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Framing Effect and the Relationship between Feelings, Economic Expectations and Risk Perceptions

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Abstract:
This study examines the impact of the framing effect on the relationships between natural feelings and economic expectations and between natural feelings and risk perceptions. Respondents estimated their levels of negative and positive feelings, their expectations for improvement in their economic status in the future and their personal risk perceptions with respect to various events. Two versions of the questionnaire (positive and negative) were administered to two groups of participants. The results suggest that risk perceptions were more optimistic on the negative version than on the positive version of the questionnaire. Yet, items regarding economic expectations were more optimistic on the positive version. The results also show that higher levels of negative feelings correlate with pessimistic economic expectations and pessimistic risk perceptions on the negative version of the questionnaire but not on the positive version. We conclude that the relationships between natural feelings and economic expectations and between natural feelings and risk perceptions depend on how the risky items and the economic expectations items are framed.

Keywords: *Framing effect, feelings, economic expectations, risk perception*

1. Introduction

The current study examines the impact of the framing effect on the relationships between natural and "routine" feelings and economic expectations and between these feelings and risk perceptions.

Framing theory is based upon the assumption that an issue can be understood from "a variety of perspectives, and be construed as having implications for multiple values or considerations" (Chong and Druckman 2007, p. 104). Framing studies employ either equivalency or emphasis frames (Druckman 2001, 2004). Equivalency effects occur when "different, but logically equivalent, phrases cause individuals to alter their preferences" (Tversky and Kahneman 1987). This typically involves "casting the same information in either a positive or negative light" (Druckman 2004, p. 671).

One of the factors affecting an individual's risk estimations is the way in which a particular issue or event is framed. Various studies have shown that the way risky events are presented to people affects their risk perceptions and judgments (e.g., Peters et al. 2011; Johannesson and Johansson 1997; Payne et al. 2013; Gabriel and Williamson 2010; Bui, Krieger and Blumenthal-Barby 2015). One explanation for the effect of framing on risky events is that the way risky events are presented to people may evoke affective reactions, which in turn may influence their risk perceptions. Affective reactions reflect the perceived goodness or badness of a stimulus. Several studies have examined the impact of negative affective reactions on risk perceptions. Negative affective reactions are theorized to reduce the perceived likelihood of negative events because people can realize their motivation to avoid the event by judging it as unlikely to occur (Lench 2009; Lench and Bench 2012). Lench and Darbor (2014) examined the influence of negative affective reactions on the perceived likelihood that a health risk will occur. They used negative stimuli with concepts related to formaldehyde exposure to generate affective reactions. Their results indicate that perceived risk was reduced when the thought of formaldehyde exposure elicited negative affective reactions compared to a control condition. In a second experiment, the authors elicited the negative feeling of a sad or a neutral experience, which was again paired with negative stimuli or no stimuli. This experiment found that negative affective reactions reduced perceived risk only when participants were in a neutral incidental state, that is, when they lacked alternative emotional information.

In the last two decades, several studies have examined the effect of negative emotions on risk perceptions (Lerner et al. 2003; Vastfjall et al. 2008; Shahrabani et al. 2009; Rosenboim et al. 2012; Shahrabani et al. 2012; Benzion et al. 2012). According to the valence approach, people tend to make optimistic judgments when they are in good moods and tend to make pessimistic judgments when they are in bad moods they (for reviews, see Han et al. 2007, Keltner and Lerner 2010). The seminal work by Johnson and Tversky (1983) in the area of affect and risk perception showed that according to the valence approach, participants who read negative stories (induced negative mood) offered pessimistic estimates of fatalities (e.g., heart disease) in comparison to participants who read positive

stories (induced positive mood). These results indicate that moods stemming from knowledge about specific negative events bias individuals' estimates of other types of risks.

The findings of a field study by Shavit et al. (2013) show that people who were fearful because of a forest fire in their region had higher perceived self-risk not only with respect to fire but also regarding other risks unrelated to fire (e.g., the risk of being injured in a car accident). Moreover, Benzion et al. (2012) found that the higher level of negative emotions evoked by a fire disaster correlated significantly with lower expectations for improvement in the participants' own economic situation.

Yet most previous studies examined the relationship between risk perceptions and manipulated emotions or referred to emotions evoked by a major event (e.g., war or natural disaster). In the current study we examine *natural* and "routine" feelings rather than feelings evoked by major events and consider how these natural feelings are related to risk perceptions under different framing of events.

In addition, the current study adds to the existing literature in the following ways: a) It examines the impact of the framing effect on individuals' economic expectations and risk perceptions, b) It examines whether and how the framing effect has an impact on how different types of natural feelings (negative and positive feelings) are related to risk perceptions and economic expectations.

The results of the study are important for achieving a deeper understanding of the factors that shape people's economic expectations and risk perceptions, which in turn may affect their decision-making processes.

2. Hypotheses

In the current study, we asked respondents to estimate the extent of their personal risk of being involved in terrorism or violent crime and of being in a car accident in the next twelve months. Similarly, we asked them to assess their economic expectations regarding their own situation (the chances of making money and finding a successful job) in the next ten years.

The risks were presented to two separate groups of respondents in two versions. One was a negative version (e.g., "I will probably be injured in a terror attack in the coming year" and "I probably will not make a lot of money during the next ten years"). The other was a positive version (e.g., "I probably will not be injured in a terror attack in the coming year" and "I will probably make a lot of money during the next ten years"). In addition, respondents were asked to assess their levels of various feelings (nervous, worried, enthusiastic, irritable, decisive, anxious, afraid, comfortable) during the past week.

2.1. Framing, Economic Expectations and Risk Perceptions

Previous studies showed that different communication formats result in different risk perceptions (Keller and Siegrist 2009; Lench and Darbor 2014). In the current study, we use positive and negative versions of economic expectation items. We expect that the economic expectation items in the positive version (e.g., "I will probably make a lot of money during the next ten years") will evoke positive affective reactions as they may be related to the individual's wishful thinking and therefore will be higher than the economic expectations in the negative version (e.g., "I will probably not make a lot of money during the next ten years"). Therefore:

- *Hypothesis 1a:* Self-economic status expectations will be higher on the positive version of the economic expectations questionnaire than on the negative version.

In addition, we also examine the effect of framing on risk perceptions. Lench and Darbor (2014) indicated that perceived risk was reduced when negative affective reactions were elicited, compared to a control condition. Yet, the authors used negative stimuli to create the affective reactions. In the current study, we do not use direct negative stimuli. Instead, we expect that the negative version of the questionnaire (e.g., "I will probably be injured in a terror attack in the coming year") will evoke negative affective reactions, which in turn will reduce perceived risk in comparison to the positive version of the questionnaire. Therefore:

- *Hypothesis 1b*: Self-risk estimations will be lower on the negative version of the risk questionnaire than on the positive version.

2.2. The Impact of Framing on the Relationship between Feelings, Risk Perceptions and Economic Expectations in the Negative Version

According to valence theory, people in good moods tend to make optimistic judgments, and people in bad moods tend to make pessimistic judgments (for review, see Han et al. 2007). However, according to the Appraisal-Tendency Framework, affective states of the same valence may have differential influences on judgments and decision processes (Lerner and Keltner 2001; Lerner et al. 2015). Yet, in these studies risk perceptions were negatively phrased (e.g., the likelihood of being a victim of a violent crime in the coming year). In addition, negative emotions were evoked by major events (such as the events of September 11, 2001) or via manipulation. In the current study, we use both negative and positive versions of a questionnaire as well as naturally reported feelings. We do not have any solid hypotheses regarding whether natural feelings of the same valence will have similar or differential influences on economic expectations and risk perceptions. Therefore we examine this issue in the study.

The average age of the sample is 24.15 years old. The sample includes 51% men and 49% women. Sixty-four percent of the respondents are non-religious while 36% are religious. The parents of 75% of the respondents have an average income and above, while the parents of 25% of the sample have a below average income. In addition, 47% of the respondents completed up to 12 years of education, while 53% completed more than 12 years of education.

The two versions of the questionnaire (positive and negative) were randomly distributed among the respondents. Examination of the data in both versions (positive and negative) shows that there are no significant differences between the proportions of men and women in the positive and negative groups. In addition, no significant differences were found between the two groups with respect to parents' average income and degree of religious observance. The average age of those who took the negative version is slightly lower than for the positive version (23.556 versus 25.024, respectively).

3. Methodology

3.1. Sample

Our sample contains 511 respondents. Table 1 describes the sample characteristics.

	Category	Observations	%
Gender	Male	261	51%
	Female	250	49%
Religious Status	Non-religious	328	64%
	Religious	183	36%
Parents' Income	Average and above	381	75%
	Below average	130	25%
Education (in years)	Up to 12	242	47%
	Above 12	269	53%

Table 1: Sample Characteristics

3.2. Procedure

The study was approved by the college's ethics committee and was conducted in 2014. Research assistants randomly distributed the questionnaire survey in train stations and central bus stations in various places in Israel to participants waiting for the train/bus and collected it after about 15 minutes. We chose public transportation since it is the main transportation means and reflects a random sample of Israelis from various sectors. Respondents were informed that the questionnaire was anonymous and that they could choose not to complete it.

3.3. The Questionnaire

The research tool is a self-administered anonymous questionnaire (see Appendix A) that includes the following parts:

a. *Risk perception*: This measurement was based on the risky events self-questionnaire (Lerner et al. 2003 and the Hebrew version in Shahrabani et al. 2012). The respondents were asked to estimate the likelihood they would experience (or not experience) each of four risky events within the next 12 months. The possible answers varied from 1 to 7, where 1 was "not at all" and 7 was "certainly." The risk perceptions were posited to different groups in negative or positive versions. The items in the negative version were: "I probably will get hurt in a terror attack in the coming year"; "I probably will be a victim of a violent crime"; "I probably will get hurt in a car accident." In the positive version, the same sentences were repeated with the words "will not" instead of "will" (e.g., "I probably will not get hurt in a car accident"). The mean risk perception was calculated as the mean of respondents' answers to the four risky statements with respect to the next year in both the positive and the negative versions. The items in the negative version were reversed. We analyzed each of the risk perceptions separately and also as a risk perception index, calculated as the average of the three items. Alpha Cronbach for that index was 0.9.

b. *Economic expectations*: The respondents were asked to estimate the likelihood that they would experience (or not experience) each of two events within the next ten years. The possible answers varied from 1 to 7, where 1 was "not at all" and 7 was "certainly." The economic expectations were posited to the different groups in negative or positive versions. The items in the positive version were: "I will probably find a good job for myself"; "I will probably make a lot of money." In the negative version the items were: "I will probably find a disappointing job"; "I probably will not make a lot of money." The mean economic expectations were calculated as the mean of the respondents' answers to the two economic expectations with respect to the next 10 years both in the positive and in the negative versions. The items in the negative version were reversed. We analyze each of the economic expectations separately and also as an economic expectation index calculated as the average of the two items. Alpha Cronbach for that index was 0.74.

c. *Feelings:* Levels of feelings were measured based on the PANAS scales questionnaire (Watson et al. 1988) and included: nervous, worried, enthusiastic, irritable, decisive, anxious, afraid, comfortable. On a scale from 1 to 7 respondents were asked to rank their level of each of these feelings during the last week. Answers ranged from 1 (did not feel at all) to 7 (felt very much). We analyzed each of the feelings separately and also examined a positive feelings index and a negative feelings index. The negative feelings index was calculated as the average of the levels of nervous, worried, irritable, anxious and afraid feelings. The positive feelings index was calculated as the average of the levels of enthusiastic, decisive and comfortable feelings.

d. *Personal details* included demographic and socio-economic details. We asked the respondents about their age, gender, education, extent of their religious observance and their parents' income.[1]

[1]The questionnaire included a partial Evaluation of Risks (EVAR) Questionnaire (see Killgore et al. 2006). However, we did not use this part in the analysis.

3.4. Data Analysis

Using t-tests and correlations, we estimated the factors that correlate with individuals' risk perceptions and economic expectations. The risk perceptions variable was defined as the mean of respondents' answers to the three risky statements with respect to the coming year in both the positive and the negative versions (the items in the negative version were reversed): "I probably will be injured in a terror attack"; "I probably will be a victim of a violent crime"; "I probably will get hurt in a car accident." The economic expectations variable was defined as the average of the respondents' answers to the economic expectations statements ("I will probably find a good job"; "I will probably make a lot of money") with respect to the next ten years in both the positive and the negative versions. The items in the negative version were reversed.

The variable denoted as Positive_Negative indicates the type of questionnaire version. This variable is defined as 0 for the negative version of the risk perception and economic expectations questions and 1 for the positive version. The variable denoted as Positive_Feelings reflects the average of the respondents' level of the following positive feelings: enthusiastic, decisive and comfortable. The variable denoted as Negative_Feelings reflects the average of the respondents' level of the following negative feelings: worried, irritable, anxious, afraid and nervous. The socio-demographic variables included age, gender (1 for male, 2 for female), education (1 for up to 12 years of education and 2 for more than 12 years), religious status (1 for non-religious respondents and 2 for religious respondents) and parents' income (1 for income equal to or above the average income and 2 for below average income).

We used SAS to conduct a statistical analysis of the data. Kendall correlations were used to examine the relation between risk perceptions and positive/negative feelings. In addition, we conducted a t-test to examine differences between the positive and negative versions.

4. Results

4.1. Framing Effect, Economic Expectations, Risk Perceptions and Feelings

Table 2 shows the comparative results of the means and standard deviations for economic expectations, risk perceptions and feelings (both negative and positive) by type of questionnaire version (positive versus negative). Table 2 also indicates the results of the t-tests examining the differences between the mean values.

With respect to economic expectations, the results in Table 2 show that individuals who took the positive version evaluated their chances of finding a successful job significantly more optimistically than did those who took the negative version (5.962 versus 5.650, $p<0.05$, respectively). This result is consistent with Hypothesis 1b. However, no significant differences between the positive and negative versions were found for the mean level of the economic expectations index or for the statement: "I will probably make a lot of money (during the next ten years)."

The results in Table 2 also indicate significant differences between the positive and negative versions with respect to mean risk perceptions. The comparison results suggest that in the negative version the respondents were significantly more optimistic than in the positive version of the questionnaire (5.574 versus 4.620, respectively, p value<0.01). Moreover, for each of the three components of risk perceptions, individuals were more optimistic in the negative version than in the positive version.[2] This is consistent with Hypothesis 1a with respect to the framing effect (self-risk estimations will be lower on the negative version of the risk questionnaire than on the positive version).

The results in Table 2 also show the levels of feelings by version. For the negative feelings level as well as for the positive feelings level, we found no significant differences between the positive and the negative versions of the questionnaire.

[2] Higher number indicates more optimistic expectations.

	Negative version		Positive version	
	Mean	**(S.D.)**	**Mean**	**(S.D.)**
Economic expectations index	5.507	(1.247)	5.671	(0.930)
The chance of finding a successful job	5.650*	(1.308)	5.962	(0.977)
The chance of making money	5.363	(1.465)	5.380	(1.140)
Risk perception index	5.574*	(1.300)	4.620	(1.622)
Self-risk of terror attack	5.620*	(1.453)	4.721	(1.758)
Self-risk of violent crime	5.772*	(1.380)	4.779	(1.831)
Self-risk of car accident	5.330*	(1.560)	4.361	(1.697)
Positive feeling index	4.500	(1.164)	4.484	(1.187)
Enthusiastic	4.156	(1.597)	4.077	(1.730)
Decisive	4.746	(1.635)	4.836	(1.530)
Comfortable	4.594	(1.515)	4.538	(1.572)
Negative feeling index	3.881	(1.519)	3.922	(1.443)
Nervous	4.353	(1.814)	4.389	(1.777)
Worried	4.103	(1.851)	4.284	(1.750)
Irritable	3.934	(1.747)	3.870	(1.644)
Anxious	4.172	(1.758)	4.202	(1.685)
Afraid	2.851	(1.888)	2.855	(1.866)

Table 2: Mean and S.D. of risk perceptions, economic expectations, positive feelings and negative feelings by type of version
**Statistically different from the positive version at 1% significance level*
Risk perceptions and economic expectations: The scale varied from 1 (not at all) to 7 (certainly) in both versions, since the negative answers were reversed. Higher numbers indicate more optimistic expectations.
Feelings: The scale varied from 1 (did not feel at all) to 7 (felt very much).

4.2. Correlations

Table 3 shows the results of the Kendall correlations between feeling levels, economic expectations and risk perceptions by questionnaire version (positive or negative)**.**

Appendix B shows the correlations between risk perceptions, economic expectations, positive and negative feelings and other socio-demographic variables (age, gender, and education), while Appendix C shows the correlations between positive and negative feelings and the positive and negative versions. In addition, Appendix D shows the correlations between the positive and negative feelings indices and risk perceptions and economic expectations.

4.2.1. Correlations between Negative Feelings, Economic Expectation and Risk Perceptions by Version

The results in Table 3 – Panel A with respect to negative feelings (felt during the last week) show that on the *negative version* of the questionnaire, higher levels of negative feelings during the last week were significantly correlated to lower expectations for improvement in self-economic status and more pessimistic perceptions of self-risk.

These results also hold for each of the negative feelings separately. Higher levels of being nervous, worried, irritable, anxious and afraid are correlated with more pessimistic self-perceived risk with respect to chances of being involved in a violent crime or a car accident and with the risk perception index, as well as with more pessimistic expectations for improvement on each of the self-economic status items and with their index. Higher levels of being nervous and afraid are also correlated with more pessimistic self-perceived risk with respect to the chance of being injured in a terror attack. Yet, no significant correlation was found between levels of being irritable, worried and anxious and the perceived risk of being injured in a terror attack.

The results in Table 3 – Panel A for the *positive version* of the questionnaire indicate no significant correlation between the negative feelings index, risk perceptions and economic expectations. These results also hold for each of the negative feelings separately, except for higher levels of being "afraid," which correlated with lower expectations of finding a successful job in the next ten years.

4.2.2. Correlations between Positive Feelings, Economic Expectation and Risk Perceptions by Version

The results in Table 3 – Panel B with respect to positive feelings show that for both versions of the questionnaire no significant correlations were found between positive feelings and risk perceptions. Two exceptions were found: a) On the negative version, respondents who felt more comfortable perceived a lower risk of being involved in violent crime, and b) on the positive version, respondents who felt more enthusiastic perceived a lower risk of being involved in a car accident.

The results in Table 3b also show significant positive correlations between positive feelings and the economic expectation index for the positive version of the questionnaire but not for the negative version. More specifically, on the positive version those with higher levels of each of the positive feelings perceived greater chances of finding a successful job in the next ten years. In addition, on the negative version feeling more comfortable also correlated positively with higher perceived chances of finding a successful job. Moreover, feeling more comfortable on the positive and the negative versions also correlated with perceived higher chances of making money in the next ten years.

Panel A – Negative feelings												
	Negative feeling index		**Nervous**		**Worried**		**Irritable**		**Anxious**		**Afraid**	
Negative/Positive version	**Neg.**	**Pos.**	**Neg.**	**Pos.**	**Neg.**	**Pos.**	**Neg.**	**Pos.**	**Neg.**	**Pos.**	**Neg.**	**Pos.**
Economic expectations index	-0.186*	-0.05	-0.168*	-0.058	-0.155*	0.034	-0.146*	-0.030	-0.155*	-0.033	-0.189*	-0.132**
Successful job	-0.185*	-0.063	-0.155*	-0.063	-0.156*	0.008	-0.1389*	-0.025	-0.141*	-0.044	-0.223*	-0.142**
Make money	-0.168*	-0.038	-0.159*	-0.038	-0.134*	0.04	-0.14*	-0.036	-0.150*	-0.025	-0.154*	-0.106
Risk perception index	-0.147*	-0.008	-0.097**	0.054	-0.12*	-0.01	-0.098**	-0.072	-0.128*	-0.011	-0.179*	-0.054
Self- risk Terror attack	-0.113*	-0.011	-0.061	0.048	-0.086	-0.022	-0.083	-0.059	-0.094**	-0.008	-0.139*	-0.060
Self- risk Violent crime	-0.165*	-0.014	-0.115**	0.048	-0.122*	-0.019	-0.116**	-0.065	-0.158*	-0.010	-0.204*	-0.056
Self- risk Car accident	-0.146*	0.002	-0.098**	0.050	-0.129*	0.031	-0.098**	-0.06	-0.114**	-0.00006	-0.175*	-0.051

Panel B – Positive feelings								
	Positive feeling index		**Enthusiastic**		**Decisive**		**Comfortable**	
Negative/Positive version	**Negative**	**Positive**	**Negative**	**Positive**	**Negative**	**Positive**	**Negative**	**Positive**
Economic expectations index	0.053	0.109**	-0.002	0.076	0.043	0.090	0.105**	0.131**
Successful job	0.063	0.157*	0.011	0.116**	0.058	0.151*	0.095**	0.126**
Make money	0.036	0.056	-0.013	0.037	0.023	0.027	0.101**	0.122**
Risk perception index	-0.012	0.047	-0.060	0.064	0.001	0.034	0.073	-0.002
Self- risk terror attack	-0.034	0.032	-0.072	0.044	-0.002	0.043	0.035	-0.029
Self- risk violent crime	0.018	0.054	-0.037	0.064	0.024	0.041	0.097**	0.005
Self- risk car accident	0.007	0.068	-0.042	0.107**	0.009	0.025	0.085	0.016

Table 3: Correlations between feelings, risk perceptions and economic expectations by questionnaire version
** p<0.05, ** p<0.01. The possible answers vary between 1 and 7, where 1 is "not at all" and 7 is "certainly".*

5. Discussion

The current study examines the framing effect in the context of economic expectations and risk perceptions. We examine whether and how framing affects economic expectations and perceived risk and how these interact with natural positive and negative feelings.

In the current study, we asked respondents to estimate their levels of negative and positive feelings during the last week, their expectations for improvement in their economic status in the next ten years and their personal risk perceptions with respect to various events. The questions regarding economic expectations and risk perceptions were presented in two versions (positive and negative) to two groups of participants (between-subject analysis).

Our results show that individuals evaluated their chances of finding a successful job significantly more optimistically on the positive version than on the negative version. One possible explanation for this result could be that on the positive version people can imagine the desired situation of finding a successful job and as a result perceive a higher probability that this will occur. This result is compatible with Lench and Bench (2012), who found that desire, represented as a positive affective reaction to potential future events, causes optimism for the future. Yet, no significant differences between the positive and the negative versions were found for the mean level of the economic expectations index or for the statement: "I probably will/will not make a lot of money (during the next ten years)." This may be because in this context the negative phrasing of not making a lot of money did not evoke the "avoidance motivation" as it did for the other risky events.

As for the positive versus the negative phrasing of risk perceptions, the results show that how the risk perception questions were framed had an impact on individuals' reported risk perceptions. Respondents were more optimistic in reporting their perceived risks on the negative version compared to on the positive version. The negative version of the risky event may have evoked negative affective reactions, which in turn affected the perceived risk. Actually, when people consider whether a future event is likely to occur, previous

evidence suggests that they generate a mental simulation of the event and have affective and emotional reactions during the simulation that influence perceived risk (Lench and Darbor 2014; Lench 2009; Loewenstein et al. 2001; Schwarz 2004). Indeed, negative affective reactions are theorized to reduce the perceived likelihood of negative events because people can realize their motivation to avoid the event by judging it as unlikely to occur (Lench and Darbor 2014, p. 571; Lench 2009; Lench and Bench 2012).

Negative feelings: The results of the correlation analysis show that for the negative version of the questionnaire, higher reported levels of negative feelings were related to more pessimistic economic expectations and risk perception. These results are compatible with the valence theory (Johnson and Tversky 1983; Wright and Bower 1992) that people in bad moods make pessimistic judgments. In addition, our results are compatible with the findings of Benzion et al. (2012) that a higher level of negative feelings evoked by a fire disaster significantly correlated with lower expectations for improvement in participants' own economic situation. Moreover, previous studies indicate that negative emotions also correlate not only with risk perception but also with risk attitude. For example, Campos-Vazquez and Cuilty (2014) found that risk aversion increases with sadness.

Yet, for the positive version of the questionnaire we did not find any significant correlations between negative feelings and economic expectations or between negative feelings and risk perceptions. One possible explanation for these results is that in the positive framing of the risky items, participants did not have a "vivid" image of the risky event as they had when we used the negative framing. Therefore, no impact of emotions on risk perceptions was found. The only exception we found was a significant negative correlation between being "afraid" and the economic expectation of finding a successful job. Those with a higher level of fear gave lower estimates of their chances of finding a successful job in the future.

Positive feelings: The results of the correlation analysis show that in general for the negative version as well as the positive version of the questionnaire, no significant correlation was found between positive feelings and risk perceptions. One exception was that respondents on the negative version who felt more comfortable perceived a lower risk of violent crime. Another exception was that on the positive version, respondents who felt more enthusiastic perceived a lower risk of being involved in a car accident. Yet, our results also suggest that these effects may depend on how the risky events are framed.

The findings of the correlation analysis in the current study also show that in general for the negative version of the questionnaire, no significant correlation was found between economic expectations and positive feelings, except for feeling comfortable. On the positive version of the questionnaire, however, we found significant correlations between each of the positive feelings and the expectation of finding a successful job in the future. Those whose levels of "enthusiastic," "decisive" and "comfortable" feelings were higher perceived that their chances of finding a successful job in the future were also higher. This result supports the valence theory that people in good moods tend to make optimistic judgments. Yet, our results also suggest that these effects may depend on how the economic situation is framed.

To conclude, our results suggest that the relationships between feelings and risk perceptions and between feelings and economic expectations depend on how the risky events and economic situations are framed. Our results support the prediction of the valence theory that people in bad moods tend to make pessimistic judgments for naturally reported negative feelings (without manipulation) *only for negatively framed questions*. As for naturally reported positive feelings, we found almost no impact on risk perceptions in either version. Yet we did find a positive impact on the economic expectation of finding a successful job. The results of this study are important for a deeper understanding of the factors that shape an individual's risk perceptions and economic expectations, which in turn may affect the decision-making process.

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Appendix A – The Questionnaire

- Part A: EVAR questions –

Likert-scale response options ranged from 1 (I agree very much) to 7 (I do not agree at all)

1. When the traffic light turns yellow, I tend to accelerate.
2. I feel like I can take on the world.
3. Usually, I prefer adventures over routine.
4. I seek the thrill of danger.
5. I am open to (verbal) confrontation.
6. Usually, I give priority to action rather than reason.
7. I am sure of myself.
8. I am always right.
9. I emphasize speed rather than precision.

- Part B: Risk Perceptions and Economic Expectations – Positive Version

Likert-scale response options ranged from 1 (I do not agree at all) to 7 (I agree very much)

1. I will probably find a good job for me in the future (during the next ten years).
2. I will probably make a lot of money (during the next ten years).
3. I probably won't be injured in a terror attack in the coming year.
4. I probably won't be a victim of a violent crime (not terror) in the coming year.
5. I probably won't get hurt in a car accident in the coming year.

- Part B: Risk Perceptions and Economic Expectations – Negative Version

Likert-scale response options ranged from 1 (I do not agree at all) to 7 (I agree very much)

1. I will probably find a disappointing job in the future (during the next ten years).
2. I probably won't make a lot of money (during the next ten years).
3. I will probably be injured in a terror attack in the coming year.
4. I will probably be a victim of a violent crime (not terror) in the coming year.
5. I will probably get hurt in a car accident in the coming year.

- Part C: Personal Characteristics

- Age---------- Gender---------- Years of education----------
- How do you define yourself religiously? Ultra-orthodox / religious / traditional / secular / other
- The average gross monthly income for an Israeli household is 13,000 NIS. Your parents' household income is: much higher than the average / higher than the average / average / lower than the average / much lower than the average

- Part D: Feelings

The following table contains a few words that depict different feelings and sensations. Please mark the appropriate answer depicting the intensity of the feeling or sensation you felt during the last week. Answers range from 1 (Did not feel at all) to 7 (Feel very much): Nervous, Worried, Enthusiastic, Irritable, Decisive, Anxious, Afraid, Comfortable

Appendix B

All - both positive and negative versions, 511 respondents					
Kendall					
Variable	**gender**	**parents' income**	**religious status**	**age**	**education**
negative feelings	0.166	0.041	0.002	-0.053	-0.014
p-value	<.0001	0.269	0.965	0.092	0.705
positive feelings	-0.016	-0.051	0.091	-0.027	-0.018
p-value	0.670	0.174	0.016	0.402	0.629
Economic expectation index	0.037	0.038	0.049	-0.018	0.021
p-value	0.343	0.322	0.205	0.582	0.594
The chance of finding a successful job	0.101	0.037	0.017	0.017	0.031
p-value	0.012	0.356	0.681	0.624	0.439
The chance of making money	-0.001	0.040	0.064	-0.037	0.020
p-value	0.980	0.318	0.108	0.272	0.622
risk perception index	0.031	-0.004	-0.061	0.023	0.100
p-value	0.419	0.908	0.106	0.465	0.008
terror attack	0.029	-0.007	-0.082	0.051	0.123
p-value	0.460	0.853	0.038	0.127	0.002
violent crime	0.015	-0.017	-0.060	0.015	0.078
p-value	0.699	0.663	0.129	0.667	0.049
car accident	0.017	0.023	-0.027	-0.005	0.067
p-value	0.674	0.563	0.492	0.880	0.086
Negative version, 303 respondents					
Kendall					
Variable	**gender**	**parents' income**	**religious status**	**age**	**education**
negative feelings	0.124	0.048	0.073	-0.059	-0.003
p-value	0.010	0.317	0.130	0.147	0.947
positive feelings	-0.031	-0.053	0.095	-0.034	-0.042
p-value	0.521	0.277	0.052	0.409	0.396
Economic expectation index	0.046	0.025	0.058	0.017	0.003
p-value	0.359	0.623	0.243	0.695	0.951
The chance of finding a successful job	0.114	-0.004	0.018	0.030	0.017
p-value	0.029	0.939	0.726	0.497	0.746
The chance of making money	0.003	0.048	0.074	0.011	0.012
p-value	0.959	0.349	0.154	0.807	0.824
risk perception index	0.108	-0.004	-0.086	0.081	0.108
p-value	0.030	0.935	0.083	0.054	0.029
terror attack	0.097	-0.016	-0.104	0.103	0.134
p-value	0.064	0.753	0.047	0.020	0.010
violent crime	0.096	-0.032	-0.078	0.067	0.091
p-value	0.068	0.536	0.138	0.132	0.083
car accident	0.077	0.033	-0.068	0.055	0.074
p-value	0.136	0.520	0.188	0.208	0.154
Positive version, 208 respondents					
Kendall					
Variable	**gender**	**parents' income**	**religious status**	**age**	**education**
negative feelings	0.231	0.029	-0.104	-0.038	-0.031
p-value	<.0001	0.619	0.072	0.438	0.592
positive feelings	0.002	-0.049	0.095	-0.030	0.020
p-value	0.971	0.406	0.107	0.551	0.739
Economic expectation index	0.018	0.063	0.025	-0.084	0.038
p-value	0.769	0.301	0.681	0.108	0.539
The chance of finding a successful job	0.075	0.101	-0.002	-0.040	0.027
p-value	0.247	0.116	0.978	0.470	0.675
The chance of making money	-0.015	0.026	0.056	-0.112	0.037
p-value	0.807	0.685	0.379	0.038	0.558
risk perception index	-0.064	-0.002	0.002	0.049	0.173
p-value	0.274	0.977	0.971	0.329	0.003
terror attack	-0.052	0.012	-0.019	0.095	0.186
p-value	0.400	0.841	0.763	0.069	0.003
violent crime	-0.070	0.005	-0.003	0.026	0.146
p-value	0.256	0.930	0.958	0.616	0.018
car accident	-0.060	0.011	0.070	0.001	0.134
p-value	0.327	0.856	0.255	0.978	0.030

Appendix C

ALL, 511		
Kendall		
	Version: negative (0) or positive (1)	
	coefficient	p-value
negative feelings	0.00789	0.8304
positive feelings	-0.01392	0.7113
Male, 261		
Kendall		
	Version: negative (0) or positive (1)	
	coefficient	p-value
negative feelings	-0.05131	0.3216
positive feelings	-0.03037	0.5643
Female, 250		
Kendall		
	Version: negative (0) or positive (1)	
	coefficient	p-value
negative feelings	0.04542	0.3889
positive feelings	0.00445	0.9342

Appendix D

	Correlation with negative feelings			
	Male, 261		Female, 250	
	Kendall		Kendall	
	coefficient	p-value	coefficient	p-value
Economic expectations index	-0.198	<.0001	-0.082	0.076
The chance of finding a successful job	-0.203	<.0001	-0.113	0.020
The chance of making money	-0.186	<.0001	-0.054	0.253
Risk perception index	-0.168	0.0001	-0.022	0.623
terror attack	-0.135	0.004	-0.017	0.722
violent crime	-0.167	0.0003	-0.046	0.336
car accident	-0.166	0.0003	-0.016	0.741
	Correlation with positive feelings			
	Male, 261		Female, 250	
	Kendall		Kendall	
	coefficient	p-value	coefficient	p-value
Economic expectations index	0.091	0.049	0.053	0.263
The chance of finding a successful job	0.108	0.025	0.090	0.070
The chance of making money	0.080	0.094	0.014	0.769
Risk perception index	0.033	0.457	0.014	0.759
terror attack	0.001	0.988	0.010	0.829
violent crime	0.054	0.249	0.030	0.537
car accident	0.055	0.241	0.011	0.816