sequential structure provides the rationale for such activities as a character's covering up, throwing a detective off the track, and spying, or a detective's investigating, giving a false sense of security to or decoying a suspect, and tricking the truth out of the real murderer.

And within the authorial domain for a mystery novel, epistemic sequential structure is the system by which the author undertakes such narrative actions as setting up a mystery, leaving clues as well as false trails, introducing a succession of seeming explanations that do not prove out, and delaying explanations until the final resolution at the end.

Accordingly, within the experiencer's domain, epistemic structure can engender in the addressee such experiences as suspense, puzzlement, hunches as to the truth, increases and decreases in her sense of certainty, a sense of letdown over her previous explanatory picture falling apart, and the gratification that she can feel over the consistency and coherence of all the pieces finally fitting together.

Apart from mystery stories, epistemic structure can be seen at work in many respects. For example, it can pertain to the creative style of the author. Thus, an author may be the type that fully plots out the work before composing it, or instead the type that begins the work and "does not know" where the story will go but lets the logic of the story and the psychology of the characters unfold in their own way.

4.4.4 Perspectival Sequential Structure A perspective point has its own principles of sequential structure, here termed **perspectival sequential structure**. In significant ways, a perspective point is not constrained by or subject to the same principles of standard physics as a material entity, although it does follow them in some respects. For example, “perspective point physics” diverges from material physics with respect to certain aspects of spatial, temporal, and causal structure. Thus, the perspective point can jump about in story-world space, not subject to the usual principles of physical continuity. And, if need be, it can pass through or appear amidst otherwise solid objects, hence not subject to the usual material principle against colocation. Comparably, it can first appear at one story-world time and then jump to another, shifting either forward or backward, thus not subject either to a principle of temporal continuity or to a principle of unidirectional progression. The perspective point has no causal effect on the story world. That is, it can appear anywhere without any consequences to what would otherwise be taking place there.

Related to these physical freedoms, the perspective point is also free to appear in a range of structures across the narrative context. For example, it can appear not only among the material objects of the spatial stratum, but also in the minds of various characters in the psychological stratum. And the perspective point can appear in or jump across domains. This occurs, for example, when a work suddenly redirects the addressee’s attention to the author or to the addressee himself, perhaps with the use of the pronouns “I” or “you” in the text. Or it takes place when the text calls attention to itself qua text, entailing that the addressee redirect her attention away from the contents of the text, through herself, and back to the text again. Few other entities have such freedom.

But perspective point physics is also consonant with material physics in a number of ways. Although the perspective point does not affect its surroundings, it can be affected by them, at least insofar as the perspective point’s “decisions” as to how long to stay, what to observe, where to go next are concerned. Further, although the perspective point ignores some properties of spatial structure, (e.g., its ability to exhibit path discontinuities and to occupy the same location as another object), it does obey other aspects of spatial structure. For example, it generally remains for some duration of time within the confines of a designated spatial region and abides by the spatial structure of that region. Further, with regard to temporal structure, the perspective point has its own ticking clock that, from its own viewpoint, does determine a forward-progressing timeline.

Thus, although the perspective point may flit backward and forward in story-world time, the resulting observations are registered on the timeline of the perspective point itself as onto a steadily forward-progressing tape.

4.4.5 Motivational Sequential Structure As a member of the psychological category of “affect” (see section 3.4.1), **motivation** consists of the tendencies toward particular types of action undertaken by a sentient entity that are thought to be associated with or caused by particular psychological states within that entity. In their most schematic prototype, the following might be examples of such tendencies: fear with respect to an object makes one tend to distance oneself from that object; anger, to approach the object so as to hurt or repel it; desire, to approach the object so as to acquire it; interest, to attend to the object; and boredom, to attend to something other than the object. Comparably, desire for a state of affairs—that is, having a goal—tends to make one undertake a sequence of actions that one thinks will culminate in that state of affairs.

With respect now to sequential structure, it is the multiple concatenating, embedding, overlapping, and opposing of motivations on the part of various individuals or groups over various degrees of scope that can constitute an important—often the main—cohesive structure of a narrative. The principles governing such phenomena are called **motivational sequential structure** here.

4.4.6 Psychological Sequential Structure Recall that, in section 3.4, psychological structure was presented as a stratum—that is, as a type of phenomenon that can assume different values at different loci within the narrative context. It was found to be organized at three levels: the individual, the group, and the atmosphere. Here, we observe that an entity at any of these three levels can exhibit a succession of psychological forms and thus exhibit various patterns of **psychological sequential structure**. The forms of sequential structure presented in the preceding subsections also belong to the psychological stratum, but there they represent “categories” of psychological structure, as these were presented in section 3.4.1. Here, attention is on the “levels” of psychological structure, as these were presented in section 3.4.2.

Thus, at the individual level, an individual can exhibit patterns of psychological sequence like the following: a marshaled progression of rational thought; the gradual coalescence of an amorphous apprehension into a crystallized idea; a stream-of-consciousness type of succession of

thoughts, each related to the last by perhaps little more than a shared conceptual component and a similar affective vector; or, indeed, abrupt shifts of ideas and feelings.

At the next level, a group might be thought to be subject to principles that govern psychological sequences like the following: a spread of mass hysteria; the progressive manufacture of public consent through control of media; the slide of a society from vigor to malaise.

And atmospheric transitions could include a shift from a tone of optimism to one of inexorable doom, or a shift from a sense of menace to one of warmth.

In much the same way that science fiction as a genre includes much deliberate play with the canonical principles of physical sequential structure, it also plays with the usual expectations for psychological sequential structure. It does so at the individual level—for example, in representing an alien with inexplicable motivations seeming to govern its course of behavior. It does so at the group level—for instance, in representing an extraterrestrial collective with a partly communal mind abetted by extra-sensory communication, or a society with an unfathomable worldview that guides its actions. And it does so at the atmospheric level—for example, in representing a planet that engenders in a human observer uncanny feelings that follow no familiar pattern.

4.5 Evaluation

A psychological entity can perform the cognitive operation of **evaluating** a phenomenon for its standing with respect to some system of properties. A system of properties of this sort is typically understood as being scalar, running from a negative to a positive. Such systems of properties include veridicality, function, importance, value, aesthetic quality, and prototypicality. Thus, a cognitive entity can assess some phenomenon at the positive pole of these scales as being true, purposeful, important, good, beautiful, and standard. All these systems, except that of aesthetics, are addressed in the subsections below.

4.5.1 Veridicality The parameter of **veridicality** pertains to the closeness of correspondence that some representational structure in a narrative has to some aspects of the “real world,” in accordance with the way some cognitive entity assesses such closeness and conceives of such a world. Such a cognitive entity might be an outside analyst, an author, an addressee, or a performer of a work.

To illustrate, a work of fiction generally achieves the status of a **classic** because the experience of a critical mass of critics and the lay readership has been that the author has correctly captured certain truths about the nature of the human psyche or of society and has incorporated them in the story. Or, for an example from the perspective of a performer, an actor that experiences a play as generally nonveridical may find that he cannot believe in his role, perhaps that his character's lines or personality ring false, and consequently may deliver a poorer performance for not being able to get into the part.

Different degrees of veridicality are generally required for different genres of narrative. Thus, nonfiction—say, a history—generally has a higher requirement for a veridical correspondence of the textual descriptions to the external world than does fiction. And the genre of science fiction is generally distinguished from that of science fantasy on the basis of a story's scientific plausibility (as projected from contemporary understanding).

Different degrees of veridicality also occur within a single work in connection with different forms of representation in the work. In fact, some may hold that some divergence from veridicality is necessary for certain other truths to be represented. In this view, a narrative can, for example, exhibit noncorrespondence to superficial probabilities of occurrence that are customarily attributed to the external world, in exchange for greater veridicality in the abstracted representation of certain deeper psychological or societal structures. An example might be a film that is unrealistic about everyday life in a neighborhood but that portrays the behavior of the characters so as to represent certain abstract ideals or hopes about human relations that audience members might actually harbor.

The traditional concept of an addressee's "willing suspension of disbelief" falls directly under the aegis of the present parameter of veridicality. The concept refers to an addressee's acceptance of certain forms and amounts of nonveridicality in a story in exchange for certain other aspects of the narrative—for instance, its affect on the addressee's emotions. By one interpretation of the concept, the addressee prefers veridicality, so that there is a cost for her in a work's divergence from it, even as she enjoys the other aspects of the work that emerge in compensation. By another interpretation, the addressee actually prefers certain forms and amounts of divergence from veridicality because it permits the depiction of a world more enjoyable than that of her everyday life. When an addressee

actively seeks such nonveridical narrative as a relief, it is understood as **escapist literature**.

It can be posited that a person's assessments as to degree of veridicality are due to the operation of a cognitive brain system whose function is to perform such assessments. Among its various operations, this cognitive system for veridicality would normally apply to the operations of the pattern-forming cognitive system, specifically with respect to its function of weaving conceptual components into a sequential narrative. The confabulation that some brain-lesion patients exhibit, then, might be attributed to a failed connection between the cognitive system for veridicality and the cognitive system for narrative construction.

4.5.2 Function An author can assess any structure that she considers placing in her work with respect to its relevance and efficacy for her communicative intentions. We can say that the author has a particular **purpose** in placing that specific structure in the work, or—equivalently—that the author intends that the structure serve a specific **function**. All the choices that the author makes in assembling the narrative can be guided by this factor of intended function.

For examples with local scope, an author's purpose for a particular paragraph, sentence, or even word could be to establish particular information or a mood needed for subsequent narrative developments; to keep the addressee's interest and attention active by changing the pace; or to induce in the addressee some particular affect, such as puzzlement.

At the global level, one preponderant intention of an author for her work is to have certain overall psychological effects on the addressee. What differs from work to work is what this effect is to be. Generally, this matter is the purview of the field of "rhetoric." Examples of intended psychological effects for the work as a whole are to make the addressee wiser or morally better, to orchestrate certain sequences and waves of emotion in the addressee that should (as the author's conceptualization may have it) cleanse him or refresh him, or to rouse the addressee to certain actions.

A narrative type can play with the parameter of function. To consider humor in this regard, a standard joke does not play with this parameter, since the elements presented along the way function as background or as lead-ups to the punchline. By contrast, a shaggy-dog story only parasitically mimics this narrative form. The elements in the lengthy body of the story turn out to have no functional relation to the punchline beyond

affording the occasion for a pun. At a metalevel, thus, the point of the shaggy-dog genre is its pointlessness.

4.5.3 Importance A phenomenon has **importance** for a sentient entity to the degree to which it pertains to or can affect—positively or negatively—any preference system held by that entity. A preference system is a system in accordance with which the sentient entity has different degrees of liking for various target elements. Such a system could be the values, desires, aesthetics, or interests of the sentient entity. In the context of this study, the most relevant phenomenon that can have importance is any representational structure within a narrative work—for example, a paragraph or the whole work itself. The sentient entity that experiences or assesses the importance of a phenomenon can be an addressee, an author, or a societal group (or, of course, any character or group represented within a narrative).

4.5.4 Value A sentient entity can evaluate a phenomenon with respect to some system of values so as to assess it as relatively good or bad. While the parameter of importance addresses the degree to which a phenomenon *pertains* to a preference system such as that of one's values, whether positively or negatively, the parameter of **value** addresses the degree of positivity or negativity along that preference system of values. What seems universal in this parameter is that every familiar sentient entity appears to evaluate phenomena in terms of good and bad. What notoriously differs across sentient entities is which phenomena they assess as good and which as bad. And, of course, a single cognitive entity can hold two inconsistent evaluations of the same phenomenon. In the narrative context, for example, an addressee might consider a didactic aspect of some work both ethically uplifting and presumptuously moralistic.

Assessments along the parameter of value largely align with assessments along the other parameters in this section. For example, a critic will generally evaluate a work as good in correlation with the degree to which he assesses it as important, true to some aspects of the world (such as psychological or social structure), and beautiful, and to the degree to which it achieves the author's purposes through the choices she made in it.

4.5.5 Prototypicality Any structure within the total narrative context is generally subject to assessments as to its **prototypicality**. That is, an author, an addressee, or members of the culture at large will generally

have certain norms, expectations, and forms of familiarity pertaining to that structure as a result of experiences with the historical tradition or with other exposure to narrative contexts. By the nature of this characterization, such norms can be expected to vary for different structures in different genres, for different individuals or groups within a culture, for different periods within a single cultural tradition, and for different cultures.

Authors, or movements of authors, that compose their works to deviate substantially from the current norms may be considered by contemporaries to be **avant-garde** and their works to be **experimental**. Cultural traditions can exhibit a second-order difference in the degree to which they exert pressure on authors to maintain the inherited norms or, on the contrary, to challenge them. Thus, it appears that certain long periods in Chinese art and literature maintained themselves with great conservatism, while this century in the West has rewarded authorial experimentation.

Within the domain of the experiencer, the addressee of a work with prototype divergence will generally experience surprise over the novelty. Such experiences can become affectively tinged in a negative direction, for example, as shock, or in a positive direction—as exhilaration, for instance. In fact, a principal reason for including the parameter of prototypicality in the framework of the present analysis is the necessity, as we see it, of tracking the cognitive effect of an ongoing narrative on an addressee. After all, that profile of responses is something an author generally takes great pains to engineer, and the breaking of norms is a major vehicle for engendering certain desired responses in the addressee.

4.6 Interrelations between Different Parameters

As with domains, the various general and particular parameters presented in this section can interrelate with each other. For example, the parameter pertaining to alternation could apply to the parameter of scope: Two structures in a text could alternate either locally or globally. Or the continuous-discrete parameter could apply to the granularity parameter. For example, a narrative could address an issue from two distinct levels of granularity—say, a fine-grained and a broad-brush treatment of the issue (perhaps alternating between the two). Or it could instead address the issue along a continuous range of granularities. Or, again, the veridicality parameter could apply to the parameter pertaining to abstraction. This combination could pertain, in the judgment of the addressee or of some analyst, to whether the author has correctly captured something

about the nature of the human psyche in the abstractions from his understanding of it that he incorporates into the narrative.

Another way that different parameters may interrelate is as alternatives shifting in their prominence in accordance with the weighting or interpretation they are given. Thus, depending on particulars of their treatment or of their interpretation by an experiencer, two structures may, in the course of a narrative, be able to bear to each other all the relationships of “embedding,” “alternation,” “concurrence,” and “correlation,” as these were discussed in section 4.1. For example, a love story that unfolds against the backdrop of a nation at war may at times seem to be a small event **embedded** within a larger historical epic. Or it may seem to be a drama as intense for its interiority as the social events are for their external power, so that scenes of the one appear to **alternate** on a par with scenes of the other. Or it may seem like a desperate attempt to wrest a normal life out of the pervading horrors, hence to appear as a **concurrent** overlay on the upheaval, one that might even have depended on the turmoil for its occurrence. Or it may seem to consist of stages whose unfolding **correlates** with the developments in the war.

5 CONCLUSION

This chapter has presented the beginnings of a framework that will lay out the main structural delineations of narrative and of the larger narrative context. The framework can be used to guide the analysis of particular narrative works. But it also links up with endeavors in other fields in cognitive science and the humanities (including the author’s own work in linguistics) to contribute to progress toward an integrated understanding of conceptual structure in human cognition.

Notes

1. This chapter is a greatly revised and expanded version of Talmy 1995b.

For our discussions on the material of this chapter, I am especially indebted to the editors of the volume in which the original version appeared—Gail Bruder, Judy Duchan, and Lynne Hewitt—as well as to the other members of the narrative research group at SUNY Buffalo, including Bill Rapaport, Erwin Segal, Stuart Shapiro, and David Zubin. My thanks as well to Emmy Goldknopf for her comments on later drafts.

2. This framework can also characterize a diachronic change of structure in the narrative context, but this aspect is not developed here. We might simply note that, with respect to narrative structure, within any one historical tradition the

general tendency seems to be for new points of articulation to gradually develop. That is, some set of elements that had previously appeared together to constitute a single packet can in time be broken up into component parts by innovative producers of narrative. It further seems that an articulation of this sort that can show up late in one tradition may have been present early in some other tradition. Thus, some articulations that have appeared only recently in the history of Western literature have long been present in the narrative of some traditional folk cultures.

3. There is much overlap between the work of Genette (1980) and other structuralist narratologists, and the approach put forward here. But our approach is based on a cognitivist perspective, and our framework is based on an assessment of cognitive structure and process.

4. Kinetic sculpture is the only item on this list that does not strictly conform to the aegis of successively revealing different parts of itself, since the whole of the sculpture can be seen at all times. But it could be argued that its different states of conformation constitute different “parts” of the sculpture’s totality.

5. While a wide variety of temporal textures may structure our experience and narrative works, the grammatical (closed-class) forms of languages are limited to the expression of only a small subset of these textures, with such typical meanings as ‘durative’, ‘punctual’, ‘iterative’, and ‘telic’—collectively termed “aspect.”

6. Detailed linguistic treatments of these spatial properties can be found in other chapters of this volume, as well as in a number of works by other authors, such as Herskovits (1986).

7. If group-level psychological factors may be adduced outside the narrative proper, they can be seen at work in collaborating coauthors, a live audience, or the cast of a play.

8. It is possible that we have two different cognitive subsystems for psychological ascriptions. One subsystem would ascribe individual personal psychology to a material entity, while the other ascribes an atmosphere to a region. Accordingly, something that could be conceptualized as belonging to either category could be amenable to either type of ascription. For example, in a story, a house in which strange bad things happen could be presented either as an evil entity in its own right (or one controlled by an evil spirit), or as a venue that an eerie atmosphere pervades.

9. Note that this parameter is readily distinguished from the earlier parameter of density. That parameter pertained to a fixed region and the number of elements densely or sparsely dispersed throughout it. The present parameter, in its discrete usage, pertains to a fixed number of elements and whether they are scattered throughout a particular region or drawn together within it.

10. It is possible that the cognitive construct that is most salient in consciousness in the individual in some cultures tends not to be the set of experiences that he associates with the sequential continuity of his own personal identity, but rather a set of experiences that he associates with the larger group or with his role in the group.