

**Describing Inner Experience?  
Proponent Meets Skeptic**

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# 1 Introduction

On a remarkably thin base of evidence—largely the spectral analysis of points of light—astronomers possess, or appear to possess, an abundance of knowledge about the structure and history of the universe. We likewise know more than might even have been imagined a few centuries ago about the nature of physical matter, about the mechanisms of life, about the ancient past. Enormous theoretical and methodological ingenuity has been required to obtain such knowledge; it does not invite easy discovery by the untutored.

It may seem odd, then, that we have so little scientific knowledge of what lies closest at hand, apparently ripe for easy discovery, and of greatest importance for our quality of life: our own conscious experience—our sensory experiences and pains, for example, our inner speech and imagery, our felt emotion. Scientists know quite a bit about human visual capacities and the brain processes involved in vision, much less about the subjective experience of seeing; a fair bit about the physiology of emotion, almost nothing about its phenomenology.

Philosophers began in earnest in the seventeenth and eighteenth centuries to describe and classify our patterns of conscious experience. John Locke (1690/1975), for instance, divided experienced “ideas” into those that arise from sensation and those that arise from reflection, and he began to classify them into types. David Hume (1739/1978) distinguished what we would now call images from perceptual experiences in terms of their “force” or “liveliness.” James Mill (1829/1967) attempted a definitive classification of sensations into the traditional five senses (sight, hearing, touch, taste, and smell) plus muscular sensations and sensations in the alimentary canal. However, despite such efforts, not even the most basic taxonomy of experience was agreed upon, and it is still not agreed upon.

The study of conscious experience acquired a more scientific look with the introspective psychologists of the late nineteenth and early

twentieth centuries. Researchers such as Gustav Fechner (1860/1966), Wilhelm Wundt (e.g., 1896/1897), and E. B. Titchener (1910/1915) presented carefully measured stimuli to subjects who had been trained to “introspect”—to take careful note of their immediately occurring (or just passed) experiences. These psychologists aimed to understand how these introspected experiences covaried with changes in stimulation. However, as is well known, after a few decades, behaviorism (which stressed measuring relationships between stimulus and behavioral response rather than stimulus and introspected experience) won the day in mainstream experimental psychology, driving out or marginalizing the study of consciousness. Subsequent elaborations of behaviorism, and later “cognitivism,” allowed more room for the postulation of internal states and mechanisms mediating behavioral responses, yet these internal states and mechanisms were generally assumed to be nonconscious.

Central to the behaviorists’ complaint about the introspective study of consciousness was the unreliability of the introspective method. Several decades’ work had yielded little consensus on even the most fundamental issues. John B. Watson, the early standard-bearer for behaviorism, criticized the lack of consensus in introspective psychology:

One psychologist will state with readiness that the attributions of a visual sensation are *quality, extension, duration, and intensity*. Another will add *clearness*. Still another that of *order*. I doubt if any one psychologist can draw up a set of statements describing what he means by sensation which will be agreed to by three other psychologists of different training. . . . I firmly believe that two hundred years from now, unless the introspective method is discarded, psychology will still be divided on the question of whether auditory sensations have the quality of ‘extension’, whether intensity is an attribute that can be applied to color, whether there is a difference in ‘texture’ between image and sensation and upon many hundreds of others of like character. . . . The condition in regard to other mental processes is just as chaotic. (1913, pp. 164–165)

The considerable truth in this complaint partially explains the success of the behaviorists’ overthrow of introspective methodology. The fact that introspective psychologists had failed to reach consensus about such issues revealed a serious weakness in their methodologies. Furthermore, much of the consensus they did manage to reach was undermined by an early-twentieth-century shift, among those still interested in consciousness, away from the early introspectionists’ focus on the basic “elements” of experience and toward a more holistic conception of a sensory “Gestalt” that could not be divided into individual elements. Thus,

despite the obvious importance of conscious experience to our lives, and its apparent ready availability for research, conscious experience had largely resisted systematic attempts at scientific description, and its study fell into disrepute.

Although research on consciousness has enjoyed a considerable resurgence since the 1990s, the most basic structural and methodological questions remain unanswered. With little examination, introspection has re-entered psychology and philosophy. Even hard-nosed cognitive neuroscientists ask their subjects about their subjectively felt experience while in the fMRI magnet. However, it should be clear from the history just described that such casual and haphazard introspection cannot be trusted to yield robustly replicable results and accurate generalizations. Furthermore, it seems to us that the introspective methods employed by most current researchers in consciousness studies are less careful than the methods used by introspective psychologists a century ago. Unless better methods can be found, we fear, the scientific study of consciousness may again stall. And if there simply are no better methods, the scientific study of consciousness may prove wholly impossible in principle: vacuous without introspective report, intractably conflictual with it. Scientists could perhaps elude this difficulty if they could find a way to study consciousness without the help of introspective report. We doubt that such an enterprise makes sense, but we will not argue the point here. We will assume that any science of consciousness must take, as a fundamental source of data, people's observations and descriptions of their own experience. Thus, a re-examination of the adequacy of introspective reports is of central importance to consciousness studies.

That leads us to the question that stands at the heart of this book: To what extent is it possible accurately to report conscious experience? Russ Hurlburt has argued that we can profit from the demise of classical introspection and create methods for reporting conscious experience that largely avoid the old pitfalls. He has developed one such method, Descriptive Experience Sampling (DES), that, he has claimed (Hurlburt 1990, 1993; Hurlburt and Heavey 2006), provides largely accurate descriptions of experience. Eric Schwitzgebel, without addressing DES in particular, has argued that introspective reports in general are greatly prone to error, even in what would seem the most favorable of cases (Schwitzgebel and Gordon 2000; Schwitzgebel 2002a,b, 2004, 2006, in preparation).

In this book, Russ and Eric confront each other directly and concretely on the adequacy and accuracy of introspective reports, using the

particular reports of an actual subject as the starting point. Throughout the book, we use the term “introspection” to refer only to the observation of particular instants of experience as they occur, or immediately thereafter. Sometimes, but not in this book, introspection refers to chewing over, musing, reflecting—to a certain type of self-oriented, retrospective or prospective contemplation. Our usage is quite specific: we wish to discuss whether, or to what extent, it is possible for people to report what is ongoing in their experience as it is happening.

### 1.1 The Origins of This Book

In April 2002, at an interdisciplinary conference in Tucson called *Toward a Science of Consciousness*, Russ presented a paper titled “Describing inner experience: Not impossible but also not trivially easy.” This paper, co-authored with Chris Heavey, criticized earlier attempts at introspection but argued that if one employed a proper method it was possible to describe the features of inner experience (thoughts, images, feelings) with considerable accuracy. Russ had been working for decades to develop just such a method.

At the same meeting, Eric presented a paper titled “Some reasons to distrust people’s judgments about their own conscious experiences.” In this paper, Eric argued that the introspection of emotion, sensory experience, imagery, and thought—which together constitute much if not all of our experiential life—is unreliable, and that even in favorable circumstances of extended reflection on these aspects of our mental lives as they transpire, we often make gross mistakes regarding their basic features. Thus, he advocated a skeptical position that seemed to be considerably at odds with Russ’s cautious optimism. Eric was in the midst of publishing a series of papers defending this view. (See the citations above.)

We had not met before the 2002 Tucson convention, but the papers and our conversations showed that we shared a substantial intellectual history, despite Russ’s training in psychology and Eric’s in philosophy. We had both independently encountered the introspective literature on conscious experience and concluded that there was good reason for skepticism. We had both examined the methodology of the early introspectionist school and had written criticisms of those practices (Hurlburt 1990; Schwitzgebel 2002a). We had both written criticisms of the armchair introspections that underlie philosophical and psychological

thought about consciousness (Hurlburt 1990; Schwitzgebel and Gordon 2000; Schwitzgebel 2002a,b, 2003a,b).

Despite these similarities, by 2002 we had reached opposing positions. Russ had responded to the methodological inadequacies of introspection by creating, in the late 1970s, a method of exploring inner, conscious experience that sought to avoid the pitfalls that had doomed earlier introspective attempts. This method came to be known as Descriptive Experience Sampling (DES), and the project had culminated in two books (Hurlburt 1990, 1993). Russ argued in those two books, as well as in the paper he presented at the Toward a Science of Consciousness meeting, that his method solved enough of the methodological problems that DES could be taken as providing largely correct descriptions of inner experience (and perhaps other methods could as well). Russ will describe DES more completely in chapter 2, but for now it is enough to know that DES uses a beeper to signal the subject to pay attention to the “inner experience” that was ongoing at the moment of the beep. Subsequently, the subject and the investigator meet to discuss the details of such beeped moments.

Eric was not won over. Over the centuries, many people had made enthusiastic claims about the accuracy of their introspections, and most if not all of them had not proven credible. Why should Eric regard Russ’s claim about DES any differently? He agreed that the DES beeper did seem likely to overcome some of the difficulties of introspective report, but it appeared to aggravate other difficulties, and he thought it likely that, all things considered, substantial doubt would still be warranted. Yet he had never examined the DES methodology closely.

We both recognized that it was crucial to determine whether it was possible to provide trustworthy accounts of conscious experience. Both in psychology and in philosophy, pressure to explore inner experience, consciousness, and the phenomenology of thought and emotion was increasing. If Russ was right, then we should redouble our efforts to explain to psychologists and philosophers how it is possible accurately to observe conscious experience. If Eric was right, even the most apparently credible reports of inner experience should not be accepted at face value without substantial independent support from non-introspective data.

We agreed that Eric would serve as a DES subject for a few days, right there at the Toward a Science of Consciousness conference. This would give Eric the opportunity to explore Russ’s approach from the inside, to

gain a more direct and intimate knowledge of it. Furthermore, it would provide a series of concrete occasions on which to discuss introspective methodology. We would thus move from the realm of general statements to the realm of concrete particulars. Eric's being a subject would turn Russ's method inside out, would let the fox explore the chicken coop from the inside. It would also test Eric's commitment to skepticism when his own experiential report was the one on the table.

We recognized that Eric was by no means a typical subject. He was open to participating in DES, but he had already thought extensively about the difficulties of introspection, and he was on the public record as a harsh critic of it. Thus, whereas most of Russ's subjects are simply trying to report the features of their experiences, Eric was trying both to report and to examine the limits of that reporting.

These interviews initiated a conversation that was continued by email over the next 6 months. We wrote each other at length, discussing the history of introspection, examining Eric's experience as a subject, and considering and reconsidering both of our skepticisms and Russ's explanations of how DES attempts to limit the risks inherent in earlier methods. That correspondence could be simplified as follows: We agreed that the history of introspection showed that most introspective reports were not to be trusted. But we disagreed about the extent to which the failure of earlier methods reflected *general, ineliminable* difficulties in introspection. Russ was optimistic. He argued that an interviewer like him, carefully avoiding bias and focusing the interview on individual moments of experience, could often generate largely accurate reports. Eric remained relatively pessimistic, even when he was the subject.

## 1.2 Sampling with Melanie

To continue the conversation usefully, we felt that Eric needed more experience with interview techniques in which his roles as skeptic and investigator wouldn't be complicated by his simultaneously serving as the subject. So Russ proposed a new endeavor. We would jointly take the role of investigator and interview a naive subject, someone who had not previously been interviewed by Russ. In these interviews, Eric would be free to cross-examine the subject in whatever way he found useful, probing the subject's opinions about her sampled experiences without being confined to DES interviewing principles. For the role of subject, Russ found Melanie, a friend of a friend. Melanie had just graduated from college with a joint degree in philosophy and psychology and was



new in town, looking for a connection to the local psychology scene. Before coming to town, she had had no prior direct contact with either Russ or Eric or their views.

Until then, our conversations had been either about introspection in general (“Should we trust introspective reports?”) or about Eric’s atypical DES experience. The first topic was too broad. The second topic was confounded by Eric’s dual role and by his earlier investigations. Now, however, the questions would be specific, concrete, and relatively straightforward: Should we believe Melanie’s report about her experience at 11:34:21? We could explore the question in any way we wished. To what extent would we agree with one another when faced with specific, individual reports? Would we disagree broadly about all the reports, or would the disagreement be concentrated on just a few reports, or a few aspects of them? We would be faced throughout with a concrete person, Melanie. It would not be adequate to say the impersonal “I don’t believe introspective reports.” We would have to be concretely personal: “I don’t believe Melanie’s report.”

Our aims were also personal. Russ wanted candidly to expose his views to Eric, who seemed an open-minded but unsympathetic audience, to gain a skeptic’s perspective on his methodology, to refine his own skepticism, to reconsider how much skepticism about Melanie’s reports might indeed be warranted. Eric was exploring the limits of his skepticism, wavering between the radical pessimism about introspection with which he was flirting in his papers and a more nuanced caution that admitted the possibility of progress and discovery. Our collaboration was intended to be a private conversation between the two of us, facilitated by Melanie’s willingness to be questioned. We did not begin with the intention of making our conversations public.

After half a dozen sampling interviews with Melanie, spread over a month or so, we felt we had sufficient material to drive our discussion to the next phase, so we thanked Melanie for her participation and had the interviews transcribed by Sharon Jones-Forrester, one of Russ’s students. The transcription was intended to serve as the basis for our continuing personal conversation about the trustworthiness of Melanie’s reports in particular, and about DES reports and introspective reports in general. We independently read the transcripts and emailed comments about specific details to each other. We then replied to each other’s comments and replied to those replies and so on, back and forth until we judged we had reached a point of diminishing returns. Over the course of the interviews and subsequent discussions, we gradually came to think that our

concretely based considerations of the limits of skepticism, designed originally to be a private and candid conversation, might have value to others facing some of the same issues. Thus this book was born.

### 1.3 The Format of This Book

The sampling interviews that are the heart of this book were thus intended to be a personal confrontation between Russ and Eric. Because these interviews were real-time exchanges, we occasionally meandered, repeated ourselves, misunderstood each other, assumed shared knowledge unavailable to an outsider, phrased things poorly. In making these interviews available to the reader, therefore, we cut such portions of the transcripts; these cuts were never made unless we both agreed the remaining interview material stayed faithful to the original whole. We also slightly eased the remainder, removing some of the vocalized pauses and false starts, for example—again only where we jointly agreed to the fidelity of the alterations. Our aim was to remove unnecessary distractions, thus focusing the remainder more sharply on what we took to be the issues of greatest general interest. We will make the complete, unaltered interview sound files and their transcripts available on the World Wide Web ([http://mitpress.mit.edu/inner\\_experience](http://mitpress.mit.edu/inner_experience)) for those who wish to compare.

This book presents the transcripts of our interviews with Melanie and 88 boxed discussions of issues raised in those interviews. To a large extent, those boxes are streamlined versions of the personal e-mail exchanges between Russ and Eric as we tried to hammer out our similar or differing evaluations of the adequacy of some particular aspect of our interviews with Melanie. We could have presented our views in the more traditional format for a co-authored pro-and-con book, each writing a discursive essay and a reply. However, we felt that the presentation of a verbatim transcript, with inserted comments and replies, would have substantial advantages over the more standard format. The transcript format forces the reader to begin with, and constantly confront, the particular. Most other discussions of introspective method begin with abstractions and general considerations, invoking particular instances, if at all, only selectively for the advancement of the author's more general thesis. While there is nothing inherently wrong with such an approach, we feel that there is something salutary in presenting the reader with randomly obtained particular reports, one at a time, before reaching general conclusions, confronting each report on its own terms before proceeding to

the next. Russ's and Eric's reactions and comments, both in the course of the original dialogue and in their later amplifications, may help the reader get some bearing on the kinds of doubts that may reasonably be raised and the resources available for responding to them.

Although this book focuses on the reports of one particular subject (Melanie), the reader will swiftly discover that the issues it raises are quite general. If the reader finds some of Melanie's claims about her experience to be believable and others to warrant doubt, as we think most readers will, this book invites consideration of what might drive these evaluations, and it offers different and sometimes conflicting suggestions on that topic. Temporarily replacing the factious and general debate about the trustworthiness of introspective reports with a personal and particular look at the details of Melanie's reports will, we think, take us a long way toward honing or refining, trimming or amplifying, shifting or otherwise altering the skepticism that is desirable when encountering reports about conscious experience.

Thus, this book is not a debate between opposing partisans, each trying to convince the other. Instead, it is a forthright *collaboration* between opposing partisans, each genuinely seeking to refine his own level of skepticism and to replace partisanship with balanced critical judgment. The result, we hope, is an illumination of some of the major issues from two sides at once.

Our confrontation and dispute has also produced one potentially very useful by-product: an examination, in unprecedented detail, of random moments of one person's experience. To the extent that they accept Melanie's reports, readers will find a wealth of information about imagery, emotion, self-awareness, inner speech, and sensory experience as experienced by a particular individual at particular moments in time. We comment frequently on general issues pertaining to such experiences, such as the bearing of Melanie's reports on various psychological or philosophical theories and the apparent similarities and differences between Melanie and other subjects we have read about or studied, including ourselves.

### **A Note to the Reader**

Chapter 2 presents the general rationale behind Russ's belief that satisfactory introspective methods may exist, and chapter 3 presents Eric's general rationale for doubting such claims. We are ambivalent about including these chapters here rather than near the end of the book. On

the one hand, this background seems worth presenting at the outset. On the other hand, we have just argued for the value of starting with concrete instances instead of theoretical generalities, and on that logic it would be better for you to dive right into our interviews with Melanie beginning with chapter 4. The interview transcripts don't assume knowledge of chapters 2 and 3, though you may have a fuller sense of what is at stake if you read these chapters first. We encourage you to follow your inclinations in this matter.

## 2

## Can There Be a Satisfactory Introspective Method?

Russ Hurlburt

Eric's and my interest in introspection stem from the same source: we agree that most attempts at the observation of inner experience have not been successful. But we have diverged in our response to that source. I have tried to capitalize on earlier introspective failures and build a better method than was used in the previous attempts; so far, the best method I have discovered is Descriptive Experience Sampling (DES) (Hurlburt 1990, 1993; Hurlburt and Heavey 2006). Eric has publicized the skeptic's position, criticizing all attempts at introspection without excluding new and perhaps better ones. In a nutshell, I want Eric to examine DES (or any other method that avoids earlier pitfalls) on its own merits without damning it by association with other not-so-sophisticated attempts; he wants me to recognize that history includes many enthusiastic supporters of introspective methods that have ultimately proven to be problematic. What makes this conversation engaging is the fact that we both recognize the legitimacy of the other's point of view, and are both sincerely trying to figure out the appropriate balance of these necessarily confrontational positions. Neither of us is trying to win the argument; both of us are as happy to hone the other's position as our own in the service of more adequately answering the question "Can we believe people's reports about their inner experience?"

This chapter makes the case that there may well be introspective methods that deserve the scrutiny of even the most skeptical observer of introspection. I use DES as an example of such a method, not because it is the best method, but because it is the best method I know of. I will show why it is reasonable to suppose that it is different enough from previous attempts to escape from the broad criticisms that have been leveled against introspection repeatedly over the last hundred years. My attempt in this chapter is not to argue that DES provides accurate descriptions.

Here I simply wish to demonstrate why I think it possible that introspective methods can be devised that avoid the earlier pitfalls.

This chapter is in many ways a reconstruction for the reader of the extended conversations that Eric and I had before we decided to sample with Melanie. Recall from chapter 1 that these conversations led Eric to recognize that introspective methods might be improved upon, and that he came to see DES as potentially interesting, sufficiently worthy of his skeptical attention to justify devoting a substantial chunk of his professional time. In this chapter I have the same aim for the reader. For a note about the term “inner experience,” see box 2.1.

## **2.1 Toward a Better Introspective Method: Fifteen Guidelines from a Century of Science**

The question we are exploring in this book is whether it is possible (or the extent to which it is possible) to obtain accurate descriptions of inner experience. Chris Heavey, Todd Seibert, and I (Hurlburt, Heavey, and Seibert 2006) surveyed the last century or so of psychological research literature to ascertain what that literature (most of it not introspective) has to say about the characteristics of a good introspective method. That paper extracted fifteen guidelines for any good introspective method; this section paraphrases those guidelines; the reader is referred to the original chapter for amplification.

*Guideline 1: The stakes are high.* Bluntly stated, introspective methods failed and non-introspective methods came to dominate psychology largely because introspection failed. Should psychological science reawaken an interest in introspection without adequate discussion and improvement of introspective method, there may be an even more severe reaction (if that is possible).

*Guideline 2: Skepticism is appropriate.* Except perhaps for think-aloud procedures, all introspective procedures require memory to some extent. [For a brief description of think-aloud procedures, see box 2.2.] Psychological science robustly shows that human memory is susceptible to a variety of errors.

*Guideline 3: Introspect with little delay.* It is well known that if something is not encoded, it will likely not be recalled (Klatzky 1975); that meaningful chunks, not random details, are likely to be encoded (Bower 1970); and that this encoding must take place within a few seconds of the event. Because the features of inner experience that might be requested

**Box 2.1****A note about terminology: “inner experience” or “conscious experience”?**

Eric: Russ, you’ve called the subject matter of your work “inner experience.” I don’t like that term, because I think it favors experiences like thoughts and feelings (which are generally thought of as inner) over things like sensations (which are more outwardly directed). I prefer to call it “conscious experience” or even just “experience.” I’m also concerned about how the phrase seems to build in the idea of the mind as interior and the world as external. I’m sympathetic with recent trends in cognitive science that reject a strict inner/outer division (sometimes called “embodied” views of the mind, or “externalism” or “contextualism”).

Russ: I agree that the “inner” in “inner experience” has the disadvantage that you point out—it does seem to favor thoughts over sensations. But DES subjects don’t seem to be affected by that; and it avoids the psychological and philosophical traditions in ways that I find highly desirable.

“Experience” (unmodified) can refer not only to inner experience, but also to “external” or “environmental” or “surrounding” experience, as in “I was affected by the space-shuttle-disaster experience” or “I took the job to get management experience.” Thus, I think we need some kind of an adjective to indicate that “experience” refers to thoughts, feelings, sensations, and the like.

“Conscious experience” seems to awaken either (a) the contrast to the “unconscious” in Freud and many others’ sense or (b) the contrast to sleeping, dreaming, or drug-altered experience.

“Attention” and “awareness” have an implication of a meta-awareness that I do not intend.

There is, thus, no non-problematic term for what might be called inner experience, conscious experience, experience, awareness, or attention. I have preferred “inner experience” as the least misleading, but it is far from perfect.

The good news is that in DES it simply doesn’t seem to matter what you call it, and therefore I alternate quasi-randomly between all those terms in an attempt to distance myself from any one particular connotation. For example, in the set of interviews that we display in chapters 4–9, we use “inner experience” 5 times, “experience” about 250 times, “awareness” about 100 times, and “attention” about 70 times.

Eric: I’m not entirely convinced that it doesn’t matter what you call it, but I do agree that every terminology has shortcomings. “Conscious experience” also suggests a possible contrast to “unconscious experience”—a phrase that sounds incoherent to me. And does the phrase “conscious experience” invite the idea that we’re normally conscious *of* our experiences, in some self-observational way? Though some philosophers appear to endorse such a view (e.g., Rosenthal 1986; Lycan 1996), I’d prefer not to be committed to that view simply by the terminology. So maybe the phrase “inner experience” isn’t worse than any other. The reader will notice that I’ve reconciled myself to having it in the title of this book.

Thread: Loose language. Next: box 4.1.

**Box 2.2****Summary of sampling methods**

Russ: For purposes of comparison, here is a brief description of some current methods that attempt to explore inner experience.

Descriptive Experience Sampling (DES) (Hurlburt 1990) uses random beepers to trigger the qualitative description of experience. DES differs from all other sampling methods in that it is descriptive, not quantitative.

Thought sampling (sometimes called cognition sampling) (Hurlburt 1979) uses beepers to trigger subjects to fill out questionnaires. These questionnaires examine a variety of features of thought and mood.

The Experience Sampling Method (ESM) (Larson and Csikszentmihalyi 1983) is predominantly a quantitative methodology that collects standardized data about internal and external aspects of experience and situational and contextual variables. ESM differs from thought sampling primarily in its interest in situational variables and in the standardization of the questionnaires.

Ecological Momentary Assessment (EMA) (Stone and Shiffman 1994) is also a quantitative time-sampling method that differs from ESM in that it is not exclusively a random method; instead EMA sampling may occur at regular intervals (every hour, for example) or may be triggered by specific events (while jogging, for example).

Think-aloud procedures (sometimes called verbal protocol analyses) (Ericsson and Simon 1980) ask subjects to verbalize their ongoing inner processes while performing some particular tasks (solving an anagram, for example).

The Articulated Thoughts in Simulated Situations (ATSS) paradigm (Davison, Robbins, and Johnson 1983) is a kind of verbal protocol analysis in which subjects listen to audiotapes describing “stimulus scenarios” designed to elicit particular responses (social anxiety, for example). Subjects are to imagine actually being involved in the scenarios; immediately after hearing each scenario, they verbalize what they were thinking and feeling during the simulated situation.

by introspection are not necessarily the meaningful portions of an event, those features are not likely to be encoded and therefore are not likely to be reported accurately unless the introspection takes place within a few seconds of the event.

*Guideline 4: Target specific, concrete episodes.* People often engage in theory-guided recall when retrospectively characterizing their experiences (Pearson, Ross, and Dawes 1992). Characterizations of experiences over time are also likely to be distorted by features of the experiences. For example, Kahneman and colleagues (see, e.g., Kahneman 1999;



Redelmeier and Kahneman 1996) have found that people asked to characterize pain over time do not perform some sort of average across actual events, but rather are unduly influenced by the peak level of pain and the current level of pain. Targeting specific moments of experience will minimize these biases.

*Guideline 5: Keep the target experience brief.* There are “severe limitations on the amount of information that we are able to receive, process, and remember” (Miller 1956, p. 56). The introspectionists recognized such limitations a century ago. For example, Watt (1905) “fractionated” problem-solving events into four parts—the preparation, the period before the presentation of the problem, the presentation of the problem, and the search for the solution—each of which was no longer than a second or so. The implication is that the shorter the experience to be introspected, the better.

*Guideline 6: Disturb the experience as little as possible.* James famously suggested that it would be impossible to capture ongoing inner experience because the attempt to capture it would destroy the experience:

As a snow-flake crystal caught in the warm hand is no longer a crystal but a drop, so, instead of catching the feeling of relation moving to its term, we find we have caught some substantive thing, usually the last word we were producing, statically taken, and with its function, tendency, and particular meaning in the sentence quite evaporated. The attempt at introspective analysis in these cases is in fact like . . . trying to turn up the gas quickly enough to see how the darkness looks. (1890/1981, p. 158)

John Stuart Mill suggested that it might be possible to capture ongoing experience through the medium of memory just after the experience has passed: “A fact may be studied through the medium of memory, not at the very moment of our perceiving it, but the moment after: and this is really the mode in which our best knowledge of our intellectual acts is generally acquired. We reflect on what we have been doing when the act is past, but when its impression in the memory is still fresh.” (1882/1961, p. 64) James and Mill were correct in pointing out that we should try to disturb the targeted experience as little as possible.

*Guideline 7: Explore natural situations.* External validity (Campbell and Stanley 1963), “mundane realism” (Aronson and Carlsmith 1968), and “ecological validity” (Brunswik 1949) concerns about generalizability indicate that explorations should take place in the subject’s own natural environments.

*Guideline 8: Minimize demands.* Explorations of private phenomena should seek to minimize “demand characteristics” (Orne 1962) or the “Pygmalion Effect” (Rosenthal and Jacobson 1968), employing double-blind testing when possible (Rosenthal 1976) and scrupulously bracketing presuppositions when double-blind testing is not possible (as is often the case in DES).

*Guideline 9: Terminology is problematic.* B. F. Skinner observed that verbal behavior about private events may be impoverished because it is difficult for the verbal community to shape a person’s speech about inner experience:

The verbal response “red” is established as a discriminative operant by a community which reinforces the response when it is made in the presence of red stimuli and not otherwise. This can easily be done if the community and the individual both have access to red stimuli. It cannot be done if either the individual *or the community* is color-blind. The latter case resembles that in which a verbal response is based upon a private event, where, by definition, common access by both parties is impossible. How does the community present or withhold reinforcement appropriately in order to bring such a response as “My tooth aches” under the control of appropriate stimulation? (1953, pp. 258–259)

Thus Skinner established that talk about inner experience, such as “I was thinking . . .,” “I am feeling . . .,” and “I am depressed” are not likely to have the same precision as talk about external events.

My DES colleagues and I have made a similar observation frequently in our sampling studies. For example, people often use the word “thinking” to mean something entirely non-cognitive; others use the word “feeling” to refer to cognitive events. [For more detail, see box 4.1.] However, we have also observed that these people can substantially improve or clarify their meanings if given repeated DES opportunities to try to speak accurately about their experience. Thus, we should recognize that some speakings cannot be adequately differentially reinforced, and we should therefore be very cautious in those arenas. However, where we can improve the differential reinforcement of speakings, we should do so. The implication is that methods must clarify to the extent possible precisely what is being described.

*Guideline 10: Don’t ask participants to infer causation.* Nisbett and Wilson (1977) reviewed research examining the attribution of causality and concluded that people often cannot describe why they behave or think the way they do. The moral seems clear: Avoid asking “why” questions.

*Guideline 11: Abandon armchair observation.* It follows from all that has gone before that casual observation about inner experience is not likely to yield scientifically valid results. Merely asking subjects about their inner experiences is simply not good enough. Furthermore, asking subjects to perform armchair observations about their own experiences is problematic, even if that observation is done with careful instruction or by sophisticated observers:

I have conducted this brief examination of our introspective knowledge of visual imagery to promote the more general thesis that we can be, and often are, grossly mistaken about our own current conscious experiences even in favourable circumstances of quiet attention. . . . We must abandon not only research paradigms in psychology and consciousness studies that depend too trustingly on introspection . . . but also some of our ordinary assumptions about our knowledge of our own mental lives and what it's like to be ourselves. Human judgment about anything as fluid, changeable, skittish and chaotic as conscious experience is bound to error and confusion. (Schwitzgebel 2002, p. 50)

*Guideline 12: Separate reports from interpretations.* Neuroscience has effectively used introspective reports of experience by those suffering from brain damage and disease to obtain an ever greater understanding of brain processing. Neuroscience has been successful because it has appropriately separated the introspective report from the interpretation of that report. It is the patient's job to provide the introspective reports, and the neurologist's job to provide the interpretation.

*Guideline 13: Don't require too much.* Classical introspection observed many or most of the above guidelines and still Titchener's group disagreed vehemently with the Würzburg school about the existence of imageless thought. The Würzburgers thought they had discovered a new "imageless" element of thinking, whereas Titchener thought that images were present but very faint. Many observers see this lack of agreement as a primary cause of the fall of classical introspection a century ago (Misiak and Sexton 1966; but see Danziger 1980). However, Monson and Hurlburt (1993; see also Hurlburt and Heavey 2001) reviewed the introspectionist reports and found that Titchener and the Würzburgers substantially agreed about the phenomena in question, even though they disagreed about the interpretation of those observations. Had the introspectionists limited themselves to the careful description of phenomena, rather than trying to resolve an issue in their theory of mind, they would not have disagreed and introspection might not have been so thoroughly discredited.

*Guideline 14: Value prospective research.* Prospective designs offer the possibility of tapping a wide range of information relatively irrespective

of theoretical perspective, collecting evidence that may or may not be related to some later question. At this early stage of the science of inner experience, this ability to allow the emergence of perhaps unexpected relationships or characteristics is especially important.

*Guideline 15: Situate introspective observations in a nomological net.* Those who would use introspective observations should explore the relationships of those observations to other kinds of research results.

These fifteen guidelines highlight desirable features of any introspective method. No doubt other ways of slicing the century-of-psychological-research pie would yield a somewhat different set of guidelines. That is, I am not claiming that this is the only set or the best. Yet it does seem to me that this set is a reasonable summary of the desirable characteristics of introspective methods.

## 2.2 Descriptive Experience Sampling

In 1974, I began developing a method shaped by the thinking that is embodied in the guidelines we have just reviewed. That method, which I call Descriptive Experience Sampling (DES), is my best attempt at an accurate method for describing inner experience.

I do not think that DES is the ultimate method, only that it is the best method that I know of at this time. Should a method come along that I judge to be better than DES, I would be happy to abandon DES in its favor. That is, I am personally, and this book is specifically, much more committed to the high-quality study of inner experience than to the DES method.

I have described DES in a variety of places (Hurlburt 1990, 1993, 1997; Hurlburt and Heavey 2001, 2002, 2004, 2006; Hurlburt and Akhter 2006). I will discuss its basics and its rationale only fairly briefly here. Readers interested in more detail are referred to the works cited above.

DES uses a random beeper in the subject's natural environments to signal the subject to pay attention to the experience that was ongoing at the moment of the beep. The subject then jots down notes about that now-immediately-past experience. The subject collects a half-dozen such beeped experiences and then meets with the investigator within 24 hours for an expositional interview, the aim of which is to describe the experiences that were ongoing at each of the six beeped moments.

The beep/interview procedure is repeated over a number of sampling days, usually between three and ten. The "iterative" nature of the procedure allows the subject's observational and reporting skills to improve

over the course of the several sampling days: Each day's interview informs, refines, and differentiates the next day's observations, and in turn those newly refined observations inform, refine, and differentiate the subsequent interviews (Hurlburt and Akhter 2006).

Occasionally critics of DES have disparagingly referred to the "magic beeper," but whereas there is nothing magic about it, its characteristics are important (Hurlburt and Heavey 2004, 2006):

- The beep is random. This makes it clear that I and my subject are on equal footing with respect to the beep (that there is no manipulation involved) and that I have no presuppositional expectations about what occasions or events are important or unimportant.
- The beep has a rapid onset or "rise time." This makes it clear that I am interested in a precise moment, perhaps measured to a fraction of a second. A vibrator of the type used in pagers is not adequate.
- The beep should be easily detectable. A beep that is too loud will startle the subject, and the startle response will destroy the contents of experience. A beep that is too soft will trigger the subject's asking "Is that the beep? Is that the beep? Yes! That's the beep!" but by now the experience that was occurring at the moment of onset of the beep may be lost.
- The beep is unambiguous. It means "Sample now!" and nothing else. Some critics have attempted to simulate the DES procedure by using, for example, a telephone ring as the signaling device. That doesn't work, because the subject's response must be "That's a telephone ring, but I'm not supposed to answer the telephone, I'm supposed to pay attention to my experience." However, that response is likely to destroy the experience that was ongoing at the moment of the beep.
- The beep should be private. DES subjects generally use an earphone. If the beep is delivered through an external speaker, the subject must think about what she will say to anyone who might also have heard the beep, or must hasten to stop the beep so as not to annoy others. Either way, the ongoing experience has been lost.
- The beeper must be easily portable, so it can be easily used in the subject's natural environments.

The positional interview asks essentially one and only one question: "What were you experiencing at the moment of the beep?" The object is to get as complete and detailed an answer to that question as possible, while at the same time avoiding confabulation. We want "the whole truth and nothing but the truth," and the interview (in fact, the entire

**Box 2.3****The truth, the whole truth, and nothing but the truth**

Russ: Society often takes the statement “the truth, the whole truth, and nothing but the truth” to mean substantially less than its literal meaning. In the courtroom, “nothing but the truth” sometimes cynically means “anything that is not technically a lie.” Witnesses are routinely admonished *not* to provide the “whole truth” in the sense that they are instructed to answer only the question being asked and not to volunteer additional information, even if that additional information seems necessary to the understanding of the whole truth.

However, in DES we mean “the truth, the whole truth, and nothing but the truth” to be taken as completely literally as possible. We give subjects an explicit choice: It’s okay not to tell us anything. But if you decide to tell us something about a beeped experience, we would like you to tell the truth, the whole truth, and nothing but the truth as straightforwardly as you can. Our intention is the opposite of an attorney’s. We want to discover the complete truth, not to hide behind a technical truth or show only one side of the truth. We want you to help us get to the heart of your experience, not to lead us away from it. We want you to help us discover as accurately as possible the details of your experience, not to blur them in the service of hiddenness. If we overlook something in what you have said, bring that to our attention. If we distort some feature of your experience, bring that to our attention. If our questions don’t help you describe accurately your phenomena, help us to ask better questions. If you are unwilling to expose as accurately as possible the details of a beeped experience, then we would prefer not to talk about that experience at all.

Thread: Interview techniques. Next: box 2.4.

DES project) is aimed at that result. The interview is not structured, but instead asks that question over and over, in as many different forms as necessary, to focus the subject on the precise moment of the beep and nothing else. [For Russ’s comment about “the truth, the whole truth, and nothing but the truth,” see box 2.3.]

By “the moment of the beep” we mean the last undisturbed moment before the beep begins—a millisecond before the beep. That is, we are not interested in the subject’s reaction to the beep; we are not interested in what led up to the beep; we are not interested in what caused the experience; we are not interested in whether the experience is typical or rare. We are interested in the experience that was naturally ongoing at the millisecond before the beep began. We often use the metaphor of a flash snapshot: we are interested in whatever the flash (beep onset) happens to catch.

Of course it would be naive to think that we actually get to a perfectly undisturbed moment; the beep has to have been processed by the subject to identify the “last undisturbed moment.” One of the aims of this book is to get a sense of how undisturbed that moment is likely to be. Most subjects report that something like a “sensory store” for experience seems to exist, giving them time to “freeze” the experience and then to report it. But the believability of those reports is at issue in this book.

The DES interviewer tries to grasp the subject’s experience as it is experienced by the subject. That requires suspending preconceptions about what the characteristics of the subject’s experience are, listening carefully to what the subject says, and trying to help the subject describe her own experience accurately. [For a discussion of the DES questioning technique, see box 2.4.]

We accept that Skinner was correct in observing that people, including our DES subjects, are not differentiated observers or reporters of their inner experience. (See guideline 9 above.) That is, subjects say many things about their experiences that are false or misleading, not because they wish to deceive, but because in their life encounters until now they have not learned a vocabulary that is adequate to describe their experiences accurately; they have not learned to discriminate adequately between their actually occurring experience and their self-theories about their experiences; they have not learned to focus on one moment. The series of DES expositional interviews must therefore provide training in those important observational and reporting skills at the same time as it is acquiring reports of inner experience. Therefore, the first sampling day or two (or more in some cases) is generally considered entirely training, not data gathering, and training continues past that time when necessary.

Thus, the expositional interview consists of the subject’s saying some things that are faithful and some that are misleading about her inner experience. The interviewer’s task is to help the subject, over the course of sampling, say more and more faithful things and fewer and fewer misleading things. A metaphor that appeals to me is that I am standing under the chute of a thresher with wheat and chaff pouring down. I try to grab the wheat and just ignore the chaff. (I actually don’t know whether threshers work like that.) As the subject finds out that I’m very interested in the characteristics of particular moments and I’m not interested in the extra-sampling general statements, almost always there eventually becomes more wheat and less chaff—that is, more talk about moments and less about general characterizations.

All this assumes that the subject is truly motivated to provide faithful descriptions of her inner experience. There may be some subjects who

**Box 2.4****Open-beginninged questions**

Russ: DES questions are sometimes called “open-ended,” but I think it makes as much sense to call my questions “open-beginninged.” An open-beginninged question is one that does not presume the content about which it asks.

“Tell me about your image” is an open-ended question, because it allows the respondent to elaborate about images as much or as little as desired. But its beginning is fixed: the question is about images, nothing else.

By contrast, “Tell me about your experience, if any, whatever it happened to be” is an open-beginninged (as well as an open-ended) question, because it allows the respondent to discuss images, speech, emotions, sensations—whatever was occurring at the moment of the beep, including none of the above or no experience at all.

The failure to appreciate the importance of open-beginninged questions has been, in my opinion, one of the major problems in the development of the science of inner experience, including most of the approaches described in box 2.2. One researcher assumes that visual experience always exists, and asks about the characteristics of visual experience. Another researcher assumes that emotional experience always exists, and asks about the characteristics of emotional experience. Another researcher assumes that verbal experience always exists, and asks about the characteristics of verbal experience. Our DES research shows that there is *no* form of inner experience that comes anywhere close to always existing; if that’s true, the assumptions of all those researchers are incorrect, and therefore their results are problematic.

It is possible to have a particular interest (say, in images) and still ask open-beginninged questions. You ask, in an open-beginninged way, what was going on at this moment. If the experience happens to include an image, then you include that in your study. If the experience happens not to include an image, then you discard it. Such a study is, it seems to me, the only way to ascertain how images are actually experienced. To argue that that is too inefficient actually proves my point. If it is inefficient, that must be because many moments do not include images, and to ask about images at those times must have been misguided.

Thread: Interview techniques. Previous: box 2.3. Next: box 4.3.

Thread: Richness. Next: box 3.4.



are motivated to lie, and probably nothing can be done about that. But DES does take seriously the attempt to enlist the subject's interest in faithful descriptions.

First, we present ourselves as co-investigators: the subject has something (her experience) and we have something (the DES method), and together we can discover something that probably neither of us separately can do.

Second, we are, and present ourselves as being, genuinely interested in the faithful apprehension of the subject's experience, as it occurred, with a minimum of embellishments. We demonstrate that genuine interest in a variety of ways: We question carefully to make sure we understand precisely what is being said; we encourage the careful focus on the precise moment of the beep by discouraging wandering away from that moment; we encourage the careful focus on the precise moment of the beep by discouraging speculation about what might have caused the currently experienced phenomenon; we consistently try to keep our own presuppositions out of the picture, maintaining a focus on the subject's experience as the subject experiences it; we let a random beeper choose the moment, rather than presume to know what moments are important.

Third, we protect the subject's privacy, telling her that we will not divulge her experiences until she explicitly agrees that we may do so; that she should feel free to discontinue sampling at any time without prejudice; that she should feel free to decline to discuss any experience for any reason (we have things that are none of her business and presume that she has things that are none of ours). We do ask that that if she wishes to decline to discuss an experience, she should tell us at the outset, and we will simply skip that entire beep. Then, if we do discuss a sample, we can delve as thoroughly as we desire. (Certainly the subject knows that she can change her mind and discontinue reporting or sampling at any time.)

The result of all this is that the subject typically comes to realize that our aim is actually to apprehend the reality of her experience, one moment at a time. Most subjects, I think, find that a very powerful and quite rare event: Someone really cares about my experience! Most subjects, I think, find it an unusual opportunity to be as honest as possible about personal experiences. Most subjects, I think, find it an opportunity to discover something about themselves, and the more accurate the better. [For a comment on Nisbett and Wilson's criticism of introspection, see box 2.5.]

**Box 2.5****Nisbett and Wilson's critique exempted DES, and indeed (contrary to myth) exempted consciousness generally.**

Russ: Nisbett and Wilson's 1977 criticism of introspection is so widely quoted as to require comment. The criticism is that "the accuracy of subjective reports is so poor as to suggest that any introspective access that may exist is not sufficient to produce generally correct or reliable reports" (Nisbett and Wilson 1977, p. 233).

Critics of introspective-like methods have often taken Nisbett and Wilson's paper to be an unconditional refutation of introspection in general. However, it is not widely known that Nisbett and Wilson, later in that same paper, recognized the possibility of accurate reports about inner experience: "We also wish to acknowledge that the studies do not suffice to show that people *could never* be accurate about the processes involved. To do so would require ecologically meaningless but theoretically interesting procedures such as interrupting a process at the very moment it was occurring, alerting subjects to pay careful attention to their cognitive processes, coaching them in introspective procedures, and so on." (p. 246)

DES, as we have just seen, involves precisely "interrupting a process at the very moment it was occurring, alerting subjects to pay careful attention to their cognitive processes, coaching them in introspective procedures, and so on." It is thus fair to say that Nisbett and Wilson, among the staunchest critics of introspection, agreed that methods like DES were at least "theoretically interesting" and might "be accurate about the processes involved." (I think Nisbett and Wilson were mistaken about their further claim of ecological meaninglessness, but readers may judge for themselves by the end of this book.)

Eric: Let me go further, Russ, and point out that—despite the myth that Nisbett and Wilson repudiated introspection generally (and the many citations of them to that effect)—they very explicitly emphasize that they mean only to challenge our introspective access to our own "cognitive processes" and not our "mental content." In fact, they devote an entire section of their famous paper to making this point ("Confusion between Content and Process," pp. 255–256). They grant, with what they take to be "almost all psychologists and philosophers," that individuals have "a great storehouse of private knowledge . . . that can be known with near certainty" (p. 255), including knowledge of our current sensations and emotions. They aim only to show that we have poor introspective knowledge of the processes leading up to—the *causes of and influences on*—our judgments, decisions, feelings, and other conscious events. They do not claim that we can be mistaken about what those judgments, decisions, feelings, and other conscious events are. They challenge, for example, self-reports about why we prefer a particular pair of socks, not self-reports *that* we prefer them or self-reports of one's current sensory experience (if any) in

**Box 2.5**

(continued)

seeing the socks. Wilson continues to be quite explicit about this distinction in his more recent work (e.g., 2002, pp. 17–18), emphasizing our ignorance of “the adaptive unconscious” as distinguished from consciousness.

In general, psychologists have done a poor job of separating skepticism about the self-reports of nonconscious processes, traits, behavioral dispositions, etc. from skepticism about self-reports of inner experience or consciousness; and when they do distinguish the two, it often turns out—as with Nisbett and Wilson—that they are only skeptical about the former.

Russ: I agree with all that.

## 2.3 Does DES-Apprehended Inner Experience Faithfully Mirror Inner Experience?

I acknowledge that DES reports about inner experience mirror inner experience absolutely accurately only rarely. So the issue is not whether the mirror is perfect, only whether it is scientifically adequate.

There are, it seems to me, two kinds of evidence that DES reports might faithfully reflect inner experience. First, there are what I will call *plausibility arguments*—characteristics of the world and the method that lead me to think that accurate characterizations is the most plausible state of affairs. Second, and by far more important to me, are what I will call *compelling idiographic observations*—one-case-at-a-time observations of single individuals.

### 2.3.1 Ten Plausibility Arguments

Here are ten plausible reasons to believe that DES reports faithfully mirror inner experience. No single reason, by itself, carries the day—one can argue against any of them. But all of them together are, to me, pretty persuasive. However, I do not think that arguments based on plausibility are ever an adequate foundation for science. They are important in that they clarify features of the method, but one person’s plausibility is another’s doubt. Science must be built on direct observation, not plausibility; that is why I believe that the compelling idiographic observations I discuss in the next section are far more important than the plausibility arguments I discuss here. I see these plausibility arguments only as setting the stage for what I find to be the convincing idiographic observations.

1. *The DES method is sophisticated.* There are, historically, many good reasons to doubt introspective reports. However, those introspective reports have been gathered in ways that I find seriously methodologically flawed. By following the guidelines and employing the characteristics described earlier in this chapter, DES may, in a sophisticated way, avoid those flaws.

2. *Prospective DES subjects are skeptical too.* Nearly all prospective DES subjects think DES will be difficult or impossible, but they find it easy once they actually engage in the DES procedure. It seems reasonable to suppose that the subjects' initial skepticism is somewhat similar to others' (perhaps the reader's) skepticism: it is based on armchair attempts at observing inner experience. But, as I observed in 1997 (p. 947), "critics [should] not dismiss the descriptive experience sampling method on the basis of informal attempts at replicating the procedure. Informal sampling attempts such as asking oneself on occasion, 'What am I thinking right now?' are nearly always discouraging, leading the typical critic to believe that he or she would be unable to perform the sampling task. However, I reported (1990, p. 269) that most subjects find the actual task of responding to the random beep to be quite easy and unambiguous, stating that 'unsuccessful [informal] attempts at thought sampling should not lead you to conclude that [descriptive experience] sampling . . . is impossible; but rather should lead you to an appreciation of the relative delicacy of the method.'" The fact is that most subjects, at the outset, believe they will have a hard or impossible time capturing their inner experience, but over the first day or so of DES they become convinced that they can in fact capture their inner experience. This often-repeated trajectory from skepticism to acceptance based on their own directly observed experience seems an argument against unrelenting skepticism.

3. *DES subjects say they give accurate and complete reports.* Despite the fact that I, in a skillfully repetitive way, give DES subjects the opportunity to say that there is more in their experience that they can't quite describe, they say the opposite—that they are giving pretty complete reports. They are convinced of that, and I am confident that that is not the result of my asking leading questions.

4. *Variability in within-subject reports implies their openness to a variety of experience.* People often give quite different reports at different beeps—for example, inner speech at one beep, an image at another, unsymbolized thinking (the experience of thinking without words,

images, or any other symbols; Hurlburt 1990, 1993, 1997; Hurlburt and Heavey 2006) at another, a combination of inner speech and feelings at another, and so on. This seems to indicate that people have a willingness and ability to report a variety of kinds of inner experience. It is therefore *not* the case that these subjects have a “favorite” kind of inner experience, or are “blind” to all other kinds of inner experience. (Certainly they might be blind to things they never report.)

Said another way: If one believed that reports of putative inner experience were purely artifactual, one would expect the reports to be always the same. They are not.

There are other possible explanations for variability within subjects’ reports—for example, that a subject views himself as highly variable and therefore gives variable reports. However, in my experience most people think of variability in content, not variability in form. A person would have to be quite sophisticated about inner experience (would have to recognize the existence of unsymbolized thinking, for example) for such a self-view to influence the form in this way.

5. *Variability in between-subject reports implies my openness to a variety of experience.* Different people have quite different patterns of responding. For example, one person reports nearly all inner speech; another reports nearly all images; another reports a mix of forms of inner experience. This seems to indicate that I, as one particular DES investigator, am open to a variety of experience. It is therefore *not* the case that I have a “favorite” kind of inner experience, or that I am “blind” to all other kinds of inner experience.

6. *The analogy from visual perception.* The phenomenology of figure-ground perception has been well known at least since the Gestalt psychologists. Their work was largely in the visual realm; they showed that people spontaneously, seemingly immediately, create strongly felt patterns out of visual arrays, and they proposed laws that govern such perception: proximity, similarity, closure, good continuation, and so on. Their main point was that people do *not* see everything that is available to be seen; they create, as part of the active perceptual process, a well-defined object to “see.”

It seems likely (and this is the way it is reported by DES subjects) that a similar process occurs across modalities. Thus, much as the faces disappear when I pay attention to the vase way of seeing the ambiguous face/vase figure, it seems reasonable to conclude that the sounds around me disappear when I pay attention to the visual, and that the visual

disappears when I pay attention to the tactile, and so on. Certainly there are cases where I can pay attention to two or several aspects of the environment; however, for most people, most of the time, the number of such things appears to be small. There are exceptions to that, but it is the exceptions that prove the rule. Some subjects do not “filter out” alternative modalities or alternative perceptions in the same modality. That indicates, it seems to me, that I am prepared to hear complex reports if they are given (i.e., that I am not biased against complexity). However, most people don’t make such complex reports, even when given the opportunity in the expositional interviews.

7. *Compare the alternatives.* An alternative that is sometimes advanced is that people always have ongoing visual experience. If the DES subject doesn’t report it, it must therefore be neglected. I am not persuaded by that as a possibility, because the same argument can be made for other sensory modalities. Auditory experience must also always be ongoing, because, if someone says my name, I’m likely to hear it even if I’m paying attention to something else. Therefore, the argument goes, a piece of my awareness must have been auditory. Kinesthetic experience must also always be ongoing, because, if I’m walking down the street and the pavement suddenly becomes spongy, I spontaneously adjust my gait. Therefore, the argument goes, a piece of my awareness must have involved the feel of the pavement and my body’s reaction to it. And I see no reason to stop there: taste, smell, and other senses are equally arguably always ongoing. So, on this model, I am always simultaneously experiencing many simultaneous multimodal things. I just don’t think that’s true. We certainly *process input* from multiple modalities at once, but most of that input does not become a recognizable part of our stream of experience, as the response of our immune system to invading bacteria or the expansion and contraction of our pupils as lighting conditions change do not become recognizable parts of the stream of experience. [See also box 4.8 and the discussions of Eric’s rich-versus-thin study in section 10.3 and subsection 11.2.1.]

8. *Subjects are not reluctant to report everything.* As we saw in section 2.2, the DES method tries to impress on subjects that if a feature of their experience is none of my business then we shouldn’t discuss that sample. I tell them that it is far easier if they just say “This sample is none of your business,” rather than try to disguise or hedge. I say “I will try to get a complete account, and if you are hiding something we’ll just go around and around; I won’t feel a sense of completion.”

Subjects occasionally do say “None of your business,” which indicates that the message is heard. But they don’t say it often, primarily (I think) because the beeped moments are usually pretty mundane.

I conclude that subjects are usually not reluctant to report as completely as they can; if they were, they would say “None of your business” more often. In fact, subjects often report things that are embarrassing or that run counter to their self-concept, as is indicated by verbal (“You’re sure this is confidential?”) and non-verbal (blushing, stammering) evidence.

9. *I myself am pretty good at bracketing presuppositions.* I don’t mean to be arrogant, or to single myself out, but the ability to bracket presuppositions probably has to be evaluated one person at a time. The evidence for the adequacy of my own bracketing efficacy is as follows: (1) My reports vary dramatically from subject to subject, indicating that I am not “out looking for” my favorite characteristic. (2) I have reported many phenomena that were surprising to me (unsymbolized thinking, the absence of figure-ground phenomena, the absence of inner experience altogether). (3) I have worked at it and written about it. (4) I have been observed by at least one skeptic (Eric) who acknowledges that I seem to be pretty good at it. [See chapter 10.]

10. *Leading the witness is less problematic with reports about actually occurring events than with general statements.* Descriptive psychology is plagued by the demand characteristics of the communications. I believe that the likelihood that demands are effective in altering a subject’s perceptions diminishes as the situation becomes more concretely immediate. “See that stop sign there? It’s blue with white polka-dots” is unlikely to be effective in the face of a red stop sign, because your own immediate perception can refute it. DES tries to limit reports to immediately occurring events, thus diminishing demand influences.

### 2.3.2 Compelling Idiographic Observations

The plausibility arguments that I have just discussed suggest to me, in a weight-of-the-evidence way, that the general answer to the question “Does DES-apprehended inner experience mirror inner experience?” is Yes. But I recognize that someone else might advance ten plausible reasons to the contrary and then conclude that the answer is therefore No. There is, I believe, no clear-cut way out of this scenario of dueling plausible generalities. However, I believe that the general attempt to answer the question “Does DES-apprehended inner experience

faithfully mirror inner experience?” is somewhat misguided. While I believe that the ten factors I just listed support the plausibility of the Yes answer, I am not persuaded by those arguments. In subsection 2.3.1, I tried to give an analytic answer to a question that may require an inductive answer. So let me recast the question: Does the DES-apprehended inner experience of Allen faithfully mirror his inner experience? Does the DES-apprehended inner experience of Beatrice faithfully mirror her inner experience? Does the DES-apprehended inner experience of Chuck faithfully mirror his inner experience? Does the DES-apprehended inner experience of Dolores faithfully mirror her inner experience? And so on. If the answer to many of those sub-questions is Yes, then we can perform the true inductive generalization and conclude that the DES-apprehended inner experiences of many subjects mirror their inner experiences.

I have performed many DES investigations, and my answer to most of those inductive questions about them are “Yes, yes, yes, yes . . . and therefore Yes.” Furthermore, that inductive series is capable of compelling me to believe the final Yes in a way that the analytically plausible arguments of subsection 2.3.1 simply cannot. I, as an individual, am quite sure that DES-elicited reports of inner experience often or usually mirror actual inner experience, and I believe that I have been compelled to that belief by observing a series of single individuals for whom a contrary position seems bizarre. I will cite two such cases here, both of which I have written about elsewhere.

### 2.3.2.1 The Case of Fran

In 1993 I reported the case of Fran, a woman who had been diagnosed as having a borderline personality disorder. In 1997 I discussed the “ideographic validity” of that case, arguing that my DES characterization of Fran’s inner experience reflected her actual inner experience. The following is from pp. 946–947 of my 1997 discussion:

“Fran” [was] a woman diagnosed as having a borderline personality (Hurlburt 1993). Hurlburt described many salient characteristics of Fran’s inner experiences, of which I discuss three. First, Hurlburt reported that Fran’s inner experience was frequently populated by multiple (as many as five or ten) visual images, all occurring simultaneously and in the same “visual space” (that is, these images were not a side-by-side collage, but were instead all viewed straight ahead in a physically impossible overlaying that somehow did not provide any confusion for Fran herself). Fran’s case is thus an example of the extreme complexity that inner experience can attain as reported by the descriptive experience sampling method. Such complexity cannot possibly be reported by any method other



than sampling. For example, had Fran used a think-aloud technique, the most detailed non-sampling method, she simply could not have had time to report adequately one image, to say nothing of five or ten simultaneous images.

Second, Hurlburt (1993) reported that some of Fran's visual images (usually those with extremely negative content) often lasted for hours or days, nonstop, uninterrupted. (By contrast, the descriptive experience sampling method finds that images in healthy participants last for only a moment.) For example, Fran reported a visual and auditory image of her father "telling her off." In this image, Fran was seated at the dining room table. Her father was standing over her, pointing his finger at her, telling her she was "no good—a failure." Her mother was seen at the kitchen sink in the background looking over her shoulder at Fran. This image appeared in several successive samples, with the description being the same at each sample, and apparently continued uninterrupted during the time in between, for a total of at least several hours (pp. 202–205). This long-duration-image phenomenon might be considered impossible without sampling evidence.

Third, Hurlburt (1993) reported that Fran had no *figure-ground phenomenon* in either her inner image perception or her external perception—she took in an entire visual scene without focusing on any of its aspects. This conclusion was based on the fact that in repeated descriptive experience sampling interviews, Fran consistently denied the occurrence of phenomena associated with figure and ground: no part of an image appeared to be "closer" or "in better focus," and when she shifted her gaze from one image (or external object) to another, she had no experience of "zeroing in" or of the previous center of attention "losing focus."

A major question is of course whether Hurlburt's (1993) descriptive experience sampling reports about Fran accurately reflect Fran's inner experience: Fran was clearly the only person in a position to know that experience. Direct reliability studies are therefore impossible, so reliability must be indirectly inferred from validity considerations. Furthermore, one cannot apply standard validity-checking procedures (which intrinsically use across-group measures) to the idiographic observations of a single person; instead, one must infer validity idiographically, considering the unique characteristics of the particular description. I can identify five such idiographic validity considerations regarding the case of Fran:

First, the question of idiographic validity applies not to the descriptive sampling method per se but to the particular individuals who apply the method. In Fran's case, I was the investigator (Hurlburt 1993). I might be expected to be a valid applier of the method because my previous descriptions of different people differ dramatically from each other, are sometimes surprising even to me myself, and are in agreement with other observers in those cases where more than one observer have sampled jointly (Hurlburt 1993).

Second, the lack of figure-ground phenomenon in inner experience leads to an obvious but risky prediction that if Fran viewed the classical ambiguous figures such as the faces-vase or Jastrow's duck-rabbit, they would not "alternate" in her experience. I (Hurlburt 1993) performed this informal validity experiment and found that Fran did in fact see both aspects of each drawing

simultaneously with no alternation. A correct risky prediction can be taken as support for an underlying proposition (Popper 1963) and therefore here as evidence of validity.

Third, I (Hurlburt 1993) ruled out miscommunication, misunderstanding, or language deficit as alternative explanations of her failure to report figure-ground experience as follows. Fran asked to borrow the ambiguous figures to show to her coworkers, believing that I was mistaken about the existence of the alternation phenomenon. She telephoned me a few hours later to report that to her surprise, her coworkers did in fact report the experience of alternation. In this conversation she gave an accurate description of her coworkers' alternating experiences but still denied that such alternation occurred for her. Thus it seemed clear that Fran understood what figure-ground phenomena are and was capable of describing them if they had existed for her.

Fourth, the descriptive experience sampling descriptions of Fran's inner experience provided plausible explanations of two characteristics of her external behavior. First, during Fran's discovery of her coworkers' figure-ground phenomenon, the coworkers came to realize, much to their surprise, that Fran could pay attention to many aspects of one thing or many different things simultaneously (such as her frequent multiple images), as had been discovered by descriptive experience sampling. The coworkers observed that this multiple-attention ability explained a trait that angered them all: They worked in a bank, and a frequent task was counting money. Each person would stand at a counter and count their own individual stacks of bills. Fran irritated her coworkers by repeatedly initiating conversations while counting, causing them to lose count. The simultaneous tasks of counting and conversing were impossible for her coworkers but simple for Fran. Thus, it seemed clear to me that the multiple-experience characteristic of Fran's inner world had real ramifications in Fran's exterior everyday world.

The second sampling-based plausible explanation of external behavior came from Fran's psychotherapist. Before Fran had become involved in the sampling study, her psychotherapist had responded to her complaints of being preoccupied with negative thoughts by training her in thought substitution—a cognitive-therapeutic technique aimed at teaching her to think about something positive, based on the rationale that increasing her frequency of positive thoughts would lower the frequency of negative thoughts. However, that therapeutic intervention had been unsuccessful; sampling provided the plausible explanation that Fran was quite capable of thinking about something positive without ceasing to think about something negative.

Fifth, changes in external behavior were reflected in changes in inner experience. Near the end of sampling Fran experienced a remarkable improvement in her borderline symptoms: her exterior disorganization and chaotic psychological fragility vanished. Samples obtained after this improvement were now much less complex and now included the experience of figure-ground phenomena.

Taken together, these observations led me (Hurlburt 1993) to conclude that the idiographic descriptions of Fran were indeed valid. If their validity is at least tentatively accepted, they are extremely provocative; for example, to my knowledge, no reports of visual perception without figure-ground phenomenon appear

in the perception literature, and no mention is made of the possible connection of the lack of figure-ground to psychopathology.

For reasons of focus, my 1993 and 1997 accounts did not include the following additional anecdote. Recall the conversation between Fran and her co-workers when they discovered that Fran's multiple-attention ability was the reason she could count money and hold a simultaneous conversation. During that same conversation, Fran discovered that her co-workers had in their living rooms only one television. Fran had three (didn't everyone?) and watched them all at the same time without switching her attention back and forth. She was surprised when her co-workers reported that they could not do the same thing! Furthermore, after the improvement in her borderline symptoms, she reported that, regrettably, she had lost this simultaneous-TV-watching ability. This case compels me to believe that my DES characterizations of Fran's inner experience correspond in some important way to her actual inner experience. Sampling had putatively "discovered" a highly unusual phenomenon of Fran's inner experience (no figure-ground phenomenon in image and external perception). This was "corroborated" by three highly unusual external characteristics: no alternation of ambiguous figures, the ability to count and hold a conversation (the ability was actually stronger than that—Fran could count, participate in one conversation, and simultaneously listen without difficulty to one or more other simultaneous conversations), and the presence of three TV's in her living room and the ability to watch all of them at the same time. And as if that weren't enough, when Fran's remarkable recovery occurred, both her inner experience and her external skills dramatically (literally overnight) lost their unusual characteristics. It is therefore difficult for me to believe that the DES multiple-image characterization of Fran's experience was not substantially correct. How else can one explain these remarkable characteristics? It is of course possible that Fran was lying and inventing reports to seem "special," as those diagnosed with borderline personality sometimes do, or that she was trying to confirm what she supposed to be my hypotheses. That doesn't seem likely to me—she would have had to have been very psychologically sophisticated, I had no hypotheses to confirm, and I was quite skeptical about her reports. The most reasonable conclusion, it seems to me, is that sampling discovered and accurately reported important characteristics of Fran's experience. Substantially more sampling case studies and corroborating objective investigations will be required.

### 2.3.2.2 The Case of Robert

In 1994, Asperger syndrome expert Uta Frith, her student Francesca Happé, and I reported the case of Robert, a 25-year-old man diagnosed as having Asperger syndrome, a form of autism in which the level of intellectual functioning can be quite normal. Robert's IQ was 90, and he was quite able to perform the sampling task. Here are excerpts from our account:

The characteristics of all Robert's 16 samples were strikingly uniform. All 16 involved visual images, with no other aspects of experience reliably available to be reported—no feelings, no inner speech, no bodily sensations, etc. All Robert's images were seen clearly and in accurate colour, with the centre of the image being most clear and losing focus at the periphery, apparently exactly the same as his real-world perception. . . . Robert's samples were marked by the absence of any characteristics of inner experience except images. Except for the imagined sensation of a cat scratch on the back of his hand in one sample of an image of a cat, no samples included inner speech, feelings, bodily sensations, or other features of inner experience that have been reported by other subjects. Robert clearly had adequate ability to describe such features, and on occasion we specifically enquired whether such features were present, so as to rule out the possibility that they were simply being overlooked. Our conclusion was that they simply did not occur to Robert as aspects of experience at any of the sampled moments.

Because the lack of non-image forms of inner experience was so striking, we structured [informal, non-DES] exercises during the interviews to explore the ways in which Robert experienced unambiguous strong bodily sensations. For example, with Robert's consent one of the authors (R.H.) leaned him forward and sideways to very tilted body positions; his inner experience (seeing a recalled image) remained constant, and a bodily awareness did not occur to him. In another such experiment, R.H. twisted the skin of Robert's wrist in opposite directions, creating what in most people would be a moderately painful experience. The wrist sensation did not create its own image or disturb the image that was present in his real-time inner experience: the image that he had been describing to us remained constant. Robert said he could feel the skin twisting but insisted it was not painful. (Hurlburt, Happé, and Frith 1994, pp. 388–389)

On the basis of DES, Hurlburt, Happé, and Frith characterized Robert's inner experience as almost always exclusively visual. The question we are dealing with here is whether that characterization is true. The informal experiments we performed were specific attempts to induce non-visual experience (leaning Robert to one side, applying painful twists to his wrist). Those manipulations were only slightly effective. What in most individuals would immediately dominate experience became, apparently, only slightly or not at all a part of Robert's experience. That images persisted despite explicit attempts to elicit non-image

experience seems to corroborate the characterization of Robert's experience as largely visual. Nonetheless, it is still possible that this visual focus is simply a characteristic of Robert's report, not of Robert's actual experience—maybe Robert felt pain but simply didn't have the vocabulary to report it.

However, other facts not reported by Hurlburt, Happé, and Frith (1994) compel me to the view that Robert's reports accurately mirrored his actual experience. During the session in which we had explored the painful wrist-twisting, Robert told the following anecdotes: When he lost his first baby tooth, his parents instructed him to put it under his pillow; the next morning, the tooth was gone, replaced by "a quid left by the tooth fairy"; later that day, Robert took a pair of pliers and pulled out four more teeth. A more recent incident occurred a few months before I met Robert. He was in his apartment kitchen, and he smelled something burning. Looking around, he discovered it was his hand, which was accidentally resting on a hotplate. Those remarkable and objectively corroboratable stories compel me to believe that pain does not figure in Robert's inner experience, just as sampling had shown. It is highly implausible that Robert's pain *experience* was similar to that of most other people, and that only his pain *reporting* differed from the norm. Certainly such accounts do not verify that Robert's experience is visual, but they do lend credence to the accuracy of his no-pain description of our arm-twisting experiment. That, in turn, lends credence to the accuracy of his ongoing-undisturbed-visual-image portion of that description, and that in turn supports, in my view, his credibility as a reporter of ongoing imagery. I simply cannot accept the notion that we should treat Robert's DES accounts as "mere reports." They are, it seems to me, substantially related to what Robert actually experienced.

By the way, neither absence of pain nor ubiquitous presence of images is known to be a frequent characteristic of Asperger individuals, although there are similar reports by others (e.g. Grandin 1995). It is therefore difficult to argue that we set out, knowingly or unwittingly, to look for those characteristics in Robert. Thus, it seems difficult to avoid the conclusion that these were actual characteristics of Robert's experience. [For Eric's comment on the case of Robert, see box 2.6.]

### 2.3.2.3 Discussion

The cases of Fran and Robert provide corroboration in instances where you might expect such corroboration *the least*. These were individuals with serious disorders, and yet their characterizations of their inner

**Box 2.6****How compelling is the case of Robert?**

Eric: I find the case of Fran more compelling (assuming that she was honest) than the case of Robert. Your phraseology here confuses me; and if I'm confused, I worry that Robert may have been confused too. What do you mean when you say, for example, that Robert had no "bodily awareness" as he was tilted forward and sideways? Was he completely ignorant of the fact that he was being tilted? You report no general disorder in his sense of balance. Or was Robert in some sense aware of being tilted (and able to report it?), though aware without "inner experience"? Do you mean to suggest that Robert navigated the world for the most part entirely non-consciously, no more having tactile or auditory experience than the rest of us have experience of our immune system or the growth of our fingernails? Or do you mean only something weaker?

How confident are you that Robert was alive to such distinctions as I'm asking about here and that he interpreted your questions as you intended them? Did you ask him about *sensory* visual experience, which you seem to assume he had, though you didn't report that in any of his samples? Especially without verbatim transcripts to look at, I don't feel I can give much credit to this strange material, confusingly presented, and therefore possibly born of confusion in the original interview. Pardon my frankness!

I concede that you have some anecdotal evidence that comports nicely with Robert's denial of pain. However, it should be noted that *total* incapacity to feel pain is a rare and serious disorder, typically accompanied by serious injury and deformity (Rosemberg, Marie, and Kliemann 1994; Nagasako, Oaklander, and Dworkin 2003). You don't report this in the case of Robert.

Russ: I offer the case of Robert only to open the reader to possibilities, not as proof. You, Eric, discredit the report because it seems "strange" to you and because it doesn't match your presuppositions about our experiences of balance and touch and the relation between bodily injury and the experience of pain. At first I, too, found Robert's reports rather strange. But, as I argue repeatedly throughout the book, we must set aside (or "bracket") such presuppositions when faced with DES reports [see subsection 11.1.7]. Furthermore, I think the general rarity of pain insensitivity strongly *supports* my point. We discovered Robert's pain insensitivity as a result of an exploration of inner experience *that had nothing to do with pain*. The ubiquity of Robert's images led to the risky prediction of little or no bodily or pain experience, and, as in the case of Fran, a correct risky prediction is supportive evidence.

I agree that our discussion of Robert is incomplete. One advantage of the present project, Eric, is that you can explore any similar presupposition-based doubts you have about Melanie's reports as deeply as you like.

Thread: Bracketing presuppositions. Next: box 3.3.

Thread: Human similarity and difference. Next: box 3.3.

experience seemed compellingly accurate. If seriously disturbed individuals can be faithfully accurate reporters of experience, healthy individuals should be able to be at least as accurate.

When I consider the many subjects I have examined with DES, some as dramatically compelling as Fran and Robert, I see little choice in believing that DES is about the exploration of inner experience, *not* merely about the *reports* of inner experience. To say that we are just examining *reports* of inner experience is, of course, true in a fundamental way that I can fully accept—everything has to be filtered through and understood in the context of reporting. But to say that we are *just* examining reports of inner experience seems substantially far-fetched, at the same level of far-fetchedness as to say that we are *just* examining perceptions of reality with nothing substantial implied. Just as I stop at red traffic lights because I believe in the substantial existence of the oncoming cars, I believe in the substantial existence of the inner experience that DES intends to describe. Just as I do not understand the nature of the reality of the oncoming cars, I do not understand the nature of the reality of inner experience. But just as I get out of the way of oncoming traffic, I treat inner experience as a fact.

It is possible to argue that the cases of Fran and Robert were exceptional—that's why I discussed them—or that perhaps my characterizations of Fran and Robert were somehow biased by my personal characteristics. The present book seeks to examine such reservations. We chose as a subject Melanie, who, unlike Fran or Robert, was not thought to be particularly exceptional—in fact, we knew little about her other than that she had been a successful college student. In the coming chapters we will expose the entire process, so that you can decide for yourself the extent to which the account of Melanie's experience that our interviews are believable.