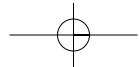
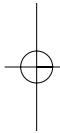
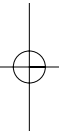


PART I

The Origins of ESM



1

Epistemological Foundations for the Measurement of Experience

This volume is intended as a guide for social scientists who are interested in doing research about the quality of people's everyday lives—of what they do and how they feel about it. In some respects it is a textbook that provides step-by-step instructions on how to proceed; but it is also an exciting journey into intellectual territory unfamiliar to most readers.

The technology on which this research method is based has changed extensively over the past 30 years, moving from pagers to programmable watches, to two-way “personal assistants” to solicit respondents' answers at random moments of the day. However, the basic features of the method have remained essentially the same since its inception in the 1970s and, with appropriate changes dictated by technological advances, are likely to remain the same in the future as well.

The information presented in these pages gives an intimate and exhaustive account of how people go about their daily existence. Thus it can serve as an introduction to this fascinating and understudied topic, even for those who do not intend to research it themselves or for those who are not professionally involved in the study of human behavior. More specifically, Part I deals with the importance of experience in human psychology and should be of interest to social scientists in general. Part II provides the psychometric information necessary to evaluate the reliability and validity of the measurements and is addressed primarily to investigators interested in applying the method

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to their own research. Part III presents a sampler of findings as an indication of the kind of questions that such studies can answer, and it should intrigue anyone interested in how people live and in how they feel about it.

What is common to the approaches described in this book is that they study *experience* in the naturally occurring contexts of everyday life. By experience we mean any of the contents of consciousness: thoughts, feelings, sensations. Whatever I become aware of as I drive from home to work will constitute my experience of commuting—an experience that in some ways will be different each day, yet have some common characteristics that are distinctly different from other aspects of my life, such as having breakfast or working at the office. How people feel about their lives is an important datum for many of the social and behavioral sciences: It has been studied by epidemiologists; by clinicians concerned with addictions and depression; and by researchers interested in work, education, and family relations. Although of interest to all of the social sciences, the quality of experience is fundamentally a problem for psychologists, so we should start by considering what this one discipline may have to say about the study of experiences.

A Systematic Phenomenology

Psychology has sometimes been described as a hybrid offspring of philosophy and natural science (Leahey, 1997). The outcome of this mixed ancestry has been a continuing tension between subjective and objective approaches to the study of psychological phenomena. On the one hand we have clinical and humanistic psychology, which privileges subjective experience and personal meaning; on the other are the more rigorous approaches of behavioral, biological, cognitive, and social psychology, which tend to recognize as valid data only results of controlled experiments. What normal people typically do and feel in their natural environments has been largely ignored by both approaches. Yet psychology will not become a complete science unless it provides an accurate mapping of everyday life in all its complexity, drawing equally on subjective and objective approaches.

One attempt in this direction has been the *systematic phenomenology* developed at the University of Chicago in the past 30 years (Csikszentmihalyi, 2000, pp. ix–xxviii). This line of research was in part inspired by the “pure” phenomenology advocated by the German philosopher Edmund Husserl, who reminded us that the only things we can really know are the events represented in our individual stream of consciousness. Although he did not go as far as doubting the existence of objects outside the mind, Husserl advocated the radical methodological step of “bracketing” the existence of

material entities such as stars, molecules, bodily processes, or anything else. By bracketing he meant not worrying about their existence but instead focusing on how they are perceived and represented in consciousness. Therefore, pure phenomenology is the mirror image of radical behaviorism. The behaviorist concerns himself only with overt actions and consigns all mental processes to a “black box;” whereas the phenomenologist is concerned only with mental processes and places everything else inside brackets that are the equivalent of a black box.

For example, a biochemist may understand hunger as a physiological process dependent on a shortage of sugar in the blood and consequent neurological responses. But a phenomenologist does not need to know what is happening at this level—he can bracket the physiological processes and be concerned only with how a person *experiences* hunger—how he describes its effects to himself and to others. We generally use both of these perspectives in everyday life, shifting moment-by-moment from one to the other. When we look at other people we tend to be behaviorists, paying attention to what they *do* and largely ignoring what might be going on in their consciousness. But when we turn attention inward we become phenomenologists, concerned primarily with how we feel rather than with what we do.

Of course, like all methods, phenomenology has its limitations. The way we represent events in consciousness is based on cognitive schemata that are partly inherited and partly learned and based on linguistic conventions and idiosyncratic modes of expression. Consequently what we think or feel about events can easily change as the filters we use to interpret them change. And we can never hope to get at the real events in someone else’s consciousness, only at their pictures mediated by the accounts of the experiencing individual. Nevertheless, Husserl’s foregrounding of the stream of consciousness as the subject matter of philosophy has been a welcome breakthrough, one that is also extremely relevant to psychology.

If one takes this approach, attentional processes acquire a fundamental importance. What we pay attention to, for how long, and how intensely will determine the content of consciousness and, hence, our experience of the world. Here phenomenology connects with the pragmatism of William James, who held that the paramount question of psychology is how a person’s attention is allocated. The content of a person’s life can be seen as the sum of billions of *experiences*—bits of information he or she has processed across the span of years (James, 1890).

But attention is an extremely scarce resource. Out of potentially thousands of things to notice, we cannot be aware of more than a few at a time. Yet every conscious act requires attention: Even everyday routines such as showering, dressing, having breakfast, and driving to work require that we

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allocate attentional resources to it. Therefore we may think of attention as the *psychic energy* required to do the “work” of living. At the same time, it is through this psychic energy that we experience what living consists of. If such is the case, the main methodological challenge is to develop a reliable measure of the events occurring in the stream of consciousness over time (Csikszentmihalyi, 1978; Csikszentmihalyi & Csikszentmihalyi, 1988). It is as a response to this challenge that the Experience Sampling Method (ESM) was devised.

The measurement of experience made possible by ESM can be called a *systematic phenomenology* in that it departs from pure phenomenology by combining a focus on lived experience with an attempt to use the tools of empirical investigation—including available technologies, research designs, and statistical analyses. Were Husserl still alive, he would probably recoil at such a nomothetic contamination of his ideographic approach. Yet knowledge evolves, and by standing on the shoulders of giants one might see views that the giants themselves could not perceive.

The Experience Sampling Method

ESM is a means for collecting information about both the context and content of the daily life of individuals. This purpose is shared by other methods, but the unique advantage of ESM is its ability to capture daily life as it is directly perceived from one moment to the next, affording an opportunity to examine fluctuations in the stream of consciousness and the links between the external context and the contents of the mind. The method achieves this degree of immediacy by asking individuals to provide written responses to both open- and closed-ended questions at several random points throughout each day of a normal week, whenever a signaling device—a pager or a Palm Pilot—prompts them to respond. The questions can be fully tailored to the interests and goals of the researcher but generally include queries focused on physical context (location, time of day), social context (number and description of others sharing the moment), activities, thoughts, feelings, and cognitive and motivational self-appraisals.

A more thorough understanding of the ESM can be derived from comparisons of the method to other means of data collection. In a naturalistic behavioral observation, information is obtained about the activities of people and the contexts within which these activities occur, but no information is gained on how people are actually experiencing those activities and contexts. The cognitive and affective dimensions of experience are lost. Further, observers either are limited to studying only public activities or, when studying more

private behavior, must consider how their presence is influencing the behavior they are observing.

Asking individuals to complete diaries of their experiences removes both of these problems and potentially allows for the gathering of perceptions, thoughts, and feelings, as well as respondents' behavior and contexts. However, diaries have rarely been used to provide reports of the subjective dimensions of experience. Major diary studies have typically focused on activity and time use (Hochschild, 1989; Robinson, 1977; Wheeler & Reis, 1991). Even for this limited purpose, diaries may not be the most accurate method of data collection. How individuals reconstruct episodic memories calls into question the accuracy of recollected reports of experiences (Yarmey, 1979).

ESM combines the ecological validity of naturalistic behavioral observation with the nonintrusive nature of diaries and the precision of scaled questionnaire measures. By sampling experience the moment it occurs, it avoids the potential distortions associated with the use of daily or weekly retrospective diaries. Of course, the method is not without its limitations. One major drawback is the demands it imposes on respondents, a burden that contributes to self-selection bias and selective nonresponse (Mulligan, Schneider, & Wolfe, 2000; Zuzanek, 1999). Another consideration is its high cost of implementation. Nevertheless, these drawbacks are well worth the richness of the data obtained. For more extensive discussions of the strengths and limitations of ESM, see Alliger and Williams (1993) and Csikszentmihalyi and Larson (1987), as well as the next few chapters.

A Brief History

The first studies using pagers activated by electronic signals transmitted at random times from a central radio station were conducted in the laboratory of Mihaly Csikszentmihalyi at the Committee on Human Development of the University of Chicago in the early 1970s. The original intent was to study "flow" experiences in everyday life. At first we asked informants to write down into diaries what they had done during the day and what the most enjoyable moments had been. However, we were soon disillusioned by the dry and generalized nature of such reports. It was obvious that people summarized the events of the day without much discrimination, according to predictable scripts. How could one obtain fresh accounts of cross sections from the stream of consciousness, short of following respondents throughout the day, which would be extremely intrusive and expensive? At the time we asked this question, certain categories of workers—physicians, plumbers,

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policemen—began to use electronic pagers as a way of staying connected with their dispatchers. One afternoon, as we were discussing the problems of getting timely reports of everyday experience, Suzanne Prescott—then a graduate student in Human Development—and Mihaly Csikszentmihalyi began to talk about the possibility of using such pagers to trigger self-reports. We drafted a response sheet (similar to the ones still in use), rented two pagers, and tried out the method on ourselves for a week. The experience, while somewhat obtrusive at first, turned out to be quite fun—and the data produced, even from a single person, was unbelievably rich.

The method quickly acquired a life of its own. It soon became apparent that it provided a means of answering a whole range of questions about human behavior that were previously beyond the reach of researchers, and so for the next few decades, ESM studies were mainly method driven or problem driven, rather than theoretically inspired. The very first published report of ESM data was a study of adolescents conducted with Reed Larson and Suzanne Prescott, both graduate students at Chicago (Csikszentmihalyi, Larson, & Prescott, 1977). The first doctoral dissertations using the method were those of Reed Larson (1977), Patrick Mayers (1978), and Ronald Graef (1978). Since then the number of theses and publications has grown beyond reckoning, the most salient landmarks are reported in the chapters that follow.

At the time we were developing ESM in Chicago, other investigators had the idea of using the emerging beeper technology to stimulate responses. The main difference between these other attempts and the stream of ESM studies coming out of Chicago was that our competitors used the technique to answer specific questions, rather than provide a full map of everyday activities and experiences. For instance John Robinson, a leading survey researcher at the University of Michigan, wanted to validate the diary responses he was getting from his subjects, and to do this he used pagers to see if the types of activities and the length of interaction reported in diary entries matched the responses to the pagers (which they did). About the same time Mark Klingler, who was interested in sexual imagery among adolescents, used pagers to ascertain how often young people thought about sex during the day. It is perfectly appropriate to use ESM in such a focused way, but as we will argue in the following paragraphs, the really unique contribution of the method is when it is used to obtain a random selection of everything a person does and experiences in everyday life.

A few years later, researchers in Germany also began to use electronic signaling and reporting devices to study behavior (Pawlik & Buse, 1982; Hormuth, 1986), and this tradition continues. A great impetus to ESM studies came when Professor Fausto Massimini of the University of Milan, Italy,

and his students established close connections with our lab. During the 1980s and up to the present, a great number of collaborative cross-national ESM studies were published. Massimini's influence was important both theoretically and methodologically. He perceived ESM as a means of documenting the process of *psychological selection*, or the steps by which individuals, as they allocate attention selectively to certain activities and stimuli, collaborate in actualizing cultural evolution (see, e.g., Inghilleri, 1999).

The ESM tradition continues at the Claremont Graduate University, where our original lab moved in 1999, and at the University of Chicago under the direction of my colleague, Professor Barbara Schneider, in the Department of Sociology. Schneider's vision and organizational ability should guarantee that this approach will not die out in the place it originally started. In the meantime, however, a great many other centers have begun to use research designs that—sometimes explicitly, sometimes not—resemble ESM. In this volume we are trying to include all studies that use electronic signals to focus on the stream of consciousness, whether they count ESM in their intellectual ancestry or not. However, given the proliferation of such studies, we are regretfully aware that some important references might be left out.

How Trustworthy Are Subjective Self-Reports?

Social scientists whose aim is to achieve objectivity are justifiably leery of putting too much credence in what people say about themselves, especially when they describe their thoughts and feelings. After all, it is well known that we tend to be biased and forgetful, that we deny and repress, that we edit our responses according to social desirability. What does it really mean when I score myself 6 on a scale where 1 corresponds to “very unhappy,” and 7 to “very happy”? It could mean I actually felt the way that I think people who are “quite happy” feel according to the definition of my culture. But it could also mean that I am wrong in my assessment—what I felt is not what most people would call “happy.” Or I might have been really miserable but didn't want anyone to know about it. Or I might have been just fed up with the study and circled the number at random. Unfortunately none of these possibilities can be ruled out when we try to measure a person's experience. So if that is the case, what's the point of studying something so ephemeral and elusive?

In some of the chapters that follow (especially Chapter 6), we will present ample evidence to the effect that despite the many distortions and contaminations that can mar self-reports, the data provided by ESM are surprisingly reliable and valid. For example, people rate themselves as much happier when they eat or have sex than when they clean the house or are stuck in

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traffic. People who at age 12 are relatively happier than other 12-year-olds are still happier at 17 than other 17-year-olds. All these psychometric issues will be discussed in detail later. At this point, it may be useful to consider three issues of a more general nature.

In the first place, a phenomenological approach assumes that subjective experience is the most objective datum we have access to and trying to reduce it to a more objective standard only decreases its objectivity. In other words, if I say I am happy—and I am not trying to deceive myself or others—then this is a fact that cannot be denied, even if a host of physiological, social, or other indicators external to my consciousness suggest otherwise. If I believe I am happy, I *am* happy—case closed. Accustomed as we are to the impressive machinery of science, it is difficult to accept the idea that nothing is as real as one's subjective experience. What we know about physics or chemistry, history or biology, we accept on faith from the experience of others—but whether we are angry or happy or hungry we know directly as incontrovertible fact.

This does not mean that ESM will always give a truthful account of a person's inner reality. It is always possible for the respondent to lie or subtly distort the account he or she gives. The argument applies to the reasonably accurate responses that most people give most of the time, as evidenced by the validity and reliability of the data. When the responses are reasonably accurate—as they usually appear to be—they give the best access we have to the inner reality of people's existence.

The second general argument for the appropriateness of ESM as a tool for assessing experience is based on the fact that a typical respondent will give between 15 and 50 "snapshots" of his or her life during a week. Thus the method allows *intrapersonal* as well as *interpersonal* comparisons. For example, what does it mean if my average happiness score while in math classes was 5.65? It could mean either that I was generally happy doing math, or its opposite—depending on my scores in other parts of my life. For example, if I scored 6.25 in music class and 5.12 in history, we would know that I felt happier when doing math than when studying history, but less happy than when involved with music.

This feature of the ESM is so important because while there is no stable and shared metric for assessing happiness (or concentration, creativity, self-esteem, and so on) *across* persons, it is sensible to assume that there is a reasonable stable metric *within* persons. In other words, my score of 5 on happiness may express the same intensity of that emotion as your score of 4, or someone else's score of 6. But it is likely that when I scored my happiness at 5, I was less happy than when I scored it 6, and more happy than when I scored it 4. Therefore many ESM analyses use Z-scores, where raw scores

are transformed so that a person's mean score on a given variable becomes 0 and scores that are one standard deviation above are 1.0, and one standard deviation below -1.0 . This transformation equalizes different uses of the response scale and makes it possible to compare how different individuals deviate from their own average set-point on a given variable in different circumstances. Outside ESM there is no other method that allows such intrapersonal study of psychological variables.

A third characteristic of ESM that should be kept in mind is that it samples experiences randomly. It is easy to underestimate this feature. In fact, if one wants to use the method for a very specific purpose—such as the experience of driving on freeways, for instance—targeted rather than random responses are more appropriate. But for most purposes, random responses are more preferable. In the first place, they make it possible to estimate how much time people spend doing various activities during their waking hours. They give a relatively complete and undistorted picture of daily life, and often provide unexpected glimpses into it that one would have never anticipated. Most importantly, by using a random schedule, researchers with different questions and divergent interests can use the same data, or the same investigator can use the same data again at a later time for a different purpose. None of this would be possible if one only sampled responses at the workplace, for instance, or only when watching television or only on weekends.

What Can We Learn From ESM?

In the last analysis, even the severest critic must agree that, at the very least, ESM responses measure what the person decides to communicate about his or her inner states. When I rate my happiness at 6 on a 7-point scale, I am saying that at this moment I am willing to state that I am quite happy. Does this mean that I am *really* quite happy? We will probably never know. In real life, however, we take such verbal accounts quite seriously. We are often willing to share life and property with someone who says, "I love you," even though we really don't quite know what this other person means by "love." If your boss says "I am not happy with your work" often enough, you will get ready to start looking for a different job, even though you don't know whether the boss is really unhappy with the work you did, or she just says so out of envy or plain meanness. We could not function in a social world if we did not take seriously what others say. Of course we always have to take such communications with a healthy dose of skepticism, but by and large verbal accounts are the currency of social life.

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Purists may still object that when we claim to measure concepts such as self esteem, creativity, or happiness with ESM, we only assess pale verbal signs of the underlying complex reality. My inclination in responding to such objections is to invoke a variation on the old saying, *If something is worth doing, it's worth doing well*. Abraham Maslow once pointed out that it was equally true that *If something is not worth doing, it's not worth doing well*. Both of these sayings make sense, and we would add a third one that is also true: *If something is worth doing, it's worth doing not well*. In other words, if there is no better way of doing something that needs to be done, it's preferable to do it as well as possible—even if it isn't perfect (here another old saying comes in handy: *Perfection is the enemy of the good*). At this point, ESM, while far from perfect, is the best method for getting information on two important topics: (1) what people do all day, where, and with whom; and (2) how people report experiencing different moments in their lives, along a great variety of dimensions.

These two sources of data in turn can be used to answer an almost endless chain of further questions. For example, here are a few that have been answered by ESM studies: Do Asian American students experience studying differently from Caucasian Americans (Asakawa & Csikszentmihalyi, 1998)? Do Himalayan mountain climbers buried in their tent by an avalanche for 72 hours enjoy themselves (Bassi, 2002)? Can the frequency of physical pain in young adults be predicted by how they had experienced their middle school years (Patton, 1998)? Does the amount of material energy (e.g., electricity) we use contribute to how happy we feel (Graef, McManama, & Csikszentmihalyi, 1981)?

As these examples suggest, the range of possible applications of the method is rather extensive. Thus far, most studies have been concerned with one of the following nine major themes: (1) the psychology of adolescence, especially in educational settings; (2) the experience of work, work stress, and work satisfaction; (3) family dynamics and marital satisfaction; (4) the experience of psychopathology (e.g., eating disorders, depression, substance abuse); (5) the experience of media, especially television viewing; (6) cross-cultural comparisons of time use and quality of experience; (7) gender differences in activities and in the quality of experience; (8) solitude, friendship, and affiliation; (9) the optimal experience of flow. These and other applications of ESM will be reviewed in detail in the chapters that follow.

In fact, there are few important questions in psychology that cannot benefit from the systematic sampling of experiences. The method is not easy to use, so it should not be adopted lightly. But after one tries it once, it can become addictive. For one thing, it gives such an enormously rich and intimate perspective on people's lives. Second, the data it provides are almost