

Global and Episodic Reports of Hedonic Experience

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Sage

Most people would agree that a life filled with pleasant activities is preferable over a life filled with unpleasant ones. As Juster (1985, p. 333) noted, "an important ingredient in the production and distribution of well-being is the set of satisfactions generated by activities themselves." As the contributions to this volume illustrate, life-events may change a person's mix of activities and the time allocated to them. If this is a good or bad thing in terms of the person's quality of life depends, in part, on whether the activities are experienced as pleasant or unpleasant. The integral of experienced enjoyment and misery over time provides an indicator of well-being that addresses this issue (Kahneman, 1999). To compute it, we need two sources of data: (i) time-use data that bear on the allocation of time to activities and (ii) data that indicate the extent to which a given activity is enjoyable. While most contributions to this volume address the former component, this chapter is primarily concerned with the latter: How do we determine if people enjoy what they do?

One answer, usually favored by economists, is to rely on people's choices. Presumably, they know what is good for them and reveal their preferences in their choice of activities. A second answer, usually favored by psychologists and social scientists, is to ask for self-reports of enjoyment. Such reports may take one of three forms. First, we may ask respondents to provide global reports of how much they generally enjoy an activity, e.g., along a rating scale from "dislike very much" to "enjoy a great deal." This is the strategy used by Juster and colleagues (e.g., Juster & Stafford, 1985; Robinson, 1977) in their pioneering studies of Americans' use of time. Second, we may assess people's hedonic experience in situ, using methods of momentary data capture, like experience sampling (e.g., Stone, Shiffman, & DeVries, 1999). For reasons discussed below, these concurrent reports set the gold standard for assessing hedonic experience, but the associated high cost and respondent burden render experience sampling unsuitable for

large scale studies. As a compromise, we may, third, collect retrospective reports of respondents' feelings during a recent specific instance of the activity. The Day Reconstruction Method (DRM; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004a) provides a technique for doing so and has been shown to capture much of the information provided by experience sampling, while being suitable for large samples.

As we will illustrate, which of these measurement strategies we use may profoundly affect at which conclusions we arrive. In general, choices and global reports of "usual" enjoyment are likely to show good convergence – but may fail to capture what people actually experience in situ. Conversely, concurrent and retrospective episodic reports also show good convergence and capture actual hedonic experience – but may fail to predict people's choices and behaviors.

The chapter is organized as follows. We first review psychological research into self-reports of emotions, paying attention to the different sources of information that respondents draw on when providing concurrent and retrospective episodic or global reports of hedonic experience. Next, we introduce the Day Reconstruction Method and a close variant, the Event Reconstruction Method. Both are designed to collect retrospective episodic reports about a recent specific instance of an activity. Subsequently, we report on studies that compare global and episodic reports of hedonic experience and highlight how these reports diverge in a reliable and theoretically predicted manner. The chapter concludes with a discussion of the methodological implications.

Reporting on One's Feelings: Concurrent, Episodic, and Global Reports

Numerous studies have documented profound discrepancies between people's concurrent and retrospective reports of emotional experience (e.g., Gilbert & Ebert, 2002; Kahneman, 1994; Loewenstein & Alder, 1995; for a comprehensive review see Robinson and Clore, 2002). To conceptualize the underlying processes, Robinson and Clore (2002) proposed an accessibility model of emotion report.

When people report on their *current* feelings, the feelings themselves are accessible to introspection, allowing for accurate reports on the basis of experiential information. But affective experiences are fleeting and not available to introspection once the feeling dissipated. Accordingly, the opportunity to assess emotion reports based on experiential information is limited to methods of momentary data capture (Stone, Shiffman, Atienza, & Nebeling, in press), like experience sampling (Stone et al., 1999). Once the feeling dissipated, the affective experiences need to be reconstructed on the basis of episodic or semantic information. When the report pertains to a specific *recent episode*, people can draw on episodic memory, retrieving specific moments and details of the recent past. Such reports can often recover the actual experience with some accuracy, as indicated by convergence with concurrent reports (e.g., Kahneman et al., 2004a; Robinson & Clore 2002; Stone, Schwartz, Schwarz, Schkade, Krueger, & Kahneman, 2006). In contrast, *global* reports of past feelings are based on semantic knowledge. When asked how they "usually" feel during a particular activity, people draw on their general beliefs about the activity and its attributes to arrive at a report. The actual experience does not figure prominently in these global reports because the experience itself is no longer accessible to introspection and episodic reconstruction is not used to answer a global question. Finally, as Xu

and Schwarz (2006) noted, the same semantic knowledge serves as a basis for *predicting* future feelings, for which episodic information is not available to begin with. These hedonic predictions, in turn, often serve as a basis for behavioral *choice* (March, 1978).

This rationale predicts a systematic pattern of convergences and divergences in affect reports. First, concurrent reports and retrospective reports pertaining to specific recent episodes are likely to show good convergence, provided that the episode is sufficiently recent to allow detailed reinstatement in episodic memory. Second, retrospective global reports of past feelings and predictions of future feelings are also likely to converge, given that both are based on the same semantic inputs. Hence, global memories are likely to “confirm” predictions. Third, choices are based on predicted hedonic consequences, and are therefore usually consistent with predictions and global memories. However, fourth, global retrospective reports as well predictions and choices will often diverge from concurrent and episodic reports, given that the different types of reports are based on different inputs. As a result, our expectations and global memories go hand in hand, but may fail to reflect what we actually experience moment to moment.

In addition, a large body of research into affective predictions shows that people’s forecasts are usually more extreme than their experiences. Known as the “focusing illusion” (Schkade & Kahneman, 1998), this bias derives from a focus on core attributes of the activity at the expense of other information. Thus, Midwesterners who predict how happy they would be if they moved to California may focus on the pleasant Californian climate, missing, for example, that they would still have to spend most of the day in an office cubicle. Predictions and choices as well as global retrospective reports are likely to be subject to such focusing effects. Hence, we

may, fifth, expect that predictions and global retrospective reports overestimate the intensity of the experience, relative to concurrent and episodic reports.

Numerous findings are compatible with these predictions (see Robinson & Clore, 2002, for a review). As an illustration, consider people's vacation experiences. Not surprisingly, people believe that vacations are highly enjoyable and this belief shapes their predictions and global memories, even when the actual experience was less rosy. Mitchell and colleagues (1997) assessed prospective, concurrent, and retrospective reports of vacation enjoyment. They found that prospective reports converged with retrospective reports; however, both the predicted and remembered affect was more positive than the affect reported concurrently during the vacation. In a more detailed follow-up study, Wirtz and colleagues (2003) tracked college students before, during, and after their spring-break vacations and compared their predicted, concurrent, and remembered affect. They found that predicted and remembered experiences were more intense (i.e., more positive and more negative) than was actually the case, as reflected in concurrent reports collected during the vacation. However, the remembered experience best predicted the desire to repeat the vacation, illustrating that we learn from our memories rather than from our actual experiences. Our own research, reviewed below, will further highlight such discrepancies.

Methods for Assessing Episodic Reports

As the preceding discussion indicates, experience sampling methods are the gold standard for assessing people's affective experience. They can capture the experience in situ, while the person has access to the current feeling, and hence minimize problems of recall and inference. However, their high cost and respondent burden limits their feasibility for large scale studies. As an alternative, we may draw on episodic reports, provided the relevant episode is recent and can

be reinstated in memory in sufficient detail. Two methods were developed for this purpose. The Day Reconstruction Method (DRM) is designed to capture the activities and experiences of the preceding day; this has the advantage of limiting reports to very recent episodes, which are recalled in the context of other episodes of the day. However, the focus on a single day renders it difficult to assess infrequent activities, which may not have occurred for a sufficient number of respondents. The Event Reconstruction Method (ERM) avoids this limitation by asking respondents to review the most recent episode of such activities. Next, we describe these methods and report selected findings bearing on their validity.

Day Reconstruction Method

The DRM is designed to collect data describing the experiences a person has on a given day, through a systematic reconstruction conducted on the following day. The DRM builds on the strengths of time-budget measurement (Juster & Stafford, 1985; Michelson, 2005; Robinson, 1977) and experience sampling (Stone, Shiffman, & DeVries, 1999), and employs techniques grounded in cognitive science.

Method. The DRM asks respondents to reconstruct the *previous* day by completing a structured self-administered questionnaire.¹ Respondents first reinstantiate the previous day into working memory by producing a short diary consisting of a sequence of episodes, usually covering the time from when they got up to when they went to bed. The format of this diary draws on insights from cognitive research with Event History Calendars (Belli, 1998) and facilitates retrieval from autobiographical memory through multiple pathways; its episodic reinstatement format attenuates biases commonly observed in retrospective reports (Robinson & Clore, 2002; Schwarz & Oyserman, 2001; Schwarz & Sudman, 1994). Respondents' diary

¹ A sample instrument and related papers are available at http://sitemaker.umich.edu/norbert.schwarz/day_reconstruction_method

entries are confidential and the diary does not need to be returned to the researcher. This allows respondents to use idiosyncratic notes, including details they may not want to share.

Next, respondents receive a response form and are encouraged to draw on their confidential diary notes to answer a series of questions. These questions ask them to describe key features of each episode, including (1) when the episode began and ended, thus providing time use data; (2) what they were doing; (3) where they were; (4) whom they were interacting with; and (5) how they felt during that episode, assessed on multiple affect dimensions. The details of this response form can be tailored to the specific issues under study; only this form is returned to the researcher for analysis. For methodological reasons, it is important that respondents complete the diary before they are aware of the specific content of the later questions about each episode. Early knowledge of these questions may affect the reconstruction of the previous day and may introduce selection biases. The DRM can be administered individually or in group settings and respondents can report on a complete day in 45 to 75 minutes.

In sum, the DRM provides a joint assessment of activities and subjective experiences, including information about the duration of each experience that can be used for duration weighted analyses. Compared to experience sampling, the DRM has the advantage of covering a full day, which experience sampling can only provide through very dense sampling schemes with accompanying high respondent burden. Compared to global reports of daily experiences, the DRM has the advantage of lower susceptibility to retrospective reporting biases.

Findings and correspondence with experience sampling. Kahneman and colleagues (2004a) report illustrative findings based on a sample of 909 employed women in Texas. Table 1 shows the time spent in selected activities and in different social interactions along with their affective quality.

--Table 1--

DRM reports have been validated against experience sampling data obtained from other samples (Kahneman et al., 2004a; Stone et al., 2006). These analyses showed that the DRM captures changes in affect over the course of the day that closely correspond to the changes captured by experience sampling. Importantly, these diurnal patterns are not obvious to respondents and often contradict respondents' own beliefs, indicating that these episodic reports of affect are not derived from general semantic knowledge. Figure 1 shows two examples.

-- Figure 1 --

Event Reconstruction Method

Although infrequent activities are more likely to be captured by the full-day coverage of the DRM than by experience sampling, the usefulness of the DRM is limited when only a few respondents engage in an activity on a given day. The ERM addresses this shortcoming by extending the time frame beyond a single day; it asks respondents to reconstitute the “most recent” episode of the activity in memory and then proceeds as described above for the DRM. Note that this method provides information about the affective experience associated with an activity, but does not provide time-use data.

-- Figure 2 --

Comparisons of ERM and DRM reports indicate that the ERM can capture the same information as the DRM, provided that the last episode is indeed recent. Figure 2 provides an example of this correspondence. We hasten to add, however, that recalling episodes in the context of preceding episodes (as done in the DRM) is preferable over the more isolated recall of episodes in the ERM. Moreover, we currently know little about how “recent” is recent enough for an accurate report; the time that can elapse without negative consequences for data quality is

likely to depend on the memorability of the specific episode. Once sufficient time passed, episodic information will no longer be accessible. In this case, respondents will turn to general semantic knowledge to arrive at an answer, as they do for global reports, thus undermining the goal of episodic reporting. These methodological issues await further research.

The Divergence of Global and Episodic Reports

As expected on theoretical grounds, we observed in several studies that global and episodic retrospective reports of hedonic experience diverge in systematic ways. Moreover, predictions of hedonic experience show close correspondence with global retrospective reports, but neither predictions nor global retrospective reports seem to capture what people actually experience. We first review two selected examples and discuss the underlying processes; subsequently, we turn to their methodological implications.

How Much Do People Enjoy Being With Their Kids?

In 1975, Juster and his colleagues asked American survey respondents to rate 28 activities from "dislike very much" (0) to "enjoy a great deal" (10). They observed that activities with one's children consistently topped the list (ranks 1-4), whereas grocery shopping and cleaning the house were reported as least enjoyable (rank 27 and 28; Juster, 1985, p.336). Later surveys replicated these rankings with minor variations (Juster, 1985), mostly due to changes in the activities listed, and a conceptual replication in Sweden (Flood, 1997) yielded similar results. Despite these high rankings of child-related activities, several studies indicate that parents' marital satisfaction drops when children arrive, reaches a life-time low when the children are teenagers, and recovers after the children leave the house (for a review see Argyle, 1999). Figure 3 illustrates these findings. Are the children a more mixed pleasure than global reports of

enjoyment convey? As shown in Table 1, DRM data of 909 employed women in Texas suggest so (Kahneman et al., 2004a). In episodic reports of affective experience, taking care of one's children ranks just above the least enjoyable activities of working, housework, and commuting.²

-- Figure 3 --

Several processes contribute to this theoretically predicted divergence. First, global judgments of enjoyment are based on general beliefs ("I enjoy my kids"), which are often supported by belief-consistent memories of great vividness (like fond memories of shared activities). Yet many mundane episodes of a given day are less enjoyable than the episodes that make for fond memories. Second, activities are organized in memory by their focal features. Attempts to recall memories pertaining to one's interactions with the children will therefore result in an overrepresentation of child focused activities, at the expense of numerous other episodes of the day in which the children were present. The DRM avoids many of these problems of selective recall and provides a fuller assessment of the affective impact of children throughout the day. Our findings suggest that part of the reason that children seem more enjoyable in general than on any given day is simply that parents do not consider the full range of child-related time use when providing global reports. Finally, global reports are subject to higher social desirability pressures than episodic reports. A parent who reports, "I don't enjoy spending time with my children" is clearly a bad parent; but noting that "They were a pain last night" is perfectly legitimate. Hence, episodic reports of hedonic experience, as collected in the DRM and ERM, are likely to attenuate the influence of social desirability and self-presentation concerns.

² Data from other samples replicate this pattern.

Does It Feel Better To Drive A Luxury Car?

Findings from other domains of hedonic experience show similar divergences, as a series of studies into drivers' enjoyment of their cars illustrates (Xu & Schwarz, 2006). Not surprisingly, people expect that driving a luxury car is more enjoyable than driving an economy car. When undergraduates were asked to predict how they would feel while driving a BMW, a Honda Accord, or a Ford Escort, they expected that positive feelings (e.g., happy, thrilled) increase, and negative feelings (e.g., depressed, frustrated) decrease, with the value of the car. The first panel of Figure 4a shows the reported positive affect as an example. The students' expectations are consistent with drivers' global reports of how they feel driving their cars. Specifically, in the global reporting conditions, we asked university faculty and staff (second panel of Figure 4a) and participants in a web survey (third panel) which car they drive (brand, model, and year) and how they generally feel while driving their car, using the affect scales along which students made their predictions. In both samples, the Bluebook value of the car was a significant predictor of the drivers' reported emotions. Figure 4a shows the mean estimated positive affect scores corresponding to the Bluebook values of a BMW, Accord, or Ford Escort. Apparently, the students' predictions of drivers' feelings were right on target.

-- Figure 4a --

Episodic reports of the drivers' experience, however, paint a different picture. We asked university faculty and staff assigned to the episodic reporting condition to recall their most recent commute (that is, an episode from the same day) and to report how they felt during that specific episode of driving. In this case, the quality of the car driven, as indexed by its Bluebook value, was thoroughly unrelated to the drivers' affective experience. The first panel of Figure 4b shows the mean estimated positive affect scores corresponding to the Bluebook values of a BMW,

Accord, or Ford Escort. Participants in the web survey were asked to recall the last time they drove their car for 20 minutes or more and to indicate the nature of this trip before they reported how they felt during this specific episode of driving. Again, the quality of the car driven was unrelated to the drivers' affective experience. The second panel of Figure 4b shows the estimated mean positive affect scores.

-- Figure 4b --

The observed divergence of global and episodic reports is consistent with theoretical predictions. When asked to report how they usually feel while driving their car, drivers focus on attributes of the car to arrive at an answer. This is also what others do when asked to predict the driver's feelings, resulting in the observed convergence of undergraduates' predictions and drivers' global reports. In both cases, the positive attributes of luxury cars result in higher reports of expected or experienced positive affect. But while driving, something else is on the driver's mind and the attributes of the car make little difference, as reflected in drivers' episodic reports. Instead, the driver's feelings are a function of the purpose of the trip and driving to dinner, for example, feels better than commuting to work. This logic suggests that the car should make a difference when the car is on the driver's mind, that is, in car-focused episodes. Empirically, this is the case. The respondents to the web survey reported a small number of episodes that they categorized as "driving for fun." As expected on theoretical grounds, the positive affect reported for these episodes increased with the Bluebook value of the car. By the same token, we would expect that new cars or stuttering old clunkers are likely to affect the driver's experience, given that they may be on the driver's mind while driving.

Life's Circumstances

Our analysis further predicts that the objective circumstances of a person's life should

figure more prominently in global evaluations than in the person's moment-to-moment affective experience. When asked, "How satisfied are you with your life as a whole?" people are likely to compare our fortune to others (for a review see Schwarz & Strack, 1999). Variables like income, education, employment or marriage are likely to come to mind and will figure relatively prominently in the assessment. However, these variables are unlikely to be on people's mind as they pursue their daily activities. Hence, their influence on moment-to-moment experiences is likely to be indirect and will mostly depend on whether these variables influence which activities people engage in. We may therefore expect that objective background variables are more closely related to satisfaction judgments than to moment-to-moment affective experience. Finally, global reports of affective experience should fall in between these extremes, reflecting that background variables may be considered in arriving at theory-driven global assessments of one's feelings.

The findings of a recent DRM study with 745 women in Columbus, Ohio, support these predictions (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006). These women reported their overall life-satisfaction, estimated the percent of time they spent in a good mood yesterday, and finally completed a DRM for the preceding day. Figure 5 shows the correlation of income, marital status, years of education, and employment with these judgments. As expected, these objective circumstances of life were significantly correlated with satisfaction judgments but exerted a negligible influence on moment-to-moment affect. Again, however, global reports of affect in form of estimates of the percent of time spent in a good mood again exaggerated the influence of background conditions.

-- Figure 5--

Methodological Implications

The combination of time-use data and indicators of hedonic experience provides a promising approach to characterizing subjective well-being. It holds particular promise for investigating the impact of life-events, which may influence the allocation of time to activities as well as the affective experience associated with a given activity. While the measurement of time-use has seen considerable methodological progress, less attention has been devoted to the assessment of the subjective experiences associated with activities. To date, time-use surveys have relied exclusively on global reports of enjoyment (e.g., Flood, 1997; Juster, 1985). Such global reports seem to have high face validity because they usually converge with our own intuitions. Ironically, however, this convergence merely reflects that we, as observers, draw on the same general knowledge about the world as the respondents who report on their own lives, and hence arrive at similar rankings -- as the convergence of students' predictions and drivers' global affect reports in the above car studies illustrates. When respondents' reports pertain to their affective experiences during a recent specific episode, or when affective experiences are assessed in situ, we often arrive at strikingly different conclusions about the hedonic value of activities.

The observed discrepancies reflect that feelings are fleeting and not well represented in memory (Robinson & Clore, 2002). Hence, respondents need to draw on episodic or semantic knowledge to arrive at a report. When the episode is sufficiently recent to allow a detailed reinstatement in memory, episodic reports can provide relative accurate information about affective experience, as indicated by the convergence of concurrent ESM and retrospective DRM reports (Kahneman et al., 2004a; Stone et al., 2006). When episodic knowledge is not accessible, or its reinstatement not encouraged, respondents draw on general semantic knowledge to infer

what their experience must have been. Such belief-driven reports approach the actual experience when the belief is correct, but diverge from the actual experience when it is not. At present, little is known about the variables that determine the accuracy of beliefs about one's own affective experiences. Moreover, the experience of major life-events is probably associated with changes in relevant beliefs (Ubel, Loewenstein, Schwarz, & Smith, 2005), which provides a promising avenue for further research.

The reviewed findings have important methodological implications. Researchers who want to assess peoples' actual hedonic experiences should preferably do so with concurrent reports, using experience sampling methodologies (Stone et al., 1999). If this is not feasible, episodic reporting methods like the DRM or ERM provide a less burdensome alternative that can capture the experience with some accuracy, provided that the relevant episodes are recent. In contrast, global reports of affect are theory-driven, not experience-driven. They capture respondents' beliefs about their experience rather than the experience itself and are subject to pronounced focusing effects, as the reviewed studies illustrate. Finally, people's choices are based on their expected hedonic consequences. These expectations converge with global memories, but often diverge from the actual experience. Hence, predictions, choices, and global memories are poor indicators of experience. Yet when people make behavioral decisions, global memories and expectations are likely to figure prominently in the information they consider. Ironically, this turns faulty indicators of experience into good predictors of future choices and behaviors (e.g., Wirtz et al., 2003).

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Table 1. Mean affect by situation. Positive affect is the average of happy, warm/friendly, enjoying myself. Negative affect is the average of frustrated/annoyed, depressed/blue, hassled/pushed around, angry/hostile, worried/anxious, criticized/put down. For each situation, the table shows the mean ratings on affect descriptors, the average amount of time all respondents spent in the situation, and the proportion of respondents reporting at least one episode of that type. Episodes for which the respondent reported multiple activities or interaction partners were included in each of the corresponding computations.

	Mean affect rating					Mean hours/day	Proportion of sample reporting
	Positive	Negative	Competent	Impatient	Tired		
Activities							
Intimate relations	5.10	0.36	4.57	0.74	3.09	0.2	0.11
Socializing	4.59	0.57	4.32	1.20	2.33	2.3	0.65
Relaxing	4.42	0.51	4.05	0.84	3.44	2.2	0.77
Pray/worship/meditate	4.35	0.59	4.45	1.04	2.95	0.4	0.23
Eating	4.34	0.59	4.12	0.95	2.55	2.2	0.94
Exercising	4.31	0.50	4.26	1.58	2.42	0.2	0.16
Watching TV	4.19	0.58	3.95	1.02	3.54	2.2	0.75
Shopping	3.95	0.74	4.26	2.08	2.66	0.4	0.30
Preparing food	3.93	0.69	4.20	1.54	3.11	1.1	0.62
On the phone	3.92	0.85	4.35	1.92	2.92	2.5	0.61
Napping	3.87	0.60	3.26	0.91	4.30	0.9	0.43
Taking care of my children	3.86	0.91	4.19	1.95	3.56	1.1	0.36
Computer/e-mail/Internet	3.81	0.80	4.57	1.93	2.62	1.9	0.47
Housework	3.73	0.77	4.23	2.11	3.40	1.1	0.49
Working	3.62	0.97	4.45	2.70	2.42	6.9	1.00
Commuting	3.45	0.89	4.09	2.60	2.75	1.6	0.87
Interaction partners							
Friends	4.36	0.67	4.37	1.61	2.59	2.6	0.65
Relatives	4.17	0.80	4.17	1.70	3.06	1.0	0.38
Spouse/SO	4.11	0.79	4.10	1.53	3.46	2.7	0.62
Children	4.04	0.75	4.13	1.65	3.40	2.3	0.53
Clients/customers	3.79	0.95	4.65	2.59	2.33	4.5	0.74
Co-workers	3.76	0.92	4.43	2.44	2.35	5.7	0.93
Boss	3.52	1.09	4.48	2.82	2.44	2.4	0.52
Alone	3.41	0.69	3.76	1.73	3.12	3.4	0.90
Duration-weighted mean	3.89	0.84	4.31	2.09	2.90		
% time > 0	97%	66%	90%	59%	76%		

Fig. 1. Comparison of Diurnal Patterns of Tiredness (upper panel) and Negative Affect (lower panel) for DRM and ESM Studies. Points are standard scores computed across hourly averages within each sample.

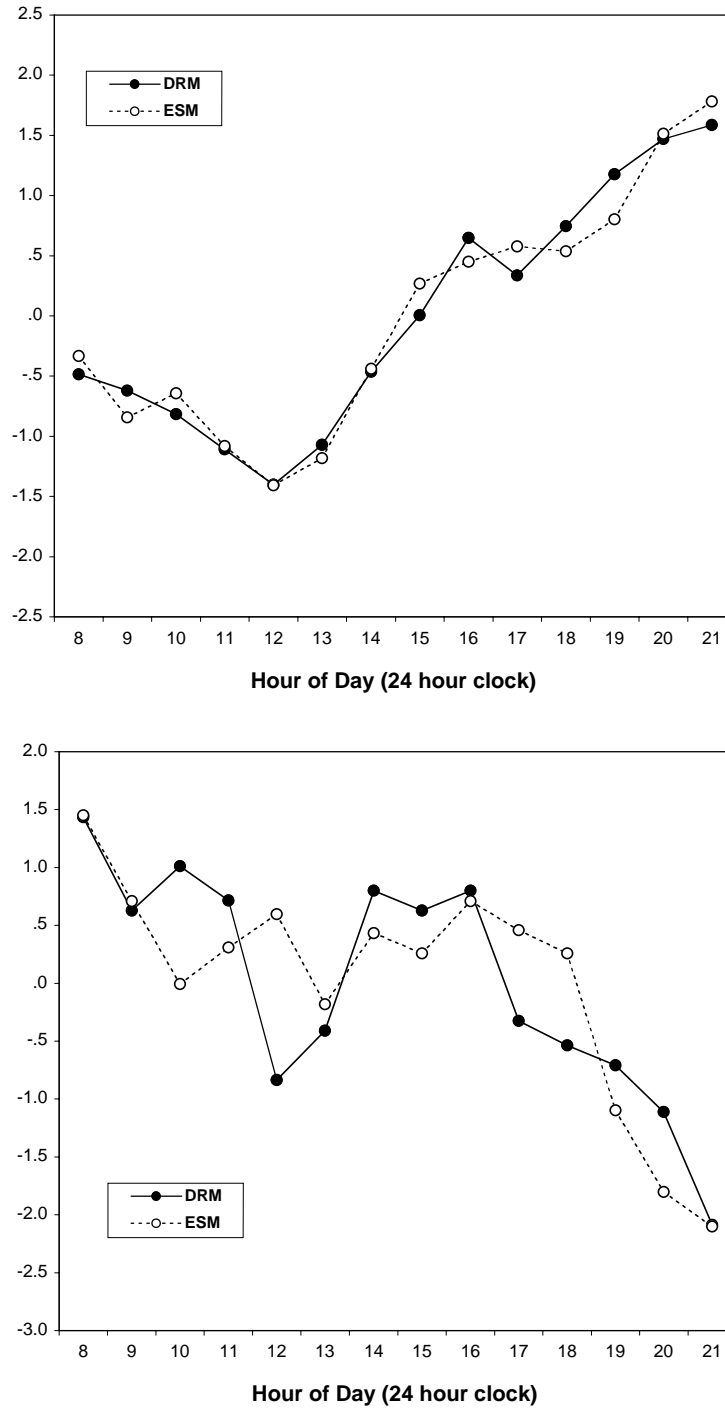


Figure 2. Correspondence or DRM and ERM reports.

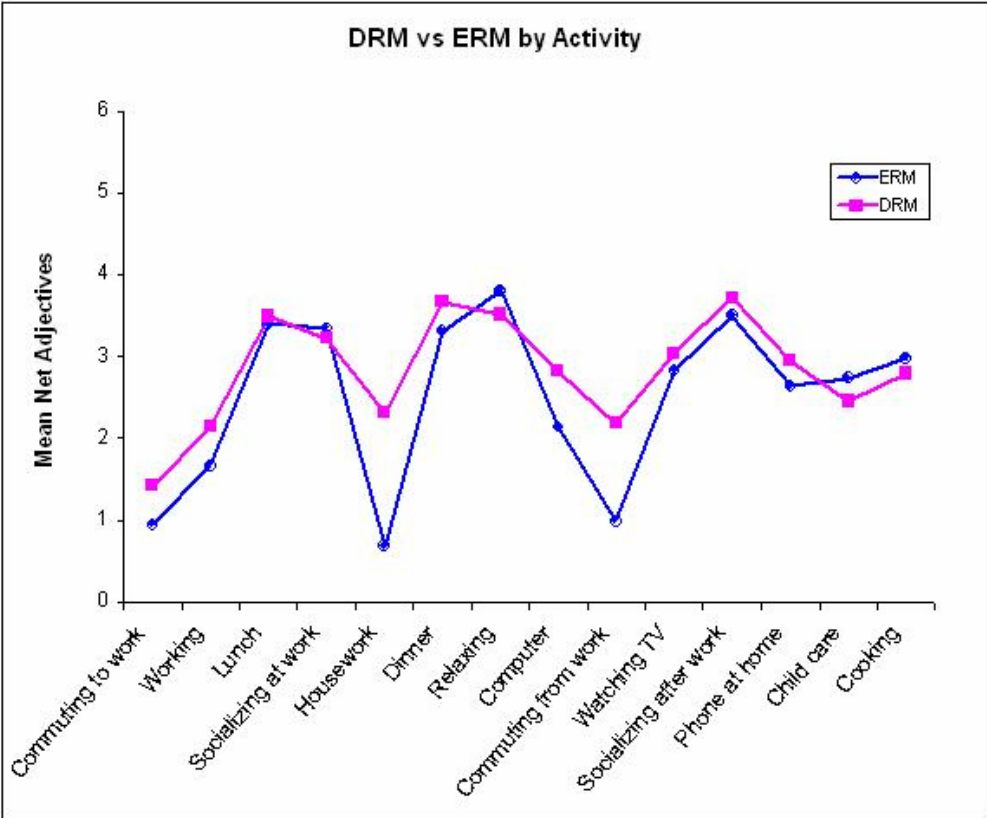


Figure 3. Marital Satisfaction Across the Family Life-Cycle.

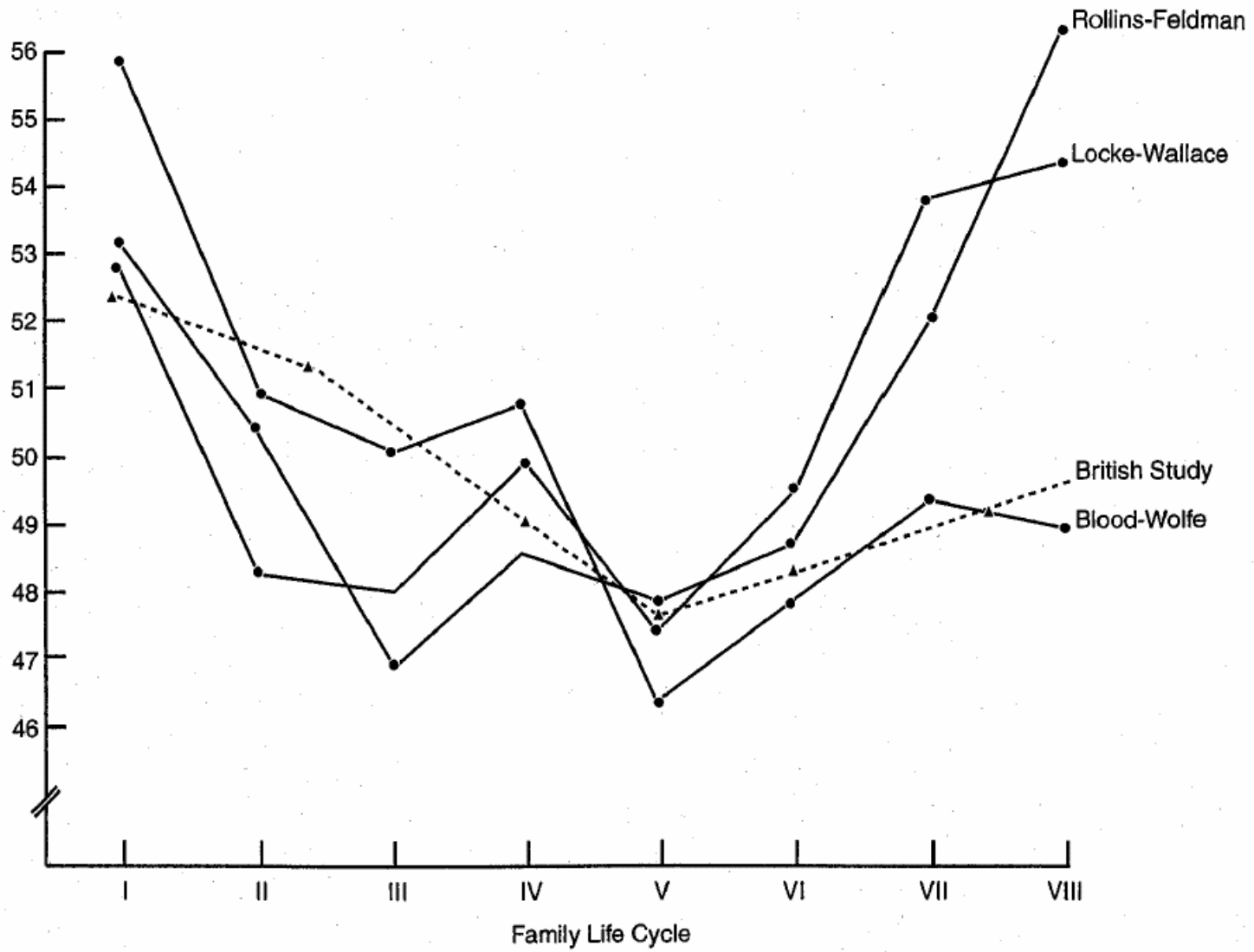


Figure 4a. Global Reports of Driving Experiences

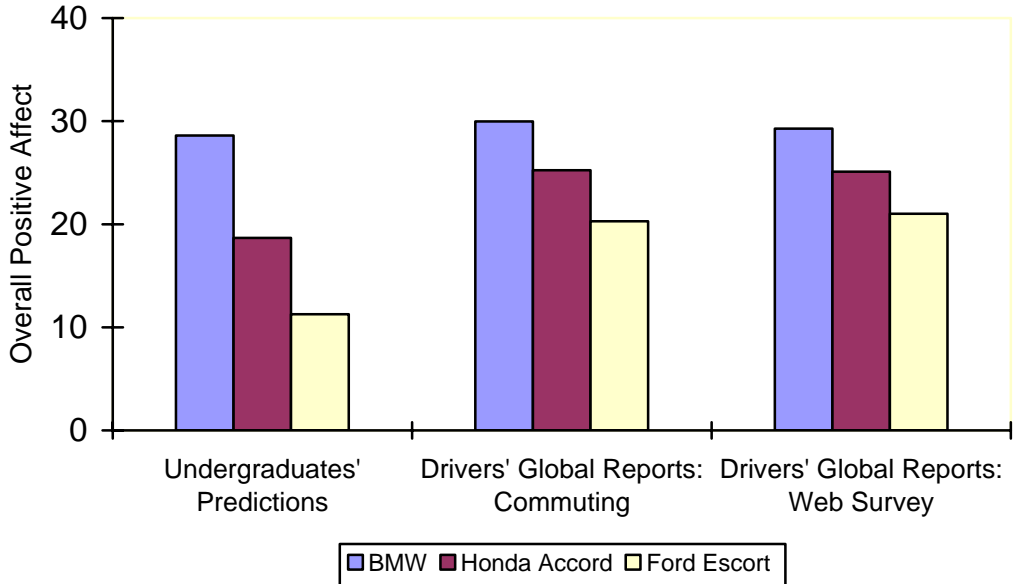


Figure 4b. Episodic Reports of Driving Experiences

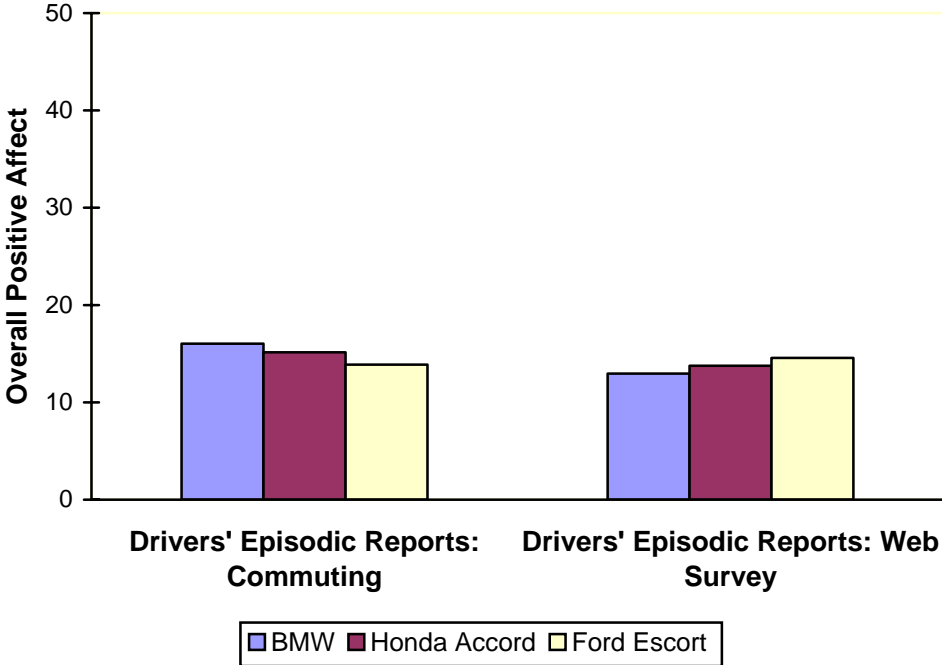


Figure 5. Correlation of Income, Marital Status, Education, and Employment Status with Life-satisfaction, Global, and Moment-to-Moment Affect Reports

