Final Report

**SUBJECTIVE ASSESSMENTS OF ECONOMIC
WELL-BEING: WAVE II**

Cognitive Interviews

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Subjective Assessments of Economic Well-Being: Wave II

During the past twenty years, many economists and social scientists have shown interest in measuring individuals' assessments of their own economic well-being relative to objective financial measures. In some cases, these self-ratings are used in the assessment of poverty; in other cases, these ratings are included in 'quality of life' measurements. In all cases, there is a belief that the actual opinions of people about their own economic situation is a valuable source of information, supplying details and finesse to the otherwise faceless information obtained by considering the grosser measures of objective income and expense levels.

Much of the work on subjective measures of economic well-being has focused upon the *minimum income*, *income evaluation,* and *income satisfaction* questions used in Europe, Canada, Australia, and the United States. However, in previous research conducted by the Bureau of Labor Statistics, the traditional *minimum income, income evaluation,* and *income satisfaction* questions were found to be somewhat complex and burdensome for respondents and to contain ambiguous language and response categories (final report, January, 1997).

Based upon these findings, we tested possible revisions to existing questions, examined alternative approaches to the measurement of economic well-being, and began investigating the processes by which people assess their income and expenses. This second wave of testing was intended to take what we learned from the first phase conducted in 1996 and extend our knowledge by:

1. testing new question wording directed at the more problematic aspects of the existing questions,

2. testing alternative scales and formats, especially those that are less tied to ambiguous verbal categories, and

3. looking at specific components of income and expenses, the assessment of which may sum to a global economic assessment.

We conducted forty (40) individual interviews from the greater Washington metroplex, all of which were conducted on-site at BLS. Each interview included the following components:

1.   two versions of the *minimum income question* (see Appendix A),
2.   three versions of the *income evaluation question* (see Appendix B),
3.   tests of alternative scales for measuring economic well-being,
     a.   *faces scale* (see Appendix C),
     b.   *feeling thermometer* (see Appendix D),
     c.   *the delighted/terrible Scale* (see Appendix E),
     d.   *circles scale* (see Appendix F),
     e.   *worry scale* (see Appendix G),
     f.   *economic attitudes* (see Appendix H),
     g.   *ladder scale* (see Appendix I),
     h.   *balance of income and expenses* (see Appendix J),
     i.   *positive and negative line* (see Appendix K)
     j.   *the pie* (see Appendix L).

The interviews were semi-structured cognitive interviews that lasted about one hour each. Structure was provided by the scripted questions outlined above. The respondents were selected

by advertising in local newspapers. Each participant received an assurance of confidentiality and was paid $25.00 for participating in the interview. The actual burden hours for the forty interviews was 32.4 burden hours. Since all forty study participants were compensated $25.00 for their time and travel expenses, the cost to the Federal Government for reimbursing subjects was $1,000.

A.   MINIMUM INCOME QUESTIONS (MIQ)

In this study, participants were given both the traditional version of the MIQ, asking for a total estimated amount needed to "make ends meet" and a new trial version, asking specifically for shelter, food, clothing, utilities, and work expenses (see Appendix A). The order of presentation was randomly varied. When asked to compare the two versions, participants overwhelming expressed a preference (87.5%) for the new version with its five specific questions. The reasons expressed for this preference included:

- The old question was wordy and convoluted; the new version was simpler and easier to understand;

- The old question was too long to comprehend; the new version itemized the question into smaller more manageable components; and

- The old question caused respondents to give answers that they felt were inaccurate because important expenses did not always spring to mind; the new question helped participants create answers that they felt were more accurate by asking about specific expenses.

The next step was to compare the numeric estimates obtained by each version of the MIQ. Two participants said that they could not construct the total estimate required by the original version of the question, so this analysis is computed for the thirty-eight (38) test subjects who answered both versions. Beginning with the descriptive statistics we find:

Table 1:   Comparison of the Descriptive Statistics for Two Versions of the MIQ

	N	Mean	St. Dev.	Median	Minimum	Maximum
Old version:						
Single estimate	38	2793.08	1559.7	2000	500	6250
New version:						
Five estimates (summed)	38	1562.50	760.6	1545	710	2500

The old version not only produced a higher mean than the new version, but also greater variability around that mean. This is seen most clearly when considering the spread between the lowest and highest estimates produced by the old version ($5,750 difference) and the new version ($1,790 difference).

Another problem is seen when comparing the within-subject estimates produced by the two versions of the question. The correlation between the two versions is only 0.565. While this indicates a statistically significant association between the two versions, it shows clearly that they are not identical and do not produce the same information. In other words, only about 32% of the variance in one set of answers is accounted for statistically by the other set of answers, since the coefficient of determination $r^2 = .565^2 = .319$.

One may conclude, therefore, that the difficulties reported by test subjects in comprehending and responding to the original MIQ (i.e., a total estimate of "income needed to make ends meet") are very real. That is to say, respondents find it difficult to track the multiple conceptual components delineated by the question and apparently are not very good at producing a single estimate summarizing their financial needs. This does not suggest that the alternative version of the MIQ is more "accurate," since one would be hard-pressed to find a "real value" against which to judge the validity of a subjective appraisal of financial need. It does suggest, however, that the estimates produced by such questions are extremely vulnerable to the nuances of question wording. Extreme care should be taken when designing such questions and using the estimates.

B.   INCOME EVALUATION QUESTIONS (IEQ)

When evaluating the IEQ, we presented the participants with three approaches: (1) the traditional IEQ that was used in the previous wave of testing, (2) a series of four sentences asking for the amount needed to live "currently," "at an acceptable level," "very well," and "very unacceptably," and (3) ranges of dollars based on a simple 4-point range from "very bad" to "very good" (see Appendix B).

Looking at the descriptive statistics, we see that the wording and layout of the question does make a difference. By way of example we see that "Very Bad _____" as used in the traditional version does not produce the same information as the sentence asking "how much take-home pay would you be making each month if you were living at a very unacceptable level?" Likewise, the "Very Bad" dollar amount from the traditional IEQ format produces information different from the "Very Bad" question when placed within a range format. Some of the differences may be seen in the descriptive statistics below.

Table 2: Comparison of the Descriptive Statistics for Three Versions of the IEQ

Version	**Mean**	**Median**	**Mode**	**Minimum**	**Maximum**	**25%**	**50%**	**75%**
Very Good (1)	3712.8	3000.0	2000	600	25000	2000.0	3000.0	4500
Good (1)	2458.0	2050.0	1500	300	10000	1000.0	2050.0	3450
Sufficient (1)	1759.7	1575.0	2000	400	5500	700.0	1575.0	2300
Insufficient (1)	1054.2	850.0	900	175	4000	400.0	850.0	1500
Bad (1)	1198.8	1000.0	1500	200	4500	563.8	1000.0	1500
Very Bad (1)	1020.6	899.5	1000	100	3500	499.3	899.5	1200
Living Very Well (2)	4383.8	4000.0	5000	650	10000	2100.0	4000.0	6000
Acceptable (2)	2593.1	2400.0	4000	300	6000	1275.0	2400.0	4000
As Currently Do (2)	2236.1	2050.0	800	400	6000	1043.8	2050.0	3000
Very Unacceptable (2)	1091.9	875.0	500	250	4500	500.0	875.0	1500
Range: Very Good (3)	3935.5	3416.5	2000	850	10000	2000.0	3416.5	5000
Range: Good (3)	2803.9	2500.0	2000	500	8000	1200.0	2500.0	4000
Range: Bad (3)	1488.7	1500	1500	250	4750	500.0	1500.0	2000
Range: Very Bad (3)	991.6	1000.0	1000	150	4000	400.0	1000.0	1100

The variability becomes somewhat clearer when we consider the correlations between the responses produced by the three different versions. The higher correlations for the "Very Bad"

and "Bad" income amounts seem to indicate that test participants were more consistent with those answers despite format differences in the way they were asked. Perhaps respondents have more clearly defined boundaries on the lower pole of the economic spectrum, below which they do not wish to pass. On the upper end of the scale there is no ceiling and respondents may have difficulty identifying specific dollar amounts that fit the category; they may be more easily swayed by the wording of the question.

Table 3: Correlations Between the Three Versions of the IEQ

	RANGE FORMAT (Version 3)			
	Very Bad	**Bad**	**Good**	**Very Good**
Traditional IEQ (Version 1)				
Very Bad	66.3%			
Bad		67.7%		
Insufficient		74.2%		
Sufficient			57.5%	
Good			47.1%	
Very Good				26.1%
New IEQ (Version 2)				
Very Unacceptable	81.6%			
Acceptable			60.8%	
Living Very Well				37.7%

Reactions to the question formats varied. Roughly 67.5% of our participants had a strong, unequivocal preference for the new revised version using short sentences; 25% had a clear preference for original version. When asked about their preferences, those who liked the new format gave the following reasons:

a.   The use of sentences made the question clearer, more precise, and easier to understand.

b.   The categories of "comfortable and uncomfortable" were more descriptive and better than "good and bad."

c.   The first sentence began with where you are now and then moved from there; this made it more explicit.

d.   These categories and the sentences put them more "at ease" and were easier to understand; it made them feel more "comfortable."

e.   The sentences told respondents exactly what we were looking for and dealt with real things; it seemed less "random."

C.   FACES

Following the lead of Andrews and Withey (1976), faces (see Appendix C) were tested for measuring global feelings of economic well-being (*overall financial situation*; *one's capacity to get ahead financially*) and, in addition, feelings about specific financial concerns (*the costs of shelter*; *food; health care; the capacity to save for the future; one's income*). When used by

Andrews and Withey, the faces formed a seven (7)-point scale ranging from a deep frown to a broad smile. In our test we restricted the scale to five (5) faces.

The majority (72.5%) of our test participants had a strong, positive reaction to the face scale. They reported that the faces were "easy to use," "enjoyable," "cute," "a good idea," and "fun." The remaining eleven (11) participants ranged from those who thought the use of graphics for depicting a scale was too simplistic an approach, but otherwise didn't really have strong feelings about it, to those who were offended by what they perceived as a demeaning childishness.

Overall, the participants were in agreement about how to interpret the faces. They clearly understood that the scale ranged from strong positive to strong negative feelings. While there was variation in the description of the amounts of money that it would take to generate the different feelings, there was no disagreement about the progression of the feelings (positive, neutral, negative) or how to select them to answer test questions. When applied to feelings about income, the faces were generally described in this way:

Face A (strongly positive)   You have an excellent income; you are very satisfied and secure.
Face B (moderately positive)   You are comfortable and fairly satisfied, but you are not rich.
Face C (neutral)   Your financial situation is mixed.
Face D (moderately negative)   Your financial situation is bad, but not unbearable.
Face E (strongly negative)   Your financial situation is bleak and you are very unhappy.

The greatest inconsistency was found, however, when participants were asked which face indicated that one could "make ends meet." Among those who were asked this question, the responses were fairly evenly divided between Faces B (moderately positive), C (neutral), and D (moderately negative).

Participants appeared to be consistent in the way they used the faces to answer questions. There was a moderate correlation between participants' feelings about their capacity to save for the future and their overall financial situation ($r = .30$, $p < .06$). Likewise, participants' feelings about their overall financial situation was significantly correlated with their feelings about their income ($r = .53$, $p < .001$) and with their perceived capacity to get ahead ($r = .43$, $p < .01$). Consequently, it seems that respondents were using the scale in an appropriate and consistent manner.

When Andrews and Withey used the faces scale to measure global quality of life assessments, they found some clustering of responses on the positive end of the scale (p. 209-212). However when applying the scale to financial questions, we did not seem to find this. Our distributions appeared normal in most cases, but showed some clustering around the negative pole when respondents reported their feelings about the cost of health care and their capacity to save for the future. Converting the faces to a range from one (1) to five (5) with three (3) as the midpoint, the means and standard errors were:

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Table 4: Means and Standard Errors for Questions Answered with FACES

How do you feel about…	MEAN	STANDARD ERROR
1. your income?	3.03	.166
2. the cost of shelter?	2.77	.181
3. the cost of food?	3.00	.129
4. the cost of health care?	2.34	.208
5. your capacity to save for the future?	2.83	.202
6. your capacity to get ahead financially?	3.08	.187
7. your overall financial situation?	2.83	.156

In general, this seemed to be a useful approach for measuring respondents' feelings about various aspects of their financial situation. The only difficulties would appear to be in the manner of presentation. First, the drawings of the faces would need to be tested to ensure that they expressed the appropriate emotions. For example, it was indicated by two of our participants that the most negative face on our test seemed to express more anger or hostility than sadness. They suggested that this could be corrected by making the frown more horizontal and less vertical. Second, it would be necessary to explore ways of explaining the choice for such a graphic presentation (e.g., it is useful for all levels of education and language skills), so that more mature, well-educated, sophisticated, or serious respondents would not be offended.

D.   THERMOMETER

The "Feeling Thermometer" is a graphic device printed on a card that looks like a thermometer. It is, in fact, a nine (9) point scale ranging from 0 degrees (*very cold* or *unfavorable* feeling) up to 100 degrees (*very warm* or *favorable* feeling) has been used a number of times in the past by both the Survey Research Center and the Center for Political Studies at the University of Michigan. Andrews and Withey (1976) compared the results of the feeling thermometer with the "Delighted/Terrible" scale and the Faces and found them to be comparable. The one advantage of a graphic like the Thermometer is that it is not dependent upon the labels on the scale points, if a respondent would prefer to use just the graphic representation. However in our work, one of the advantages most frequently cited by respondents who liked using the Thermometer was that we had labeled each of the temperature points. Among respondents who did not like the Thermometer, the most frequent suggestion was that we simply drop the graphic and keep the scale of "favorable" to "unfavorable" feelings.

A slight majority (60 %) of our test participants had a positive reaction to the Thermometer. They reported that the temperature labels were clear and easy to follow, there were a good number of choices to cover the full range of feelings and they had no difficulty selecting an appropriate response. The other forty percent (40%), however, had moderately strong negative reactions. They reported that they were:

- confused by the references to temperature which evoked images of climate temperatures and

- unsatisfied with the mid-point of the scale ("no feeling") which did not seem appropriate.

Most participants appeared to be consistent in the way they used the Thermometer to answer key questions. There was a strong correlation between participants' feelings about their chances to get ahead and their feelings about their financial future (r = .80, p < .000). There was also a moderate association between the feelings about their chances to get ahead and their income (r = .33 , p < .05), their sense of financial security (r = .42, p = .01), their overall financial situation (.42, p = .01) and with their feelings about their investments (r =.34, p < .05). Likewise, participants' feelings about their overall financial situation was significantly correlated with their feelings about their income (r = .87, p < .000), their savings (r = .55, p < .000) and with their feelings of financial security (r = .66, p < .000). Consequently, it seems that respondents were generally using the scale in an appropriate and consistent manner.

However when doing a cross-tabulation with the Faces, some serious inconsistencies emerged. Looking at the responses to the question, "how do you feel about your total family income?" using the Faces scale and the Thermometer, we find:

Table 5: Cross Tabulation between Responses to the Question, "How do you feel about your total family income?"

	Strong Frown (Face E)	Moderate Frown (Face D)	Neutral Face (Face C)	Moderate Smile (Face B)	Strong Smile (Face A)	Total
0 degrees very unfavorable		1				1
20 degrees quite unfavorable	1	1				2
30 degrees fairly unfavorable	1	2				3
40 degrees more unfavorable than favorable	1	1	5			7
50 degrees no feeling at all			3	1	1	5
60 degrees more favorable than unfavorable		1	5	3		9
70 degrees fairly favorable		1		7	1	9
80 degrees quite favorable	1		2	1		4
100 degrees very favorable						
Total	4	7	15	12	2	40

Here we notice:

- Four respondents selected Face E (*strong frown*) to report their feelings about their income. These four respondents each selected a different temperature to express those same feelings: (a) 20 degrees, quite cold, (b) 30 degrees, fairly cold, (c) 40 degrees, more cold than warm, and (d) 80 degrees, quite warm. While it seems likely that the respondent selecting the 80 degrees made a mistake using one of the scales,

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nevertheless, the range of feelings evoked among the other three respondents suggests there is variability in the interpretation and use of the graphic representations.

- Seven respondents selected Face D (*moderate frown*) to report their feelings about their income. Of those seven, five of the subjects seemed to use the Thermometer consistently: (a) 0 degrees, very cold, (b) 20 degrees, quite cold, (c) 30 degrees, fairly cold, and (d) 40 degrees, more cold than warm. However two subjects seemed to be inconsistent in their use of one of the scales by selecting (a) 70 degrees, fairly warm and (b) 80 degrees, quite warm. While one wonders why the respondent who selected the most extreme temperature reading did not also select the most extremely negative face, there is still a consistently negative expression of feeling being made. This is not the case with the two instances of positive feelings expressed with the Thermometer that were associated with the slightly negative Face.

- Two subjects who selected Face C (*neutral expression*) selected 80 "degrees, quite warm," the most favorable Thermometer point endorsed by any respondent.

- Two subjects who selected "50 degrees, no feeling at all" also selected the two most positive faces (Face B, *moderate smile* and Face A, *broad smile*).

These are serious inconsistencies and explain why the scales do not correlate perfectly. There are a number of possible explanations, including: (1) the respondents are not using the two scales in the same way, (b) some respondents mis-interpreted the scales and graphics, or (c) certain response options are easier or more difficult for respondents to endorse comfortably.

Looking at the thermometer as a range from one (1) to nine (9) with five (5) as the midpoint, the means and standard errors were:

Table 6: Means and Standard Errors for Responses Using the Feeling Thermometer

How do you feel about…	MEAN	STANDARD ERROR
1. the cost of shelter?	4.53	.312
2. the cost of food?	4.82	.266
3. the cost of transportation?	4.93	.244
4. the cost of health care?	3.45	.371
5. the cost of clothing?	4.82	.282
6. the cost of utilities?	4.82	.259
7. the cost of recreation?	4.88	.243
8. your total family income?	5.40	.286
9. your savings?	3.84	.361
10.your investments?	3.76	.367
11.your financial security?	4.32	.372
12.your financial situation taken as a whole?	4.95	.320
13.your financial future	6.32	.315
14.your chances of getting ahead financially?	6.54	.340

When Andrews and Withey used the thermometer to measure feelings about "life-as-a-whole," they found respondents more willing to endorse the extreme positive values with the

Thermometer than with other scales (p. 313). Apparently the "very warm" or "very favorable" categories did not seem as intensely perfect as did the extreme options on the other scales. However when applying the Thermometer to financial questions, we did not necessary find this to be so. By collapsing categories, we were able to approximate a 5-point thermometer, the means for which were lower than those obtained by the FACES scale, with the exception of the income question. In general, however, there were strong correlations between the Faces and the Thermometer responses.

Table 7: Comparisons of Answer Collected Using Faces and the Feeling Thermometer

	Means		Correlations (p values)	Correlations (p values)
How do you feel about…	**Faces**	**Thermometer** *(converted to 5-pt scale)*	**Faces and Thermometer** *(5-pt scale)*	**Faces and Thermometer** *(9-pt scale)*
1. your income?	3.03	3.53	.325 (.041)	.521 (.001)
2. the cost of shelter?	2.77	2.60	.68 (.000)	.71 (.000)
3. the cost of food?	3.00	2.83	.55 (.000)	.57 (.000)
4. the cost of health care?	2.34	2.18	.69 (.000)	.70 (.000)
5. your capacity to save for the future?	2.83	2.38	.52 (.001)	.55 (.000)
6. your capacity to get ahead financially?	3.08	3.98	.38 (.015)	.36 (.025)
7. your overall financial situation?	2.83	3.03	.42 (.007)	.48 (.002)

In general, the THERMOMETER seemed to be a somewhat more complicated method of making assessments than using the FACES graphic. Respondents were more divided in their reactions to it.

E.   DELIGHTED/TERRIBLE SCALE

The Delighted/Terrible (DT) Scale is a 7-pt scale with a "mixed" category as the midpoint. In a previous test of this question, we found subjects generally unwilling to endorse either extreme category as an expression of their feelings about their income. In this test, we compared the expression of feeling towards income elicited by the DT scale with that recorded with other scales.

At first glance, there seems to be a fairly high and significant correlation between the responses from the DT scale and those using the Faces ($r = .804$, $p < .000$). Likewise, there was a significant relationship with the responses obtained using the Thermometer ($r = .591$, $p < .000$). There were, however, a number of notable inconsistencies. Looking first at the cross-tabulation of responses for the question "how do you feel about your income" using the Faces and the DT Scale, we find:

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Table 8:   Cross Tabulation between Responses to the Question, "How do you feel about your income?"

	Strong Frown (Face E)	Moderate Frown (Face D)	Neutral Face (Face C)	Moderate Smile (Face B)	Strong Smile (Face A)	Total
Terrible						0
Unhappy	3	2	1			6
Mostly Dissatisfied	1	2				3
Mixed		2	10	2		14
Mostly Satisfied		1	3	6		10
Pleased			1	4		5
Delighted					2	2
Total	4	7	15	12	2	40

While most of these responses appear completely consistent, there are three notable exceptions:

- First, while there were four (4) subjects who selected the face with the extreme frown, indicating the most negative feelings, none of those four (4) selected "terrible" as their response option. Rather, they were spread between the "unhappy" and "mostly dissatisfied" responses.

- Second, the "mostly satisfied" response which falls on the positive side of the neutral center expression, did not consistently correspond with the selection of a positive face. In one instance, the respondent selecting "mostly satisfied" also selected the "moderate frown" as the face expressing feelings about income. In three other cases, the "mostly satisfied" respondents selected the "neutral face" as best expressing the same feeling.

- Third, one test subject who recorded being "pleased" with income also selected the "neutral" face as the expression of feelings about that income.

These few instances of apparently inconsistent response selection produce fairly minor effects upon the overall statistical associations. Nevertheless, they reveal somewhat disturbing differences in how the scales are being used to express feelings. Clearly there is something about the graphic representations or the set of response options that lead some respondents to express the same feeling in divergent ways or actually to convey different feelings. The comparisons of the DT answers with the FEELING THERMOMETER also showed some rather surprising inconsistencies:

Table 9: Cross Tabulation between Responses to the Question, "How do you feel about your income?"

	Terrible	Unhappy	Mostly Dissatisfied	Mixed	Mostly Satisfied	Pleased	Delighted	*Total*
0 degrees very unfavorable		1						*1*
20 degrees quite unfavorable		1	1					*2*
30 degrees fairly unfavorable		1	2					*3*
40 degrees more unfavorable than favorable		2		3	2			*7*
50 degrees no feeling at all				2	2		1	*5*
60 degrees more favorable than unfavorable				7	2			*9*
70 degrees fairly favorable				1	4	3	1	*9*
80 degrees quite favorable		1		1		2		*4*
100 degrees very favorable								
Total	*0*	*6*	*3*	*14*	*10*	*5*	*2*	*40*

- The first thing that should be noted is the clustering of responses upon the "mixed" response in the DT Scale. The same respondents selecting "mixed" chose five different way to answer the same question with the feeling Thermometer: (a) more unfavorable than favorable, (b) no feeling at all, (c) more favorable than unfavorable, (d) fairly favorable, and (e) quite favorable.

- Second, one should notice the absence of the "terrible" option, even though the Thermometer registered one respondent who felt "0 degrees, very unfavorable" about income and another who felt "20 degrees, quite unfavorable."

- Third, the two respondents who did respond that they were "delighted" with their income used the feeling Thermometer to say that they "had no feeling at all" or felt "fairly favorable" about their incomes.

- Fourth, a respondent who reported feeling "unhappy" about income also reported feeling "80 degrees, quite favorable" toward it.

While there was a fairly significant statistical association between the DT Scale and the Faces and the Thermometer, the jarring contradictory responses produced by some respondents leads one to raise two questions:

(1) Are these scales practical, accurate, and reliable tools for assessing the extremely complex feelings that respondents have toward their income?

(2) Are "feelings about income" a simple, meaningful construct that can be measured as a single point estimate or are these feelings extremely complex and complicated, such that a number of expressions of different aspects of those feelings are required to approximate the respondents true position?

F.   CIRCLES

The Circles Scale is a series of seven circles that have each been divided into six segments. At the lowest end of the range, the six segments have all been labeled with minus signs; at the highest end of the range, there are plus signs placed within each segment. In between the two extremes, there is a gradual transition in the balance of plus and minus signs as the scale progresses from completely negative to completely positive. When Andrews and Withey (1976) tested the scale, they found that the scale might still need some improvement. In particular, it was not always clear to respondents how the Circles related to one another or what their essential meaning was. They speculated that the use of color or shading might help clarify the transitions across circles (p. 213).

In using the Circles to ask respondents about their feelings towards their income, expenses, and financial situation, we also found that this scale may be in need of further refinement. Reaction among participants was strongly divided. On the one hand, about eighteen of the participants reported that the scale was easy to understand and use. As one test subject expressed it, "It was similar to the faces, but more concrete. Each plus sign meant one step closer to economic satisfaction." On the other hand, an equal number of eighteen participants reported a strong negative reaction to the Circles, saying it was cumbersome, difficult to decipher, and messy to look at. As two of those not in favor of the scale expressed it, "this looks like a test."

The next question was whether the Circles captured the same information from respondents as did other scales when used to answer the same questions. Two questions, in particular, provided information that could be compared with other scales: "Which circle comes closest to matching how you feel about your total income?" and "Which circle do you think comes closest to matching your current financial situation?"

Looking first at the income question, there is one immediate comparison that may be made. Since both the DT Scale and the Circles are 7-point scales that may be coded from one to seven, we can compare their means and standard errors:

Table 10: Comparison of Means and Standard Errors When Using the Circles and the D/T Scale

	Means	**SE**
Circles	4.0	.202
DT Scale	4.28	.215

Here we see that when answering the same question about their feelings toward their incomes, respondents provided lower responses when using the Circles than when answering with the DT Scale. In fact, the answers to the income question obtained with the two scales produced a

correlation of only .598. Looking at the cross-tabulation of responses, we can see some of the inconsistencies (Table 11):

Table 11: Cross Tabulation between Responses to the Question, "How do you feel about your income?"

	Terrible	Unhappy	Mostly Dissatisfied	Mixed	Mostly Satisfied	Pleased	Delighted
100% neg		1			1		
5/6 neg		1	1				
4/6 neg		3	1	3	1		
3/6 neg 3/6 pos				5	3	1	1
4/6 pos				3	5	2	
5/6 pos			1			2	1
100% pos							
Total	*0*	*5*	*3*	*11*	*10*	*5*	*2*

There are a number of apparent inconsistencies in these response patterns:

- One respondent who selected the lowest circle with only negative signs inside the segments, nevertheless, did not select "terrible" (the lowest point on the DT Scale). Rather, this respondent selected "unhappy" which is not the lowest point on the scale.

- Respondents who selected "mixed" on the DT Scale ranged from two, three, and four pluses on the Circles.

- Two participants who were "mostly satisfied" (above the midpoint) with their incomes selected circles with either only one or two plus signs (below the midpoint).

- One participant who reported feeling "delighted" with income also selected the middle circle, showing an equal number of plus and minus signs.

- Another participant who had reported being "delighted"(the highest point on the DT Scale) did not also select the highest circle, but rather selected the circle with one minus sign in it.

We also saw the same pattern of apparent inconsistency when comparing the responses to the income question with those obtained using Faces (Table 12):

Table 12: Cross Tabulation between Responses to the Question, "How do you feel about your total family income?"

	Strong Frown (Face E)	**Moderate Frown** (Face D)	**Neutral Face** (Face C)	**Moderate Smile** (Face B)	**Strong Smile** (Face A)
100% neg	1				
5/6 neg		2		1	
4/6 neg	1	4	3		
3/6 neg 3/6 pos			7	2	1
4/6 pos		1	1	8	
5/6 pos	1		1	1	1
100% pos					
Total	*3*	*7*	*12*	*12*	*2*

Once again we find some inconsistent response patterns:

- One test subject who selected the most negative face with the strong frown to express feelings about income, also selected the second most positive circle with five plus signs.

- On participant who selected the moderate frown (below the midpoint) also selected the circle with four positive signs (above the midpoint).

- Three respondents who selected the balanced circle with equal numbers of plus and minus signs also selected either the moderate smile or the strong smile.

- Respondents who selected the second most positive circle (5/6 plus signs) also selected (a) the strong frown (most negative face) and (b) the neutral face.

Considering the cross-tabulation of responses with the Thermometer Scale, the same sort of problematic inconsistencies appear once again:

- Someone selecting the totally negative circle (no positive signs) also selected "80 degrees, quite favorable."

- A participant who selected the circle with five of the six segments showing minus signs also selected "50 degrees, no feeling at all."

- One respondent who selected the circle with four of the six segments showing minus signs (below the midpoint) selected the "60 degrees, more favorable than unfavorable."

- Several respondents who selected the balanced circle with equal numbers of plus and minus signs selected positive temperatures: 60 degrees, more favorable than unfavorable; 70 degrees, fairly favorable; 80 degrees, quite favorable.

- One participant who selected the second most positive circle (five out of six plus signs) also selected "30 degrees, fairly unfavorable."

When looking at the assessments of the "current financial situation," the same types of problems surfaced when comparing the responses obtained by Circles, Faces, and the Thermometer.   This lack of consistency in selecting positive, negative, and neutral responses when answering the same question but with different scales is troubling. Since it is unlikely that respondents' feelings about their income or financial situation changed during the course of the interview, we are left with the probability that either (a) several respondents used the scales in idiosyncratic ways, (b) that the scales themselves convey different concepts to the respondents so that their responses appear inconsistent, or (c) some respondents were responding almost randomly.

G.   THE WORRY SCALE

The "Worry Scale" (*1.Never worry, 2.Worry a little, 3.Worry Sometimes, 4.Worry a lot, 5.Worry all the time*) was tested using a series of sixteen items which were expected to evoke varying degrees of concern amongst participants. The items queried respondents' worry about:

- Making ends meet,
- Paying for shelter,
- Paying for food,
- Paying for utilities,
- Paying for recreation,
- Paying for health care,
- Paying off debts,
- Paying for clothing,

- Paying for transportation,
- Paying for insurance,
- Paying for education,
- Getting ahead financially,
- Saving for the future,
- Having a steady income,
- Having income increase with inflation,
- Maintaining current levels of living.

At least three quarters of the participants expressed a positive response to the Worry Scale and questions. They reported that it was easy to understand what the questions were asking and easy to discern and articulate their levels of concern or worry. Only two participants reported that "worry" was an unpleasant topic to consider and they didn't like discussing something so negative and depressing. The majority that the Worry Questions were simple, to-the-point, and apropos – the type of things you might "talk about with your co-workers."

In their discussion of the Worry Scale, respondents provided several interesting insights:

- One participant suggested that the "amount of worry" depended not only upon the frequency with which the problems arose, but also the seriousness or magnitude of the problem.

- Several participants suggested that the "amount of worry" corresponded with the amount of time spent (a) thinking about a problem, (b) seeking a solution, or (c) planning and budgeting.

- One participant pointed out that a respondent might select the response "Never Worry" for one of three reasons. It might be because: (1) you have enough money so a given expense is not a problem, (2) a certain expense may never arise and, therefore, not be applicable, or (3) there may be a problem, but you are unwilling or unable to confront it or try to think about a solution.

- Several participants suggested that it might be better to condense the scale into 4-points. They felt that the categories "Worry a little" and "Worry sometimes" overlapped and expressed the same degree of concern.

One indication that respondents were discriminating and expressing different levels of worry may be found by assigning 1 to 5 points to the escalating amounts of worry and then summing the responses for each item. In order for this comparison to be a valid comparison of concerns, we have omitted the cases with missing data and summed across an equal number of cases for each item. The result may be considered a rank-ordering of the intensity of worry expressed by test subjects. Looking at the rank-ordering in Table 13, it seems to represent a logical progression of concerns, indicating perhaps that subjects were using the scale coherently and consistently.

Table 13: Rank Ordering of Aggregate "Worries"

Rank Ordering of Worries:	N	Sum
Paying off debts	33	106
Getting ahead financially	33	103
Saving for the future	33	103
Making ends meet	33	99
Paying for health care	33	96
Having a steady income	33	95
Maintaining your current level of living	33	86
Paying for education	33	86
Paying for insurance	33	83
Having an income that increases with inflation	33	81
Paying for shelter	33	78
Paying for utilities	33	74
Paying for food	33	69
Paying for transportation	33	65
Paying for recreation	33	65
Paying for clothing	33	63

Another way of considering this same information is to look at the distribution of scores within each item. While the item sums provide us a glimpse into the intensity of the aggregate concern, looking at the percentage of respondents endorsing each response option enables us to see the scope of the worry across participants.

Table 14: Frequencies of Responses Obtain Using the "Worry Scale"

Items of Worry:	% Never worry	% Worry a little	% Worry sometimes	% Worry a lot	% Worry all the time	
Paying off debts	12.8	20.5	25.6	25.6	15.4	100%
Getting ahead financially	20.5	20.5	25.6	12.8	20.5	100%
Saving for the future	10.5	28.9	28.9	13.2	18.4	100%
Making ends meet	12.8	15.4	46.2	23.1	2.6	100%
Paying for health care	28.9	10.5	21.1	26.3	13.2	100%
Having a steady income	23.1	25.6	23.1	15.4	12.8	100%
Maintaining your current level of living	17.9	41.0	23.1	10.3	7.7	100%
Paying for education	37.8	16.2	13.5	16.2	16.2	100%
Paying for insurance	36.1	22.2	16.7	13.9	11.1	100%
Having an income that increases with inflation	30.8	30.8	20.5	15.4	2.6	100%
Paying for shelter	34.2	23.7	26.3	13.2	2.6	100%
Paying for utilities	39.5	15.8	28.9	10.5	5.3	100%
Paying for food	38.5	33.3	25.6	0.0	2.6	100%
Paying for transportation	48.6	24.3	16.2	8.1	2.7	100%
Paying for recreation	42.1	31.6	15.8	10.5	0.0	100%
Paying for clothing	44.7	28.9	26.3	0.0	0.0	100%

By looking at these distributions, we begin to understand the worry that our participants were expressing. For example, we see that:

- The least of the worries, <u>paying for clothing</u>, receives its ranking not only because none of our participants reported any intense worry (i.e., *"Worry a Lot"* or *"Worry All the Time")*, but mainly because almost 45 percent reported never worrying about it at all.

- The fourth highest worry, <u>making ends meet</u>, appears to receive this high placement, not because large numbers (2.6 %) of our participants expressed intense worry (i.e., *"All the Time")*, but rather because this concern was widespread among our subjects with over 87 % expressing at least some worry.

- The second highest worry, <u>getting ahead financially</u>, receives its rank largely because almost 21% of our respondents reported worrying about it *"All the Time."*

Finally, it is necessary to compare the information reported with Worry Scale and the information we gained with other scales to see if it is consistent. In particular, six comparisons may be made between the Worry Scale and the Faces and the Thermometer.

1. How do you feel about making ends meet?

Comparing the information we received from the Faces with that from the Worry Scale, we see a number of consistencies and a few inconsistencies.

Table 15: Cross Tabulation between Responses to the Question, "How do you feel about making ends meet?" and "How much do you worry about making ends meet?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
Strong frown	1		1	1	1
Moderate frown	1		2	3	
Neutral face	1	3	6	5	
Moderate smile	1	3	8		
Strong smile	1		1		

In this case at least, the responses *"never worry"* and *"worry sometimes"* seem to be somewhat independent from the reported feelings about the capacity to make ends meet. That is to say, those with negative, neutral, and positive feelings about their capacity to make ends meet are reporting that they either *"never worry"* or they *"worry sometimes."* This raises the possibility that either there are (a) social norms (e.g., don't worry, things could be worse) or (b) personality traits that alter the amount of worry a person experiences and/or reports. In either case, this would severely limit any conclusions we might wish to draw about respondents' objective financial reality based upon their reported subjective experience.

2. How do you feel about the cost of shelter?

Once again we see the same pattern with the *"Never Worry"* responses; no matter how these respondents report feeling about the cost of food as measured by the Faces, they still report that they never worry about it. Another apparent anomaly includes the respondent who reported strong positive feelings (*strong smile*) about the cost of shelter, but still reported worrying about it *"a little*."

Table 16: Cross Tabulation between Responses to the Question, "How do you feel about the cost of shelter?" and "How much do you worry about the cost of shelter?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
Strong frown	1		1	4	1
Moderate frown	4	2		1	
Neutral face	4	3	6		
Moderate smile	2	2	2		
Strong smile	1	1			

The same pattern may be seen when looking at feelings about the cost of shelter measured by the Thermometer. Again those reporting that they *"Never Worry"* include not only those with positive feelings, but also some with neutral or even strong negative feelings. This seems to further indicate that whether one worries (or reports worry) may be, to some extent, independent of one's actual feelings toward something.

Table 17: Cross Tabulation between Responses to the Question, "How do you feel about the cost of shelter?" and "How much do you worry about the cost of shelter?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
0 degrees Very unfavorable	1			2	
20 degrees Quite unfavorable	1	1		2	
30 degrees Fairly unfavorable			1		
40 degrees More unfavorable than favorable	7	2	5	1	1
50 degrees No feeling at all	1		1		
60 degrees More favorable than unfavorable	2	2	1		
70 degrees Fairly favorable		2	2		
80 degrees Quite favorable		2			
100 degrees Very favorable	1				

3. How do you feel about the cost of food?

The same patterns may be seen when considering the feelings about the cost of food as measured by the Faces and the Thermometer in comparison with the reported amount of worry. Once again those saying that they *"Never Worry"* or only *"Worry a Little"* report feelings that may positive, negative, or neutral. And in this particular case, the cost of food does not appear to be of much concern at all to any of our participants, despite their feelings about it.

Table 18: Cross Tabulation between Responses to the Question, "How do you feel about the cost of food?" and "How much do you worry about the cost of food?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
Strong frown	1				
Moderate frown	1	4	3		1
Neutral face	6	6	5		
Moderate smile	7	3	2		
Strong smile					

This same pattern was captured by the Thermometer. In only one case did a test participant report a great deal of worry. And while no one reported strong positive feelings toward the cost of food, over 70 % of our respondents said they *"Never Worry"* or only *"Worry a*

Little."   Thus once again, we see respondents reporting negative feelings, but indicating no concern.

Table 19: Cross Tabulation between Responses to the Question, "How do you feel about the cost of food?" and "How much do you worry about the cost of food?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
0 degrees Very unfavorable	1	1			
20 degrees Quite unfavorable					1
30 degrees Fairly unfavorable	2	1			
40 degrees More unfavorable than favorable	3	2	6		
50 degrees No feeling at all	2	2	1		
60 degrees More favorable than unfavorable	4	3	1		
70 degrees Fairly favorable	2	3	2		
80 degrees Quite favorable					
100 degrees Very favorable					

4.   How do you feel about your capacity to save for the future?

This particular question revealed some interesting anomalies. Unfortunately at this point, we are unable to determine whether these result from measurement difficulties associated with the scales or are, in fact, true psychological paradoxes. For example, looking at those participants reporting positive affect in regard to their capacity to save for the future (i.e., they selected Face A or Face B), we find that ten (10) of our participants or over 26% still reported some degree of worry. Most strangely, we see that two (2) participants who reported the strongest positive feelings (*Strong Smile)* went on to report that they worry all the time about it. In fact, the majority of these participants (58 %) report that they *"Worry a Little"* or *"Worry Sometimes"* and yet express feelings with the Faces that fall into every affect category. While one may be tempted to blame these results on the difficulties with the Faces Scale, it should be pointed out that similar results appear with the Thermometer. In this case, 61% of our test subjects reported that they *"Worry a Little"* or *"Worry Sometimes"* and yet express feelings that fall into all except the single most positive category.

Table 20: Cross Tabulation between Responses to the Question, "How do you feel about your capacity to save for the future?" and "How much do you worry about your capacity to save for the future?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
Strong frown		1	2	1	3
Moderate frown		2	4	2	1
Neutral face	2	2	3	2	1
Moderate smile	1	5	1		
Strong smile	1	1	1		2

Table 21: Cross Tabulation between Responses to the Question, "How do you feel about your capacity to save for the future?" and "How much do you worry about your capacity to save for the future?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
0 degrees Very unfavorable	1	1	2	1	2
20 degrees Quite unfavorable	1		1	1	1
30 degrees Fairly unfavorable		2	3		2
40 degrees More unfavorable than favorable	1	3	2	2	
50 degrees No feeling at all		1			
60 degrees More favorable than unfavorable		1	2		
70 degrees Fairly favorable		2	1		1
80 degrees Quite favorable	1	1			
100 degrees Very favorable					

5.   How do you feel about your capacity to get ahead financially?

Once again we find the now familiar paradox: (a) almost 21% (n=8) of our participants report that they *"Never Worry"* while reporting a wide range of affect, including negative feelings, with the Face Scale and (b) 33% (n=13) say that they *"Worry a Lot"* or even *"Worry All the Time"* despite reporting the full range of affect, including the strongest positive feelings (*Strong Smile*). Likewise, we find that 32% (n=12) of our test subjects reported that they *"Worry All the Time"* or *"Worry a Lot"* even though eight (8) of those twelve (12) reported favorable feelings with the Thermometer. As suggested before, this replication of the same patterns with both the Face Scale and the Thermometer suggests that the experience of worry about something

(or the likelihood of reporting worry) may be somewhat independent of other feelings toward the target.

Table 22: Cross Tabulation between Responses to the Question, "How do you feel about your capacity to get ahead financially?" and "How much do you worry about getting ahead financially?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
Strong frown			1		2
Moderate frown	1	2	3	2	2
Neutral face	4	1	4	1	2
Moderate smile	1	4	1	1	1
Strong smile	2	1	1	1	1

Table 23: Cross Tabulation between Responses to the Question, "How do you feel about your capacity to get ahead financially?" and "How much do you worry about getting ahead financially?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
0 degrees Very unfavorable					
20 degrees Quite unfavorable			1		2
30 degrees Fairly unfavorable			1		1
40 degrees More unfavorable than favorable	1		1	1	
50 degrees No feeling at all		1	1		
60 degrees More favorable than unfavorable	1	2	2		1
70 degrees Fairly favorable	5			1	2
80 degrees Quite favorable	1	5	3	2	1
100 degrees Very favorable					1

6.   How do you feel about your capacity to maintain your current level of living?

Of all the questions that we were able to compare with the Worry Scale, the strongest associations were found between:

a. *How much do you worry about maintaining your current level of living?*
    Which face comes closest to expressing how your feel about your overall financial situation?
    (r = -.63)

b. *How much do you worry about maintaining your current level of living?*
    Using the Feeling Thermometer, how would you rate your feelings about your financial security?
    (r = -.57)

Here we begin to see the expected patterns with those respondents expressing the more negative feelings toward the phenomenon also reporting the greater amounts of worry. However once again, the most frequently endorsed worry category is *"Worry a Little"* (n = 16) and those respondents selecting that option have responses to the Face Scale and the Thermometer questions that fall in every category (positive, negative, and neutral), with the exception of the most negative category.

Table 24: Cross Tabulation between Responses to the Questions, "How do you feel about your current level of living?" and "How do you feel about your overall financial situation?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
Strong frown			2	1	2
Moderate frown		1	3	2	1
Neutral face	5	10	3	1	
Moderate smile	2	4	1		
Strong smile		1			

Table 25: Cross Tabulation between Responses to the Questions, "How do you feel about your capacity to maintain your current level of living?" and "How do you feel about your financial security?"

	Never worry	Worry a little	Worry sometimes	Worry a lot	Worry all the time
0 degrees Very unfavorable			4	1	2
20 degrees Quite unfavorable		1	3		
30 degrees Fairly unfavorable		2		1	
40 degrees More unfavorable than favorable	1	4		1	1
50 degrees No feeling at all	2	1			
60 degrees More favorable than unfavorable	2	4		1	
70 degrees Fairly favorable	2	2			
80 degrees Quite favorable		1	1		
100 degrees Very favorable					

In summary, the Worry Scale appears to be easy to use and, in many ways, enjoyable to respondents. It is easy to understand and uses categories that have popular appeal. Likewise, our participants seemed to use the scale effectively and made distinctions that provided us with a reasonable list of priority concerns. Nevertheless, when compared with the responses obtained with the Face Scale and the Thermometer, it appears that for some proportion of our test subjects, either the experience of or the willingness to admit to "worry" about a given target may be somewhat independent of reported feelings toward it. As a consequence, the Worry Scale may be useful for providing critical information about aggregate concerns, but it may be of less value in constructing an understanding of the financial situation of individuals. In other words, based on the responses from our participants, it appears that some people will worry continuously, no matter how favorably disposed they are to the particulars of their situation; other people may have strong negative feelings toward something, but will still report a total lack of worry.

H. ECONOMIC ATTITUDES

Of all the question formats we tested, this series of five short-answer questions (dubbed our "economic attitude" questions), was the only section universally approved and applauded by all our respondents. While they occasionally suggested slight alterations (e.g., add a "don't know" response option) or acknowledged that other scales (i.e., the Faces and Thermometer) were more fun and unusual, every one of our test subjects reported that they liked these questions and that they were easy to answer. Repeatedly, we were told by participants that using simple words in short questions and providing five easy response choices was something that they liked working with.

The answers to the economic attitude questions generated by respondents also appeared to be consistent with the information reported with other scales. For instance, there is a significant correlation (r = .60, p = .000) between the responses to the economic attitude question concerning one's current financial situation and feelings about your income as measured by Faces. When looking at the cross tabulations, however, some interesting insights regarding the meaning of the categories appears. In particular, when looking at the respondents who selected the second most positive response to the attitude question (i.e., *The best financial situation you are able to have for now*), we see that one person also expressed the most negative feelings about "making ends meet" (i.e., *Strong frown*). This identical pattern was detected when comparing the same attitude question with respondents' feelings about "your overall financial situation" as measured by the Faces. Once again we found that two respondents who selected the second most positive response (i.e., *The best financial situation you are able to have for now*) also selected the two most negative faces (i.e., *Strong Frown* and *Moderate Frown*). In other words, for these respondents the emphasis has shifted from the opening of the phrase (*the best situation*) to the rest of the sentence *(that you are able to have for now)*, which logically does not require that the situation be, in fact, a good one. Clearly question designers need to recognize the possibility of this dual interpretation and replace the second category with a less ambiguous positive appraisal.

Table 26: Cross Tabulation between Responses to the question, "How do you feel about your current financial situation?" and "How do you feel about your income?"

	Strong Frown (Face E)	Moderate Frown (Face D)	Neutral Face (Face C)	Moderate Smile (Face B)	Strong Smile (Face A)	*Total*
Ideal					1	*1*
Best you are able to have for now	1		2	7		*10*
Good enough		1	4	3	1	*9*
Tolerable	2	3	9	2		*16*
Very unsatisfactory	1	3				*4*
Total	*4*	*7*	*15*	*12*	*2*	*40*

Respondents also seemed to be answering the fourth attitude question (*How much do you worry about money and expenses?*) in a pattern consistent with the previously mentioned series of worry questions. There are statistically significant correlations with the following questions:

Table 27: Correlations Between the Economic Attitude "Worry" Question and Other "Worry" Questions

How much do you worry about…	R	P value
Making ends meet?	.546	.000
Paying for shelter?	.586	.000
Paying for food?	.460	.003
Paying for utilities?	.484	.002
Paying for health care?	.325	.047
Paying off debts?	.600	.000
Paying for insurance?	.367	.028
Getting ahead financially?	.646	.000
Saving for the future?	.550	.000
Having a steady income?	.498	.001
Maintaining your current level of living?	.474	.002

Likewise, when the responses from the entire worry series are summed to created a "total worry score," this index of worry has a correlation of .601 (p =.01) with the fourth attitude question asking "how much do you worry about money and expenses. Thus, while we have seen that "worry" may be a problematic construct in that it can be somewhat independent from objective circumstances for some people, nevertheless, our respondents did appear to use the Worry Scale consistently and logically.

I.   THE LADDER

The Ladder Scale was a graphic representation of a ladder with nine rungs. The only labels were place on the lowest rung (*worst financial situation I could expect to have)* and the highest rung (*best financial situation I could expect to have)*. This scale was then used to assess respondents' financial situations in (1) the best month of the past year, (2) the worst month of the past year, (3) most of the past year, (4) five year ago, and (5) five years in the future.

Our test participants were strongly divided in their reaction to the Ladder Scale. Some participants thought that nine choices were too many; others thought that having nine options provided them with a better opportunity to express their position. Some participants liked having only the extreme poles labeled so they could use the numbers to locate their position on the scale; others said they needed labels for the other rungs on the ladder because they either couldn't locate the midpoint or they did not have a clear understanding of the gradations defining the range from "best financial situation" to "worst financial situation." Likewise, respondents were divided in their reaction to the questions that were evaluated with the Ladder Scale. About half of the respondents liked the questions and thought they were easy because they dealt with their real-life situation at precise points in time. Others thought the questions were difficult because they were asking about the past and the future.

Despite their reactions to the scale or the questions, participants did appear to use the scale appropriately and answer the questions consistently. By looking at the mean responses we see that the respondents gave appropriately lower answers for the "worst month" than for the "best month" and expressed optimism over the future.

Table 28: Means and Standard Errors for Questions Using the Ladder Scale

Where on the ladder would you put…	Mean	Std. Error
Your best month in the past year?	6.00	.25
Your worst month in the past year?	2.92	.18
Most of the past year?	4.72	.26
Your situation five years ago?	5.00	.34
Your situation five years from now?	7.38	.26

In addition, when the responses given for the *best month in the past year* and the *worst month in the past year* were averaged, there was a correlation of .70 (p=.000) with the responses to the question about *most of the past year*. In other words, the answers they provided to the question about *most of last year* appear to be consistently constructed out of their assessments of the *best month in the past year* and the *worst month in the past year*.

Beyond this internal consistency, there is also evidence of some consistency with external sources. Looking at correlations between these questions, we found some patterns very similar to those reported by Andrews and Withey in their April, 1973 study (1976, p. 78):

Table 29: Correlations Between Questions Answered with the Ladder Scale Collected by BLS and Andrews & Withey

Correlations:	Our study	Andrews & Withey
Best month in the past year * Most of the past year	**.71**	**.68**
Five years ago * Most of the past year	**.26**	**.30**
Five years from now * Most of the past year	**.32**	**.48**
Worst month in the past year * Most of the past year	.27	.52

The single greatest difference between the findings reported by Andrews & Withey and our study seems to be that our respondents reported their "worst month" as an exception to the norm of the past year (r = .27), whereas the Michigan study uncovered more of an association between the worst month and the overall rating of the year (r = .52).

In summary, our test participants appear capable of using the Ladder Scale effectively and providing temporal comparisons of their financial situations. However, considering the strong negative reactions to the scale and questions, one is led to question the actual value of this approach.

J.   INCOME BALANCE

The Income Balance was single short-answer question asking respondents to compare the amounts of the income and expenses. There were five response options ranging from *our income is much greater than our expenses* through a balanced middle point (*our income and expenses are about the same)* to *our expenses are much greater than our income.* While the majority of test participants reported that the balance question was easy to understand and answer, there was a small portion reporting that (a) it was difficult to compare monthly income against expenses, including outstanding debts or (b) the question was confusing, causing them to have to re-read it several times before they could answer.

Regardless of respondents' reactions to the question, their answers formed a fairly normal distribution:
(a) income much greater than expenses = 10%,
(b) income somewhat greater than expenses = 22.5%,
(c) income about the same as expenses = 35%,
(d) expenses somewhat greater than income = 17.5%, and
(e) expenses much greater than expenses= 15%.

There was also a statistically significant correlation with assessments obtained by several other scales:

Table 30: Correlations Between Balance Question and Similar Assessments from other Scales

Other scales	R	P value
Faces: your overall financial situation	.56	.000
Circles: your current financial situation	.48	.002
Circles: your total income	.51	.001
Circles: your total expenses	-.45	.004
Worry: making ends meet	.46	.003
Therm: financial situation as a whole	.34	.034
Attitude: worry about money & expenses	.33	.040
Attitude: your financial situation	.32	.042

In summary, this question appeared to be a fairly easy assessment for our subjects and the answers appear consistent with the information we gained from the other scales. As one participant pointed out, this information was more "factual" and less focused upon subjective feelings. In many ways, it seems likely that this or other similar questions would provide more accurate information about respondents' actual financial reality than other questions that focus more upon their feelings resulting from their situation.

K.   POSITIVE / NEGATIVE LINE

The Line was a simple flat line with one end point labeled with a "+" and the other end point labeled with a "-." In-between the poles were three equally spaced vertical marks. Respondents were instructed to place their feelings about their total family income at the appropriate place along the line.

Reaction to the scale was fairly evenly mixed. Respondents who liked the approach said that it was:

      a.   simple,
      b.   fast,
      c.   similar to the familiar 1 to 10 rating, and
      d.   clear because of the 2 very definite end points.

The participants who did not like the approach said that it:

      a.   used an unpleasant positive to negative comparison,
      b.   was unclear as to what each of the points meant,
      c.   needed labels,
      d.   was vague, confusing and unfocused,
      e.   lacked a clear mid-point for expressing neutrality, and
      f.   was difficult because you didn't know whether you were supposed to put your mark on one of the vertical lines or anywhere along the line.

Despite the strong negative reaction to this scale, participants appeared to answer the question in a manner consistent with their answers to other questions. One might argue, however, that because this question was located on the same page as the Balance Question, respondents used the cues about the balance of income and expenses to understand how to answer the Line Question. In fact, when asked to define the points on the scale, several participants used the responses to the Balance Question to define the five points on the Line:

Plus sign (+)   Income is much greater than expenses,
1st point   Income is somewhat greater than expenses,
2nd point   Income and expenses are about the same,
3rd point   Expenses are somewhat greater than income, and
Minus sign (-)   Expenses are much greater than income.

Nevertheless, responses were also significantly correlated with the responses to similar assessments throughout the entire test using other scales.

Table 31: Correlations Between Positive/Negative Line and Similar Assessments from other Scales

Other scales	R	P value
Balance of Income and Expenses	.690	.000
Faces: your income	.475	.002
Circles: your total income	.692	.000
Worry scale: making ends meet	.581	.000
Thermometer: your total family income	.400	.011
Attitude 5: your financial situation	.431	.006

In summary, while the line seems to be equally effective for taping participants' feelings about their incomes, there was a strong negative reaction to the approach. Looking at the correlations, it seems that other scales gather largely the same information, but with less burden to participants. Consequently, other avenues of approach should be considered over this one.

L.   THE PIE

The Pie represented another variation on the Circles and the Balance of Income and Expenses questions. In this exercise, respondents were presented with a circle divided into eight (8) slices (see Appendix L). Respondents were instructed to consider the pie as a representation of their complete financial situation and they were to label each slice as either positive (+), negative (-), or neutral (0). In this way, they were to express their overall financial situation with its balance of good, bad, and neutral elements.

The reaction to this approach was strongly unfavorable. Respondents were unclear about how to proceed with the question. They felt uncomfortable with a graphic representing their "complete financial situation" and expressed the need to identify each particular slice of the pie with specific components of that situation (e.g., their salary, their savings, their food expenses etc.). Given the extraordinary amount of confusion that this approach engendered, it seems unlikely that this type of question could ever be used successfully in a survey setting.

M.   Conclusion

Based on the information provided to us by these test subjects, a number of tentative conclusions may be suggested:

1.   Questions asking our respondents about their feelings toward their income and expenses appear to be susceptible to variations in question wording and format.

2.   While our respondents showed some degree of consistency in how they responded to questions using different formats, the correlations between the same or similar questions answered with different scales was lower than expected and the cross tabulations revealed a number of jarring inconsistencies.

3.   Some of our respondents showed a tendency to express feelings about their income or expenses that contradicted either the (a) objective situation assessed by questions asking about the balance of their income and expenses or (b) amount reported worry associated with their situation.

4.   Our respondents indicated a preference for simple questions using the more traditional survey approach to question wording (e.g., the Economic Attitude Questions, Balance of Income and Expenses, and Worry questions).

References

Andrews, F.M. and Withey, S.B. (1976). *Social Indicators of Well-Being*. New York: Plenum Press.

APPENDIX A

Traditional Minimum Income Question (#1)

"Living where you do now and meeting the expenses that you consider necessary, what would be the smallest income (before any deductions) you and your family would need to make ends meet?"

$ _____

Alternative Version of MIQ (#2)

a. *How much would you need in a month for the cheapest housing that you would live in?* ____

b. *How much would you need in a month for just enough food to maintain your health?* _____

c. *How much would you need in a month to pay for clothes?* _____

d. *How much would you need in a month to pay utilities in the cheapest housing you would live in?* _____

e. *How much would you need each month to pay for "work expenses," such as transportation, uniforms or child care?* _____

APPENDIX B

Income Evaluation Question (Version #1)

"Which after-tax monthly income would you, in your circumstances consider to be:"

very bad?	$ _____
bad?	$ _____
insufficient?	$ _____
sufficient?	$ _____
good?	$ _____
very good?	$ _____

IEQ Version #2

a. *At least how much take-home pay would you need each month to live your life as you currently do? $_____*

b. *At least how much take-home pay would you need each month to live at an acceptable level (i.e., if you were "comfortable")? $_____*

c. *At least how much take-home pay would you need each month to change from living at an "acceptable level" to living VERY well? $_____*

d. *At most how much take-home pay would you be making each month if you were living at a VERY UNACCEPTABLE level (i.e., if you were 'very uncomfortable')? $_____*

IEQ #3:
INCOME RANGES

Here is a scale ranging from $0.00 (NO INCOME) at the bottom up through BAD levels, into GOOD levels and up to the VERY HIGHEST income levels. Please enter a dollar amount in each of the blanks to identify where the different levels of income begin and end.

The VERY HIGHEST income levels

|
|
|

$ _____
(VERY GOOD income)

|
|
|

$_____
(GOOD income)
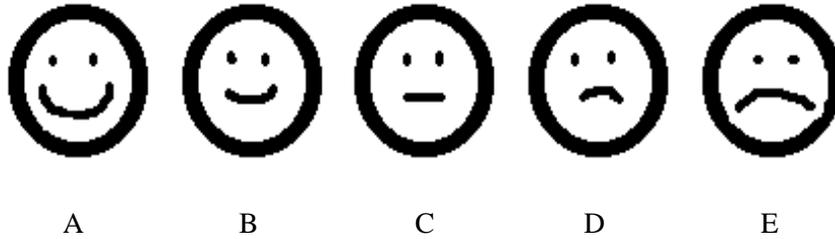

|
|
|

$ _____
(BAD income)

|
|
|

$ _____
(VERY BAD income)

|
|
|

NO INCOME ($ 0.00)

FACES

Here are some faces expressing various feelings. Below each is a letter.

A　　　　B　　　　C　　　　D　　　　E

1. Which face comes closest to expressing how you feel about your income? _____

2. Which face comes closest to expressing how you feel about the cost of housing?   _____

3. Which face comes closest to expressing how you feel about the cost of food?   _____

4. Which face comes closest to expressing how you feel about the cost of health care? _____
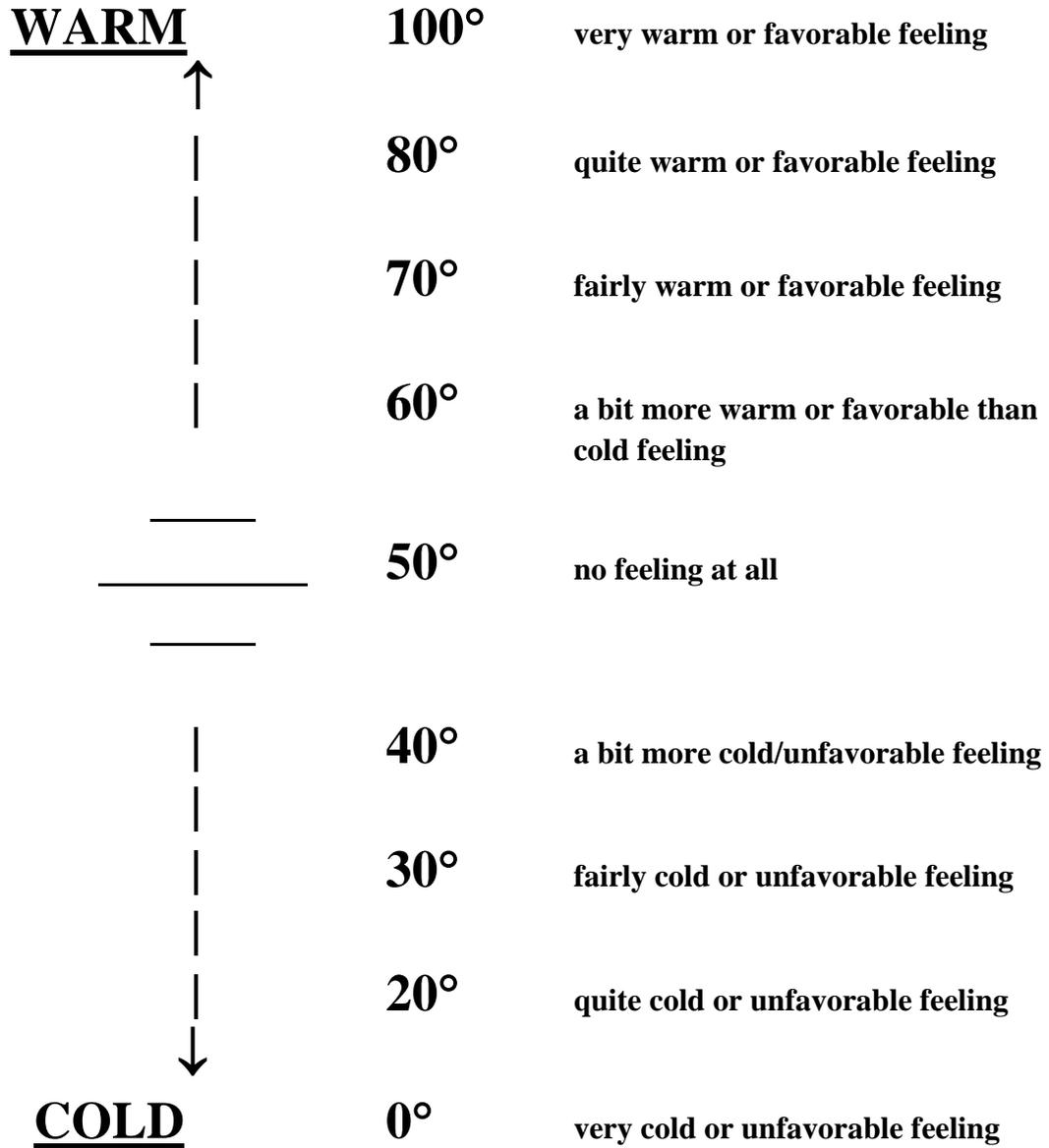
5. Which face comes closest to expressing how you feel about saving for the future? _____

6. Which face comes closest to expressing how you feel about getting ahead financially? _____

7. Which face comes closest to expressing how you feel about your overall financial situation? _____

FEELING THERMOMETER

WARM	**100°**	very warm or favorable feeling
↑	**80°**	quite warm or favorable feeling
	70°	fairly warm or favorable feeling
	60°	a bit more warm or favorable than cold feeling
	50°	no feeling at all
	40°	a bit more cold/unfavorable feeling
	30°	fairly cold or unfavorable feeling
↓	**20°**	quite cold or unfavorable feeling
COLD	**0°**	very cold or unfavorable feeling

FEELING THERMOMETER

Using the "Feeling Thermometer", how would you rate your feelings about…

1. the cost of housing?   _____

2. the cost of food?   _____

3. the cost of transportation?   _____

4. the cost of health care?   _____

5. the cost of clothing?   _____

6. the cost of electricity, water,
    and other utilities?   _____

7. the cost of recreation?   _____

8. your total (family) income? _____

9. your savings?   _____

10. your investments?   _____

11. your financial security?   _____

12. your financial situation,
    taken as a whole?   _____

13. your financial future?   _____

14. your chances of getting
    ahead financially?   _____

APPENDIX E

Delighted Terrible Scale

"Which of the following categories best describes how you feel about your family income (or your own income if you are not living with relatives)?

Do you feel delighted, pleased, mostly satisfied, mixed, mostly dissatisfied, unhappy, or terrible?"

Circles Scale

Here are some circles that we can imagine represent the economic circumstances of different people. Circle 0 has all minuses in it, to represent a person whose financial situation is all bad. Circle 6 has all plus signs, to represent a person whose financial situation is all good. Other circles are in between. Write one number on the line to the left of each question.
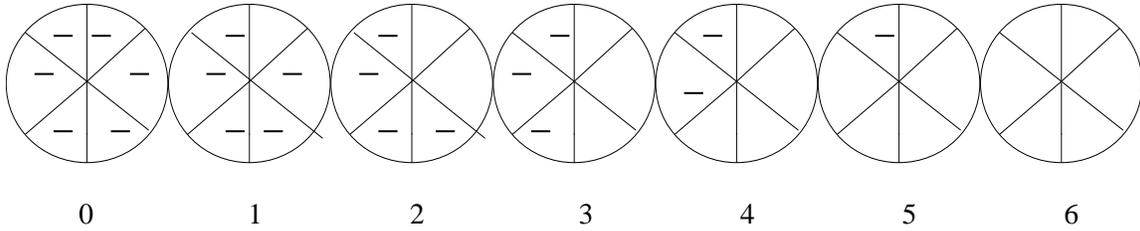

```
   0        1        2        3        4        5        6
```

____	Which circle do you think comes closest to matching your current financial situation?

____	Which circle do you think would be chosen most often by people in this country to describe their current financial situation?

____	Which circle comes closest to matching how you feel about your total income?

____	Which circle comes closest to matching how you feel about your total expenses?

____	Which circle comes closest to matching how you feel about the overall economy of the country?

____	Which circle comes closest to matching how you feel about your level of living—the things you have like shelter, furniture, recreation, and the like?

WORRY SCALE

Listed below are a number of things that might be a source of concern or worry for someone. For each item, please indicate whether you <u>never worry,</u> <u>worry a little,</u> <u>worry sometimes,</u> <u>worry a lot,</u> or <u>worry all the time</u> about it. *(Check one response for each item.)*

Worry about…	Never worry	Worry A little	Worry Sometimes	Worry a lot	Worry all the time
1. Making ends meet					
2. Paying for housing					
3. Paying for food					
4. Paying for utilities					
5. Paying for recreation					
6. Paying for health care					
7. Paying off debts					
8. Paying for clothing					
9. Paying for transportation					
10. Paying for insurance					
11. Paying for education					
12. Getting ahead financially					
13. Saving for the future					
14. Having a steady income					
15. Having an income that increases with inflation					
16. Maintaining your current standard of living					

Economic Attitudes

1. We are interested in how people are getting along financially these days. Would you say that you (and your family) are <u>better off now</u> , <u>about the same</u> , or <u>worse off now</u> financially than you were a year ago? **(Check one response.)**

   ① Much better now
   ② A little better now
   ③ About the same
   ④ A little worse now
   ⑤ Much worse now

2. Now thinking back 5 years, would you say that you (and your family) are <u>better off now</u> , <u>about the same</u> , or <u>worse off now</u> financially than you were 5 years ago? **(Check one response.)**

   ① Much better now
   ② A little better now
   ③ About the same
   ④ A little worse now
   ⑤ Much worse now

3. Now looking ahead—do you think that a year from now you (and your family) will be <u>better off</u> , <u>about the same</u> , or <u>worse off</u> financially than you are now? **(Check one response.)**

   ① Much better in a year
   ② A little better in a year
   ③ About the same
   ④ A little worse in a year
   ⑤ Much worse in a year

4. Many people worry about money and expenses. Would you say that you <u>never worry</u>, <u>worry a little</u>, <u>worry sometimes</u>, <u>worry a lot</u>, or <u>worry all the time</u> about money and expenses? **(Check one response.)**

   ① Never worry
   ② Worry a little
   ③ Worry sometimes
   ④ Worry a lot
   ⑤ Worry all the time

5. For this point in your life, do you think of your financial situation as:

   ① An ideal financial situation for you
   ② The best financial situation you are able to have for now
   ③ A good enough financial situation
   ④ A tolerable financial situation
   ⑤ A very <u>un</u>satisfactory financial situation

LADDER SCALE

Here is a picture of a ladder. At the bottom of the ladder is the worst financial situation you might reasonably expect to have. At the top is the best financial situation you might expect to have. Of course, life from month to month falls somewhere in between…

```
|     |
|_____|     9     Best financial situation I could expect to have
|     |
|     |
|_____|     8
|     |
|     |
|_____|     7
|     |
|     |
|_____|     6
|     |
|     |
|_____|     5
|     |
|     |
|_____|     4
|     |
|     |
|_____|     3
|     |
|     |
|_____|     2
|     |
|     |
|_____|     1     Worst financial situation I could expect to have
|     |
|     |
```
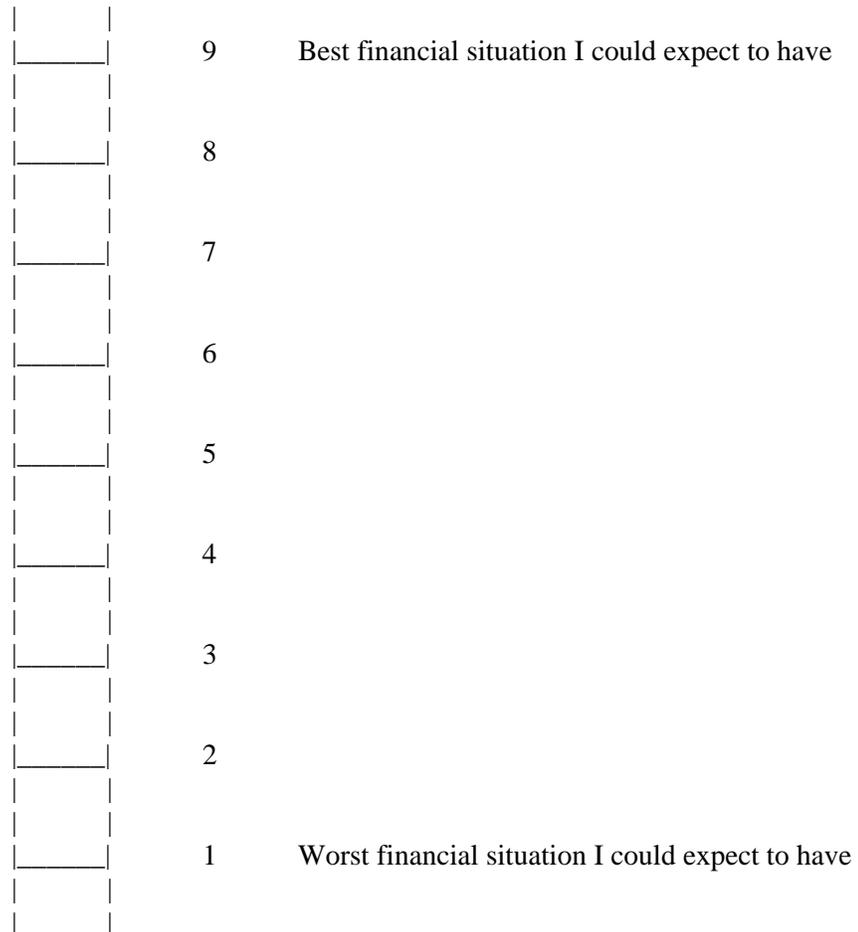
1. Where on the ladder would you say was your best month in the past year – on which rung of the ladder would you put it?

2. Where on the ladder would you say was your worst month in the past year – on which rung of the ladder would you put it?

3. Where was your financial situation most of the time during the past year?

4. Where was your financial situation five years ago (summer of 1992)?

5. Where do you expect your financial situation to be five years from now?

APPENDIX J

BALANCE OF INCOME AND EXPENSES

1. When you think about your income and expenses would you say that your <u>income is greater than your expenses</u>, <u>your income and expenses are about the same</u>, or that <u>your expenses are greater than your income</u>? **(CHECK ONE RESPONSE.)**

       ①   Our INCOME is much greater than expenses

       ②   Our INCOME is somewhat greater than expenses

       ③   Our INCOME and EXPENSES are about the same

       ④   Our EXPENSES are somewhat greater than our income

       ⑤   Our EXPENSES are much greater than our income

THE POSITIVE & NEGATIVE LINE

Below is a line that goes from a negative point (-) to a positive point (+). Where on that line would you place your feelings about your total family income?

(-)_____|_____|_____|_____(+)

The Pie

Here is a circle (like a pie) and we can imagine that it represents the balance between your income and expenses that makes up your complete financial situation. The pie slices are parts of your financial situation – including your <u>total family income</u>, <u>your total family expenses</u>, <u>your savings</u>, <u>your debt</u> and all other aspects. There are 8 slices, so let's imagine that you can divide your financial situation up into 8 parts.

1. **Now put a plus sign (+) in those slices that are <u>good</u> parts of your financial situation.**

2. **Put a zero (0) in those slices that are <u>neutral</u> parts of your financial situation – neither good or bad.**

3. **And last, put a minus sign (-) in those slices that are <u>bad</u> parts of your financial situation.**

PUT SOME MARK IN EVERY SLICE.