Chapter One

The Sphere of Attention is
Theme, Context, and Margin

First thing in the morning, I shuffle downstairs to greet the dog and let him outside. He spins a couple times while I unlock the door, then he bounds into the garden. I sit on the stoop to keep an eye on him. What have I attended to in these 30 seconds? How many items have captured my attention, and is there anything invariant in the way this information has been processed?

When something captures our attention, or when we concentrate or pay attention to something, it is presented within a context. There is attention to the dog as focus within the context of the boundary of the yard. I attend to the dog under the perspective and orientation of the boundary of the yard within which he is allowed to roam. So I am conscious of this context, but not in the same way as I focus on the dog. Beyond my concern with the yard, there is a much larger “context” as well. My activity happens within the world in general. I infrequently wonder about this fact; nonetheless this all-encompassing horizon of the world forms a sort of ultimate experiential backdrop for this mundane drama of watching the dog. This all-encompassing world is subtly announced in the margin in the sphere of attention—the house next door, the sky, the birds rustling through the hedge, the hill as it unfolds toward the street. All of these are somewhat removed from my concern with the yard which is the immediate context for the dog, and I hardly pay attention to them, if this means that I focus on them or that they form the immediate context for the focus. Items like the house next door are peripheral, marginal, and they seem to quietly announce a general world as the horizon for what I attend to. What else is marginally presented in this mundane scenario? My corporeity and existence as a temporal being are announced in the same way. For example, the facts that I am sitting, slightly uncomfortable, chilly, etc., and that time is passing are presented marginally.

Working from the center of the sphere of attention to its outer shell, there are three dimensions, each distinct but related to the others in ways that will be shown: thematic attention (attention in the dimension of theme or focus), the context of attention (consciousness in the dimension of thematic context), and the margin of attention (consciousness in the dimension of margin as halo and horizon).

Like the dog in the example, the theme is the focus of attention. It presents more or less unitary content, centrally consolidated and segregated.
Theme, Context, Margin

from the background. The theme is attended to within a thematic context and emerges from it. The presentation of content in the thematic context, like the yard for the thematic dog, is consciousness of whatever is materially relevant for the theme. In the margin, we are present peripherally to the streaming in attending, embodied existence, and the environing world, and these orders of existence are ever-present. The margin also has a crucial role in human subjectivity.

The three experiential dimensions discussed in this book are inspired by the work of Aron Gurwitsch (1901–1973) on the field of consciousness. Gurwitsch taught at the New School for Social Research and has been credited (along with Dorion Cairns) for bringing phenomenology to the United States (Embree 1989). He had the fortune to study with Edmund Husserl (phenomenology) and Adhemer Gelb (psychology) and was an astute interpreter, scholar, and critic of William James’ work. When Gurwitsch taught at the Sorbonne, Maurice Merleau-Ponty was among those present in his lectures on Gestalt psychology. (Note that I will capitalize “gestalt” when referring to the discipline of Gestalt psychology, but not otherwise.) Gurwitsch’s magnum opus is The Field of Consciousness (1964), in which he analyzes human conscious life from the perspectives of phenomenology and Gestalt psychology. As will become clear, I see attention as the central feature of human life and of Gurwitsch’s work, and so I use attention as the touchstone when I interpret and advance Gurwitsch’s findings about consciousness.

I claim that attention can only be properly researched once it is understood to be the center of a sphere of attention, a process that presents content in three dimensions, not one. This means whenever there is thematic (focal) attention, there is also coordinating contextual and marginal consciousness, each operating according to different principles of organization. Why then shift the problem of context from the auspices of the “field of consciousness,” as Gurwitsch would have it, to the sphere of attention? Or also, why expand any and all accounts of attention beyond the theme into other dimensions in consciousness (contextual and marginal)?

Expanding the sense of what attention is creates a parallelism between current psychological research, including neurological discoveries, and phenomenology, especially Gurwitsch’s work. As each side advances, each can gain from the other. These possibilities are discussed below. For example, Gurwitsch’s philosophy can help interpret experimental data, set research agendas, and define experimental paradigms in attention research. Lab work can explore and articulate Gurwitsch’s transformation principles expanded upon and discussed in Chapter Three, which are principles of modification that involve
each of the three dimensions. Researchers can analyze the nature of the thematic context and margin so that the regions, modifications, and conditions of these domains and processes are unveiled in a way that is only possible with the recognition of these two domains as part of the overall picture of thematic attention. Moreover, as discussed later, identifying the essential relation of marginal consciousness to thematic attention helps researchers make sense of non-egological subjectivity. When Gurwitsch’s philosophy of consciousness becomes a philosophy of attention in this expanded sense, the relation between attention and consciousness is clarified and his philosophy becomes more evidently systematic, and accords better with current attention research. In a complementary way, the new definition of attention as necessarily involving three dimensions makes psychological laboratory results more relevant and unifies what we know about attention. But the main reason to expand the account of attention to necessarily include what is beyond the attentional focus is that empirical research is already expanding it. Empirical research in the leading psychology and cognitive science laboratories supports the claim that attention unavoidably involves contextual and marginal consciousness as described here. Thus one of the goals of this book is to bring to light the gold that already has been mined. Chapter Two provides the evidence for this claim.

Theme is Central Focus

The theme is that which forms the center of activity in the sphere of attention. Inspired by William James, current empirical researchers call it the focus of attention, and it is the “target” for the subject in an experiment. To say that content, information, or data is attended to thematically means that this content attempts to consolidate as a unit, as a center in attention segregated from its background. This coherence that enlivens and is always the end for constituents in thematic attention is called gestalt-coherence—a functional significance of the constituents of the theme for the whole (Gurwitsch 1964, 138 and 358). The dog in the example is not reducible to its parts, as long as the dog as a whole is the theme. Also, I may notice that the dog’s leg has an arresting wound, but now the wound is thematic not the dog as a whole, and a significant transformation in the contents of attention has been achieved in singling out this wound. I will talk about attention transformations in Chapter Three. As long as the dog is my theme, even while he wanders in the garden, everything about him that is achieved in thematic attention, no matter how vague, clear, complete, incomplete, etc., contributes to maintaining the consolidation and segregation of the dog as the central unit within a thematic context.
A quick reflection on any segment of our own experience probably reveals the “jumpiness” or “shiftiness” of this central dimension in attention. Sometimes we dwell on a topic, often we move or bounce from one semi-complete thought to another. What counts for achievement in thematic attention is not only a well-formed theme, which means a fully explicit, clear and complete whole (Gurwitsch 1964, 103, 336n). In a sense, this well-formed theme is the “goal” of gestalt-coherence, although we must be careful here since some content may not admit of completeness or stability simply based on the nature of the content. Anyway, the theme is often interrupted by a distracting marginal item that captures thematic attention, like the surprising wound on the dog’s leg or the sudden high decibel whirring of a gas-engine weed-cutter next door, or in a different vein, the fantasy that grows into thematic attention of being able to talk to dogs, or the thematic attention to the Cartesian concept of dogs as robots. A theme may be incomplete, somewhat fragmented, evanescent, or alternatively almost instantly well-formed.

Embodied attending in the world is essentially active and lively—in fact it is our life!—so that we can’t help but keep moving forward attentively. Jean-Paul Sartre’s metaphor for this essential activity of the human being is skiing or sliding (glissement), as if one was on a slope of life and had no choice but to project forward down the slope (1956, 582–585). One can linger as one moves forward, one can try to neatly complete and tie up all the things one pays thematic attention to along the way, but to do so perfectly is impossible. For even the transformation between two well-formed themes, what William James called “transitive states,” is thematic attention (James 1981; see Gurwitsch 1966). Still, in each case of theme formation, and we never stop attending thematically, some content is focal; it is central, consolidated, and segregated from the thematic context, or becoming so.

Within the theme itself, the content is not necessarily homogenous or horizontalized. Some content can take a more dominant or chief role than others. For example, suppose as I glance around the garden the two long rows of flowering impatiens capture focal attention, I attend to the grouping thematically. The double row is one thing, as may be my friend’s recited poem, a stretch of ocean, or a crowd of people, that is to say, it is a theme organized by gestalt-coherence. Yet the rows of impatiens may have constituents which are formative for the whole, such as the first several flowers in each row. These are not separate themes, but they do have a privileged position in the gestalt-coherence of the theme, so that other constituents are organized or formed according to these. This difference of emphasis which may be presented within the dimension of the theme (or perhaps in any more or less well-formed gestalt) is the
difference between *formative* constituents and *formed* constituents (Gurwitsch 1966, 190 and 209; cf., Vecera, Behrmann and Filapek 2001, 319). But selecting these several flowers in one of the rows is a transformation in attending. Singling out these several as theme replaces the rows of flowers with a new theme (i.e., this smaller grouping of several flowers) that now has new formative and formed constituents (as well as new thematic context relations).

**Thematic Context is Relevancy**

The *thematic context* consists in all that is presented as relevant for the theme. The theme emerges from the context as a figure emerges from a background. And as it does so, it segregates itself as distinct from the context but relevant to it, and organizes the context (Gurwitsch 1964, 342). Items in the thematic context are directed toward the theme as center. Gurwitsch most often calls the thematic context “thematic field,” but I prefer the former (or simply “context”) because it is more descriptive, it squares better with the language of psychology on attention, and it discontinues the field metaphor (see Gurwitsch 1964, 354–355).

The organization that pertains to the thematic context is *unity by relevancy*. Relevancy here means that the contextual contents have some material relation between them, that they have mutual concern and are not indifferent to each other (Gurwitsch 1964, 341; on relevancy see Embree 2004c). After all, a context cannot be a context without some integration and togetherness at a more fundamental level than simply being presented at the same time with the theme. The theme and thematic context are unified by the material relevancy of the context for the theme. Also, any content in the thematic context is unified with other content in the thematic context by their shared relevancy. Material relation or material relevancy designates an “intrinsic” relationship between the contents of the theme and thematic context. Gurwitsch (1964, 341) writes, “A theme presents itself as pertaining to a certain thematic field because the material contents of both the theme and what appears in the thematic field concern each other. The theme refers to items other than itself which are relevant to it and, in being referred to, are experienced as relevant” (see also 1966, 212). The thematic context is a network of non-central gestalts which have mutual implications between each other, and between themselves and the theme as central gestalt. This context extends indefinitely by pointing references and implication (Gurwitsch 1964, 379–380).

The content nearer the theme is experienced as more important or more intensely related to the theme than the content in the more remote zones (Gurwitsch 1964, 338, 353, 379; cf. Husserl 2001, 180). We can simultaneously
be conscious of content that is more relevant to the theme and to other content less relevant. However, even the more remote zones of the thematic context present or presentationally imply content that is relevant to the theme and to the rest of the thematic context. In this way the thematic context is a whole, even though there may be a gradation of intensity within it. The thematic context does not have to be completely elucidated, and it rarely is. It may present itself as compact, diffuse, dim, and the gestalts which constitute it may be complete or incomplete, stable or evanescent, etc. When one adds to this the fact that all dimensions in the sphere of attention are essentially dynamic and active it is easy to see that the content of the thematic context does not have to be fixed; it may transform, shift, and fluctuate. Above all, the thematic context is not the theme, or a secondary theme. It is defined by its relation to the theme, a more or less elucidated unity by relevancy for the theme.

As I watch the dog within the context of the garden and he nears the tree with the robin’s nest, I may be conscious of many things. But as long as the dog is presented as thematic, the context is organized around the lines dictated by that theme. If we suppose that I am contextually conscious of the dog’s relation with other wildlife, and am attending to the dog as focal within this perspective and orientation, then the bird’s nest is likely to be part of the thematic context more intensely attended to. Other robins, or the species as a whole, may also be relevant within this context, but may be only dimly implied, as perhaps with mammals, reptiles, etc. Yet if a sparrow suddenly swoops in and splashes into the birdbath, this new item may be accommodated within the context without any major modifications of it (unless it has captured thematic attention). This is because the unity by relevancy extends indefinitely along general lines, and in this case those lines include the contextual consciousness of this new gestalt, which is now part of the thematic context zone closer to the theme. I have not made the sparrow thematic in this example; it so happens that the sparrow has not captured my focal attention, which is still centered on the dog.

**Margin is Streaming, Body, and Environing World**

The margin presents content that is external to the relevancy that holds between the theme and thematic context (Gurwitsch 1985; and 1966, 267–286; and 1964, 414–420). What appears in the margin is irrelevant to the theme, but is presented nonetheless—namely, as irrelevant. The margin in the sphere of attention is all that is co-present with the theme and thematic context, but is not materially relevant to them, not even as context. Anything could be added to the margin without affecting the unity by relevancy between theme and context. For example, as I watch the dog in the garden, in the context of the dog minding his
boundaries, an airplane aurally appears on the scene, the gentle roar of the jet engines grows and then fades, and a whirling breeze shakes the hedge near the dog. As I am marginally conscious of the plane and the shaking hedge, which is to say, as they are presented as irrelevant to the thematic dog, their presence does not enter into the gestalt relation in the sphere of attention between the dog and his boundaries. Although the plane and the shaking hedge could become thematic themselves, this would take a substantial transformation in the sphere of attention (a margin to theme succession of content), so that the dog and its thematic context was replaced with new content and relations. In short, the gestalt-connection of unity by relevancy puts marginal content outside the focus and its context, which is to say, marginal items are presented as peripheral to the theme, not relevant to it.

It might seem that marginal consciousness is merely accessory to thematic attention, and so is dispensable. In fact, the margin is indispensable; it is always presented, there is always marginal content in the sphere of attention. Gurwitsch dedicated an entire work, published posthumously as *Marginal Consciousness* (1985), to the richness of the margin. In it he expands on other formulations (1964, 1966) to show how the margin consists of three ever-present domains: the stream of consciousness (phenomenal time), embodied existence, and the perceptual world. In order to maintain consistency throughout the current study, the stream of consciousness may also be called “the streaming in the sphere of attention” or just “streaming in attending,” and the perceptual world may be called “the environing world,” where the modifier “environing” as gerund for “environment” in environing world is taken in a very broad sense, as will be seen. No matter what is thematic, these three “orders of existence,” as Gurwitsch calls them, are always presented marginally. For example, as the dog is attended to thematically, and its allowable boundaries in the yard are contextual, there is a peripheral or marginal consciousness that time is passing and previous attendings are more or less connected with current ones (streaming), that I am sitting rather than standing (embodiment), and that the house is behind me (world). The three marginal realms are presented as irrelevant to the theme. This marginally presented dynamic embodied attending in the world is the existential locus of subjectivity—dynamic (marginally presented sector of phenomenal time or the streaming in the sphere of attention), embodied (marginally presented sector of embodied existence or kinesthetic sense), in the world (marginally presented sector of the environment). I take up the issue of subjectivity and the sphere of attention in Chapter Five.

The margin is made up of these three domains, the streaming in the sphere of attention (phenomenal temporality), embodiment, and the environing world.
Each of these three domains has two regions, the halo (implied by the term “sector” just above) and the horizon. The whole streaming in the sphere of attention, the whole of embodiment, and the whole environing world are not marginally presented. A sector of each is marginally presented in the halo, and this sector implies the whole in the horizon. Gurwitsch introduces this distinction between halo and horizon in a shorter treatment of the margin (1966, 268), but does not keep it in the longer treatment in *Marginal Consciousness* (1985, xliii-xiv). The two treatments might not be compatible, as Lester Embree the editor of *Marginal Consciousness* points out in his “Editor’s Introduction.”

The halo is a certain segment or sector of each order of existence and is always marginally presented within the context of the order of existence as a whole, which is the horizon. Gurwitsch (1985, xliii) writes, “There is no limit on the marginal data which may be co-present with a theme at any moment in our conscious life….These include a certain sector of our environment and some of the things which happen to be found there; a non-perceptual knowledge of those parts of our actual environment which do not happen to be perceived, such as the things behind our back; a more or less distinct awareness of our embodied existence, e.g., our bodily posture, etc.” This marginal consciousness in the halo presents a sector of the horizon of that order of the existence.

Consciousness of marginal content has an inner/outer structure. Gurwitsch did not put it this way, but I see it assumed in his work *Marginal Consciousness* (1985). The halo as “inner” and the horizon as “outer” is not the same as the center/context structure of the theme and thematic context, since the content of the halo and horizon are intra-dimensional not inter-dimensional. For example, when I am marginally conscious of the hedge and sky, these halo presentations have pointing references to the world in general, however diffuse or indiscriminate that larger horizon may be. The same holds for the marginal consciousness of the current moment as part of the streaming in the sphere of attention; and the kinesthetic sense as pointing to the fact of my corporeity, no matter how indistinctly the latter is presented. The halo is that part of the margin that most closely adjoins the thematic context, and might be relevant to the theme under another perspective, but is not relevant under this one (Embree 1985, xxx). Each sector presented in the marginal halo presentationally implies the marginal horizon as a more or less indefinite context for that sector.

The overall point about the margin for now is that the margin is a necessary component of the sphere of attention, such that what is presented marginally is irrelevant to the attentional theme and thematic context. Also, the margin is a rich dimension in the sphere of attention, and as will be shown, is the “center” of subjectivity which is not presented as center.
Psychologists, including cognitive scientists, and other experimental psychologists and neuroscientists, use the field metaphor in discussing perception, consciousness, attention, etc. Perhaps the emphasis on vision in all this research and so on the visual field is the reason the metaphor is pervasive (for a historical perspective, see Crary 1999, 190–196). Of course, Gestalt psychologists such as Kurt Koffka made the field a central working metaphor, and William James invokes it in his famous *Principles of Psychology*. Philosophers not in the continental, phenomenological tradition freely use the field metaphor, for example John Searle and others. But Gurwitsch, Husserl, Merleau-Ponty, Sartre, and other phenomenological philosophers use it as well. As noted, Gurwitsch’s major work is titled *The Field of Consciousness*. Merleau-Ponty’s *Phenomenology of Perception* includes a chapter titled “The Phenomenal Field.” In a chapter on attention and judgment Merleau-Ponty (1962, 29) notes that “The first operation of attention is to create for itself a field, either perceptual or mental, which can be ‘surveyed’ (überschauen), in which movements of the exploratory organ or elaborations of thought are possible” (see also 1962, 406). Philosopher Richard Aquila (1998) has recently tried to rehabilitate the notion of the “field of consciousness” in an intriguing examination of Sartre and Husserl, so that it has more depth and vitality. But the account is limited by the field metaphor itself. Generally speaking, the field metaphor can be misleading since it denotes only an object-orientation of the process of attending, and a sort of flatness or two-dimensionality. For conveying the fullness of attention processes, which includes subjectivity as a function of the sphere of attention, the sphere metaphor is superior in the way that a ball has more depth than a disk.
Gurwitsch’s *The Field of Consciousness* (1964) presents the most systematic statement of his philosophy. Yet a close reading shows that what he means by “total field” is much more than the word usually conveys (1964, 4, 320), and his other works on the same topic of the field of consciousness also reveal an unnecessary distance between the metaphor and the phenomena being described. Gurwitsch (1966, 267–268) writes that the total field of consciousness can be symbolized by a circle: “The theme with which we are dealing occupies the center of this circle; it stands in the thematic field, which—to abide by the metaphor—forms the area of the circle; and around the thematic field, at the periphery as it were, the objects of marginal consciousness are arranged.” Following what Gurwitsch actually says about each of these three dimensions, their make-up, depth, and relational arrangements, I would rehabilitate this statement to say that attentional processes can be symbolized by a *sphere*: The theme with which we are dealing occupies the central dimension of the sphere; it

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*Figure 1. The sphere of attention. The three dimensions are theme, thematic context, and margin. Each is deep, not flat, and each names a function or process involved in human attending. Content in the thematic context can be more relevant (near) or less relevant (remote) to the theme. Content in the margin can be related to the theme (halo) but not relevant to it, or not related (horizon). The attending subject is the sphere of attention in these three dimensions. The sphere of attention is not an object for a subject. We do not have a sphere of attention, we live it in these three dimensions all the time, even in the special case of reflection or self-attention.*
stands in the thematic context, which—to abide by the metaphor—forms the surrounding ball; and around the thematic context, at the periphery of the sphere, the objects of marginal consciousness are arranged. Figure one presents a rendering of the dimensions in the sphere of attention.

A circle is a planar cross-section of a sphere. Mathematicians call the largest circle whose plane passes through the diameter of the sphere a “great circle.” There are infinitely many great circles for any sphere. For example, imagine passing a wooden ball snugly through a metal 0-ring. The outer surface of the ball in contact with the ring at the most snug point is a great circle of the sphere. Gurwitsch’s “total field” as a circle metaphor is too easy to imagine as a great circle of a sphere. In other words, the field metaphor can lead to associations and conclusions about attention or consciousness that implicitly assume that the total area of concern is a planar cross-section of what it should be. One may be led to envision that the plane of the great circle is the subject of discussion, when it is the three-dimensional sphere that should be envisioned (see Gurwitsch 1966, 138, on the metaphor of consciousness as dual parallel planes). Later I will discuss how the sphere metaphor does not lead to the sort of subjectivism that plagues Cartesian-inspired philosophy and strong representationalism in general, or to some “ego-centric predicament” as Sokolowski (2000, 9) puts it.

It is a simple matter to recognize that the emergence of a theme from a thematic context, like a figure emerging from a background, necessarily involves the kind of depth that the metaphor of a sphere of attention (rather than a field) seems to capture best. As Merleau-Ponty (1962, 13) pointed out, the background does not stop at the figure, but goes behind it. Also, the margin recedes, envelops and pervades in a way that makes it distinct from the theme and its context, thus adding another dimension of depth and thickness to the moment of attention. But each dimension also has a depth. The theme, unless it is extremely evanescent or fleeting, has dominant constituents that “mark” its physiognomy, as in the flowering impatiens example above. Gurwitsch called these the “formative constituents” of the theme, and they have a sort of precedence over “formed constituents” of the same theme. For example, a crowd of people may be marked by two or three individuals or smaller groupings of people. As a whole, it is one gestalt—a crowd—but there is already a sort of depth built into the theme here.

In the thematic context, the contents are usually not arranged as a horizontal background in terms of position, value, or intensity, as if they were in a field. For a simple visual example, the context can be background and foreground simultaneously, as when the statue I am admiring is attended to as placed behind
the formal boxwood hedge and in front of the gnarly apple trees, which themselves are framed by the old brick buildings. Also, as Gurwitsch described (Gurwitsch 1964, 338, 353, 379) and as Ingrid Olson and Marvin Chun (2001, 1309) have shown, content nearer the theme has more effect on the theme, and this contributes to the depth, subtlety, and thickness appropriate to the sphere metaphor. In thematic contexts that are sufficiently elucidated, there is a gradation of intensity of relevance, from more intense nearer the theme to less intense farther away from the theme. For example, it may so happen that the contextually presented boxwoods are more relevant to the statue as theme than the sidewalk near my feet which is also contextual. But the depth of the thematic context never ends. It extends indefinitely by pointing references, so that the whole of possible relevant content extends into a “more” that becomes implied by what is more intensely presented (Gurwitsch 1964, 379). Here we really get a sense of the utility of the sphere metaphor. For the truth is that each item of the thematic context is tinged with association to other thematic content and possible thematic content, and this pointing is in every direction. The connection in the thematic context is not just a multi-rayed, planar, outward progression from the points near the theme, like the extension of an open disk along the lines of the plane of a great circle. The “depth” of the thematic context, what Gurwitsch calls the thematic field, is the dynamic ball of the sphere whose contents ultimately imply the indefinite but relevant.

Since it presents content irrelevant to the theme and thematic context, the margin adds another significant dimension of depth. The margin is a region of exclusion and inclusion. It is excluded from the relevance that the theme and thematic context have for each other. As noted above, this does not mean that the margin is dispensable. It is inclusive because marginal consciousness is a sense of the environment or material world, of embodiment, and of the streaming in attending. These three are ever-present marginally with the theme. Halo and horizon present another level of depth and thickness for the margin. In contrast to the marginal horizon, the halo connotes a domain of the margin where some items are externally related to the theme or thematic context, but are not relevant to their content (Gurwitsch 1966, 268). The overall point here is that the margin not only presents another level of depth with respect to theme and thematic context that makes the sphere metaphor more appropriate than the field metaphor, but that the margin itself is not planar; it is rich and deep.

There is much more to be said about the sphere of attention, and I reserve these discussions for later chapters. Before moving on, however, I should briefly clarify the relation between attention and consciousness. This book is not called the sphere of consciousness because I take attention to be the significant factor
or central organizational feature of our conscious life. In other words, contextual and marginal consciousness are so, only as associated with the attentional theme. Therefore I claim that one can only define attention by taking account of (contextual and marginal) consciousness, and one can only define consciousness by taking account of attention. I believe that one could even construe contextual and marginal consciousness as unique and highly constrained types of attention, but this argument is difficult to make and musing about it here would cloud the purpose of this present study (see Arvidson 2004). The approach I take throughout affirms the almost universal definition of attention as that which is presented as centrally focal, and allows me to speak most fruitfully to psychologists, phenomenologists, and others about the rest of the sphere of attention, which is the innovation of this book, namely, context and margin. In sum, thematic consciousness just is focal attention, and is the active center of the sphere of attention, the processing in the other two dimensions of this sphere of attention are contextual and marginal consciousness.

Since psychologists and cognitive scientists (I will often use both terms in order to be inclusive, but I will almost always mean both groups even if I say only one of them) have the most to say about attention, it is appropriate to get an initial feel for their views. This last section of this chapter does that through the prism of problems of context.

**Problems of Context in Psychology and Cognitive Science**

Let me restate the three dimensions in the sphere of attention that are the focus of this study. *Thematic attention* is centrally focal attention. Thematic attending allows content to become segregated from the thematic context and centralized within this context. The *context* of thematic attention allows content to become consolidated as non-centralized gestalts, relevant to the theme and to other thematic content (rather than being thematic themselves). The *margin* also allows content to become consolidated as non-centralized gestalts, but segregated from the theme and thematic context, and co-present yet irrelevant to them.

I agree with Gurwitsch when he says that a full and fruitful treatment of what he calls “consciousness” and what I would call the sphere of attention must address context as the central problem. “To develop a field-theory of consciousness is to embark upon an analysis of the phenomenon of context in general, as well as upon the eventual disclosure of different types of contexts. By this we mean types which are distinguished from one another by virtue of differences involving the organization principles which prevail in the several types” (Gurwitsch 1964, 2–3). An analysis of the phenomenon of context in
attention research means throwing the laboratory doors open to more noteworthy findings and wider applications.

The significance of attention research rises or tumbles on the back of the problem of context and attention. Historically and in current scientific research, “unattended stimuli” refers to stimuli that are somehow presented, “irrelevant data” are often relevant, and “unselected areas of the field” are somehow noticed. For Gurwitsch and today’s researchers, attention refers exclusively to the achievement of the target, focus, or theme in the “field” of presentation. But restricting the conclusions of attention research only to the theme creates the dilemma of what to do about content outside the theme which is nonetheless processed. If one understands that focal attention is the center of a three-dimensional sphere of attention, each dimension with its own organizational principle, then the content outside the theme is presented either contextually or marginally. The full relevancy of attention research reveals itself when the attentional life of a human being, and indeed, its very subjectivity, is acknowledged to be a unified, dynamic, embodied processing in the world, which can be seen phenomenologically and experimentally to organize itself in these three distinct dimensions of a sphere of attention.

In a number of fascinating ways, attention researchers around the world are struggling with context. This struggle with context is not new, as Jonathan Crary’s (1999) study on perception and the history of attention research indicates. It is seen in William James’ work, an author that historically-minded psychologists studying attention appeal to quite often as the first word on attention research (see Arvidson 1998), when he distinguishes the focus from the margin, but also discusses fringes and transitive states. James claims that attention is selective attention—a withdrawal from or ignoring of some data or objects and a focusing on others (1983, 19). This claim anticipates the distinction in much subsequent research between attended and unattended information, so that one sees journal article titles such as “Detecting gaps with and without attention” (Shalev and Tsal 2002) and “Differential attentional guidance by unattended faces expressing positive and negative emotion” (Eastwood, Smilek and Merikle 2001). The “unattended” frequently turns out to be the context for the attended, other times it is marginal. Either way, within the thesis of a three dimension sphere of attention, it is still presented. The context and margin need more than a mere negative nod (the unattended). This new view of attention also helps replace vague terms introduced by James and still currently used, such as “fringe” and “transitive states” (e.g., Baars, 2003).

Over the last several decades, attention researchers in psychology, in particular in the cognitive sciences, have examined stimuli that are outside of the
focus of attention, that is, outside of the theme. And this examination is not always about distractors. There is robust experimental activity concerning facilitation effects, which is when stimuli occurring outside the focus speed up the achievement of the target as focus. Early on these effects were called “flanker effects,” and this term could mean either interfering with or facilitating the target (Eriksen and Schultz 1979; Miller 1991). The stimulus occurring outside the focus is active for the processing of the focus, has an effect on it, but is always defined negatively, e.g., as “unselected,” “unattended,” or “irrelevant.” The latter word shows the strange twists of locution that are often necessary when context and margin are not recognized as such. For even though contextual effects (the “flanker effect,” “facilitation effect,” etc.) are well established (Arvidson 2003b), the conclusion often amounts to this: irrelevant data were relevant.

In experimental paradigms, the success of the subject in attending is often measured by how well the subject has ignored everything but the target or focus. This means not only ignoring potentially interfering stimuli (i.e., marginal content), but also ignoring relevant stimuli (i.e., contextual content). At least this is considered “ignorance” from the experimenter’s point of view, since context is often invisible in the tally from that view, even though it might be highly significant for the subject’s achievement. Exceptions will be discussed in the next chapter. Colin Cherry’s (1953) famous dichotic listening task experiment is an early, easily repeatable finding that satisfies these expectations of contextual ignorance. Cherry investigated something like the “cocktail party” phenomenon of attending only to the relevant conversation in a noisy room. As analyzed and interpreted, such experiments are about noise, not about relevant context. Anything that is not designated by the experimenter as focal target, or that interferes with the achievement of the focal target, is often still considered “noise,” either explicitly (e.g., Hobson 1994, 176; Braver et al., 2001, 749) or implicitly as a function of the experimental paradigm.

The key words of “context” and “scene” are used ambiguously in attention research laboratories. Is the auditory scene everything left over after I have aurally focused what is relevant, that is, the scene is irrelevant? Or is the scene the relevant situation within which the theme is segregated as central? Caroline Bey and Stephen McAdams (2002) tested subjects’ ability to extract an unfamiliar melody from an auditory “scene” under a number of conditions, such as priming and distraction. Generally speaking, the prime can be any stimulus or condition that facilitates (facilitation effect) or interferes with (interference effect) the processing of the target stimulus (Arvidson 2003b). The title of the Bey and McAdams (2002) article, “Schema-based processing in auditory scene
analysis,” suggests that the experiments will examine the relation between theme and context, between the focus and the relevant information, situation, or co-processed scene for that focus. Instead the emphasis is on “analysis,” the analysis of thematic attention and its margin, excluding context (and scene in that sense). These experimenters certainly have a right not to test for relevancy and to ignore context, but the problem is that the word “scene” suggests some context relevant to focal processing. Should “scene” mean the relevant or irrelevant information co-presented with the theme? What makes a scene a mere environment rather than, say, a situation or context?

In the same journal, *Perception and Psychophysics*, researchers David Irwin and Gregory Zelinsky (2002) tested subjects’ ability to visually remember a “scene” operationally defined as seven objects (such as a teddy bear) in one of seven fixed locations in a baby’s crib. The experimenters state that “scene perception” involves noting and remembering the items in the crib (rather than the crib itself). The subjects looked at the scene and tried to remember which object was in which position before the scene disappeared. In this experiment the “scene” is really defined by the researchers as each individual object or their various possible groupings, without the crib! The experimenters assume a scene as relevant context (the crib) and discuss various transformations of thematic attention (e.g., the grouping that occurs through synthesis or singling out), as if this context was irrelevant to thematic attention. In other words, the experimenters are not measuring scene perception, if that is understood as something more than thematic attention, but simply thematic attention.

John Henderson and Andrew Hollingworth (2003, 61) similarly manipulate what they call “complex real world scenes” to examine eye movement (attention) and visual memory. As in Irwin and Zelinsky (2002), the scene perception is perception within the scene, serial themes within one scene, without recognition of this context as context. Also, unless we are in a very odd world, “complex real world scenes” are not displayed in “800 x 600 pixels x 256 colors on an NEC Multisync P750 monitor driven by a Hercules Dynamite 128/Video graphics card” while the observer of the “real world” chomps on a bite bar (Henderson and Hollingworth 2003, 61). The use of “scene” is ambiguous because other experiments freely use the term to denote something more than thematic attention.

In experiments that show that object recognition is mediated by extraretinal information (i.e., as information in context and margin) Daniel Simons, Ranxiao Wang, and David Roddenberry (2002, 529) note that in object recognition and detection experiments the “real world” should be more like the real world: “These studies of individual object recognition illustrate the importance of
considering the conditions under which object recognition naturally occurs. Studies presenting objects in isolation on a computer display would be unlikely to discover differences between viewpoint and orientation or effects of background information. By looking at object recognition in a real-world context, we can gain a better appreciation for the mechanisms underlying our ability to recognize the same object from varying perspectives. I agree. In their pitch that advanced virtual reality techniques should be used to create virtual environments for the measure of visual attention within scenes (especially “way-finding”), Heinrich Bülthoff and Hendrik van Veen (2001, 233) note that “Real world situations are so different from the stimuli used in classical psychophysics and the context in which they are presented that applying laboratory results to daily life situations often becomes impractical, if not impossible.” Their solution, discussed in a later chapter, is to use virtual reality technology to enhance the ecological validity of the stimulus, which includes accounting for the variables of the scene in which thematic attention occurs, instead of “zeroing-out” these variables.

In addition to “scene,” the use of “context” can be ambiguous, but often it is not. For example, in examination of lexical processing, context is clearly used to mean the relevant information for the theme. Presented with a suggestive partial sentence and instruction to complete the sentence with the first word that comes to mind, the subject will be more likely to supply one word than another—“Mary parked her car in the _____..” Given the context, “garage” or “lot” are more likely to be supplied than “lake.” Lexical processing researchers use the close tie between lexical context and theme to investigate facilitation and inhibition effects in attention and memory (Davies and Thomson 1988; Horton and Mills 1984; Neely 1991), and even humor (Lippman, Sucharski, Bennington 2001).

In contrast, in a series of experiments that also involve attention, Elizabeth Marsh, Gabriel Edelman, and Gordon Bower (2001) investigated “context memory” to name what I would call marginal consciousness. The experimenters varied the “context” to determine the effect of the source of memory generation on the amount recalled. But the “contexts” varied were different rooms or different computer screens. The experimenters instructed subjects under the different conditions to recall where they had studied the words to be remembered, and called this “context memory.” This is clearly a different sense of context from the lexical processing experiments. It does not ask for information relevant to the studying of the word, which may or may not have been the spatio-temporal environment, but information relevant to the current instruction of the experimenter. So does “context” refer to what was relevant in studying or
what is relevant in recall? It is unlikely that the room was relevant to the word studied at that time. It is also not relevant to the recall, since it is the theme to be achieved (the target) in the recall. “Context memory” as used by these researchers can only mean a memory for what was irrelevant in the studying situation. This is a very different sense of context from that used by many lexical processing researchers (e.g., Jordan and Thomas 2002).

A way to try to account for context without calling it that is to bifurcate the sphere of attention into that which is focally selected on the one hand, and hence thematic, and general “awareness” or “arousal” on the other. Neuroscientific examinations of attention processes have long used this distinction and continue to do so (e.g., Cohen 1993; Coull 1998). The distinction is useful in some paradigms of attention research because the onset of a change in awareness can be measured physiologically (Kanwisher 2001). This is one reason why the orienting in attention is heavily researched by neuroscientists, since it forms a nexus for brain and cognition (Posner 1995, 617). The terms arousal and awareness, however, are vague and do not capture the function and importance of thematic context and margin, or the distinction between them. Some have tried to make distinctions in “awareness” so that it can be operationally defined and treated more precisely (Koch and Crick 1994, 108). But I would argue that what is needed is the delineation of organizational principles comprising context and margin set forth by Gurwitsch and advanced here, as long as the processing in each dimension is precisely defined.

Unfortunately, the spotlight metaphor of attention has been influential in guiding research and is still around. It is unfortunate because if attention is like a spotlight, then attentional context is doubly dimmed. First, because the spotlight metaphor only divides the sphere of attention into that which is illuminated (the target or theme) and that which is not. Second, there is no way to meaningfully account for presented context by using the spotlight metaphor of attention. Gurwitsch thoroughly critiqued it in 1929 (1966, 202, 205), and others have followed (e.g., Laberge 1995; Arvidson 1996). Still, its long history in psychology and philosophy up to the present means that the spotlight metaphor is a broadly based assumption (see e.g., Pinker 2002). This history includes Husserl (1982, §92), Posner (1980), Treisman and Gelade (1980), Baars (1997), Ohman, Flykt, and Esteves (2001), Müller and Hübner (2002), and others. The spotlight metaphor allows only on/off, illuminated/unilluminated. This one-dimensional interpretation of the sphere of attention as either focal attention or marginal “non-attention” squeezes out the phenomenon of context. As an object of research, attention becomes irrelevant to human life under the light of this metaphor. Not only is context denied a place in attentional processing but it
becomes impossible to account for the general richness of attention processes, such as transformations in attending. Following Gurwitsch, I believe that attention is more about the content of what is attended to, its organization and transformation of organization, than about the on/off illumination of a target area (Gurwitsch 1966, 222; Arvidson 2000).

Perhaps realizing the problems of context, some researchers (e.g., Mangun and Hillyard 1988) tried to account for context but keep the spotlight metaphor. By postulating a gradient in attention, the co-presented stimuli which constitute the context for the theme or focus are illuminated less brightly than the focus. This sort of gradient in the “field” of attention corresponds well also with a zoom-lens model of attention (Eriksen and St. James 1986), which is still being used (e.g., Pasto and Burack 2002). Yet the dimensional difference between thematic attention and its context is not demarcated by a gradient. There is certainly a gradient in the sphere of attention within each dimension. For example there is this sort of relation of emphasis between formative and formed constituents of the theme, and between contents in the thematic context that are nearer to the theme and those that are more remote, and the same with the margin. But these are intra-dimensional, and a gradient is not sufficient to account for inter-dimensional differences, like that between theme and thematic context (Arvidson 1992b).

Attention research often utilizes cues to prime the subject in some way, and cues imply context. The classic use of cues is seen in Posner’s (1980) research on cuing and covert attention (see Arvidson 2003b). In this case it was found that cuing a spatial location, e.g., on a monitor screen where a target was expected to appear, facilitated focal attention to the target even though the cue itself was “covertly” processed, meaning the subject did not turn their eyes toward it. The cue is not thought to be attended in the proper sense, yet it affects attention to the target. Writing in 1965, philosopher Errol Harris (1993, 407–408) had some wonderful observations about the status of cues: “To speak of a cue is to imply an activity of referring beyond the cue as presented. The word, therefore, has epistemological implications….In other words, they cannot function unless they are interpreted; and that can occur only if they somehow become features of an awareness within which they can be systematically interrelated. On the physical or merely physiological level they can serve as cues, but only if apprehended in some epistemological process of referring, comparing, hypothesizing, and judging.” The point is that when the target is achieved it is achieved within the context of the cue which preceded it. As we will see, the temporal context of attention has recently become a more popular
area of attention research, so that perhaps a “cue” can be better recognized as a constituent of the context for the targeted theme.

In sum, context is a problem in attention research today, and an expanded definition of attention, namely as a sphere of attention, can help bring context into phenomenological, theoretical, and experimental focus.