Interest rate demands and television viewing –

Is a single exposure more influential than routine viewing?

Abstract

This study examined the impact of media consumption, and particularly exposure to television, on decisions regarding interest rate demands. One hundred and fifty four participants were randomly divided into two groups: in the manipulation group, participants were exposed to a news clip about an Iranian nuclear attack on Israel, whereas in the control group, the participants were not exposed to the film. Both groups filled a questionnaires regarding their interest rate requirements in different situations, their media conception behaviors and demographic questionnaires. Frequent routine viewing increased the interest rate demands only among participants in the manipulation group, but the manipulation itself did not have a significant effect on interest rate demands. The results are explained in terms of cultivation theory.

Keywords: Cultivation ; Television ; Interest Rate ; Loans ; Money ; Discounting ; Experiment

**Interest rate demands and television viewing –
Is a single exposure more influential than routine viewing?**

This study examined the impact of media consumption, and in particular exposure to television, on decisions regarding interest rate demands. The research literature is abundant with evidence concerning the influence of routine television viewing, as well as single exposure, on daily behavior (see Dossche, 2010 for a review of single exposure experiments; see Shanahan and Morgan, 1999 for a review of routine viewing studies). Yet, very little attention has been paid to the impact of television viewing on financial decisions despite the accumulated evidence according to which watching television is significantly correlated with pessimistic economic expectations (Hetsroni, Sheaffer, Ben- Zion & Rosenboim, 2014). Moreover, the connection between having pessimistic economic expectations and financial behaviors such as avoiding consumption and preferring conservative savings plans that – at the macro-level – can contribute to an atmosphere that may escalate economic downturns (Goidel, Procopio, Terrell, & Wu, 2010) is beyond doubt. Our work is also one of the very few to concurrently examine the impact of a single exposure to news and routine television viewing on decision making. Previous studies did not reach an unequivocal conclusion as to whether a single exposure strengthens, annuls or leaves no impact on the effect of routine viewing (cf. Ward, 2002).

Decisions concerning interest rate requirements are decisions about money. Few things occupy as central a place in our lives as does money. Money (or lack thereof) shapes our lifestyle, plays a crucial role in building our self image, and determines many of our day-to-day decisions (Furnham & Argyle, 1998). Money may also serve to manage stress and anxiety (Zaleskiewicz, Gasiorowska, Kesebir, Luszczynska & Pyszczyński, 2013). The classic paradigm of financial theory assumes that people make rational decisions regarding money based on concrete knowledge, expectations, and experience in capital markets. However, empirical studies offer ample evidence that people do not always treat money rationally (Caskey & St. Laurent, 1994; Zhang, 2009).

Specifically, we often reach decisions about giving loans that objectively make very little sense, e.g. requiring lower interest rate from a richer non-liquid customer than from a poorer liquid household (Kośny & Piotrowska, 2013).

Decades ago, Tversky and Kahneman (1974, 1979) had already made the case that rationality, when it comes to decisions about money, is imperfect, if it exists at all (Kudryavtsev, Cohen & Hon-Snir, 2013). Since many people value money for more than what it can purchase, and conceive it as a reward on its own (Lea & Webley, 2006), interest rate demands on loans may seem to be sometimes unrealistic (Hsee, Yu, Zhang, & Zhang, 2003). This comes to terms with the general tendency to be risk-averse about money (Winterhaider, 2007) and avoid minuscule losses while giving up significant potential gains (Kahneman & Tversky, 1979) because promised future benefits may never materialize, and since waiting for resources in the future may often result in lost opportunities (Wilson & Daly, 2004). This view is also consistent with the concept of *discounting*, namely, the fact that a delayed reward is reduced in value compared to an immediate reward (Kirby, 1997). Discounting is justified by the cost of lost opportunities and the burden of uncertainty. It also reflects a time preference for the present over the future (Frederick, 2006).

Discounting can be divided into two variants: *temporal discounting* which is the decreasing valuation of rewards the longer one must wait to receive them, and *probability discounting* that stands for the decreasing valuation of rewards the less certain one is to receive them (Green & Myerson, 2004). Thus, a given benefit of say \$1,000 is worth less if you have to wait for it (temporal discounting) and when there is uncertainty regarding whether or not you will get it (probability discounting). The classic example of temporal (or future) discounting involves a choice between a larger and a smaller reward, where the smaller reward is available sooner than the larger one.

Demanding a certain interest rate on a loan (the case we use for demonstration in the current study) is psychologically parallel to declaring the discounting rate (Lahav, Ben-Zion & Shavit,

2010). People usually demand a higher interest rate on loans given for longer periods. This behavior can be explained by loss aversion, as the value of money is reduced when the time to get it back is elongated (Thaler, 1981). Behavioral studies indicate that, in the eyes of individuals, the value of money decreases exponentially in response to a linear increase in the time to get it because ordinary people consider mainly the immediate loss of opportunities and demand to be compensated accordingly (Kirby, 1997). Specifically, during the first period of the loan the value of money (the reward) decreases sharply and then it becomes more stable. This may explain why the interest rate demanded by the bank and firm does not grow in strict proportion to the length of the loan. While the total interest rate demanded is higher on long term loans, the interest rate per-time segment (e.g., day, week) is higher on short term loans. In contrast, banks and financial institutes (e.g., credit card companies) behave more objectively and operate algorithms that – compared to individuals – are less dictated by psychological factors. These corporations weigh short as well as long term opportunities and demand only a somewhat higher interest rate on longer term loans (Fishburn & Rubinstein, 1982). Thus, the subjective discount rate measured in experiments such as the present is unlinked to the actual interest rate offered by banks to customers. The subjective discount rate measures individual differences in tolerance to the deferral of rewards i.e., the willingness to wait in order to get more money in the future (Grable, 2000). Studies have shown that these preferences vary across persons and situations and indicate patience and willingness to wait (Ben-Zion, Rapaport & Yagil, 1989; Green & Myerson, 2004). Pessimistic people tend to have a higher subjective discount rate, most likely because they expect a bleak future (Jouini & Napp, 2006).

Interest Rate, Fear, and Media

Fear may have an impact on the required interest rate on loans (Hanoch, 2002). People who feel afraid are more likely to be prudent with their money (Lee & Andrade, 2011) because they conceive higher risk and greater hazard not to get their money back (Ben-Zion et al., 1989). The arousal of fear by cues that include photos, verbal messages and movies which depict danger and

suggest physical threat (Maner et al., 2005) enhances self-protective behaviors such as "playing safe.". In the financial domain, these behaviors translate into choosing non-risky investments (Carroll, Hall, & Zeldes, 1992) and asking for a higher interest rate on loans (Labat & Block, 2012).

Television exposure has a proven ability to raise fears (Bryant, Carveth & Brown, 1981; Cantor, 2009). A number of studies which examined the emotional reaction of viewers to frightening movies and television shows indicated that exposure to such stimuli enhanced levels of self-reported fear and anxiety (Cantor, 1991; Sparks, Spirek & Hodgson, 1993). Furthermore, routine TV viewing was also found to be significantly associated with greater fear of crime (Hiricos, Padgett & Gertz, 2000; Weitzer & Kubrin, 2004). One explanation of this association is that television viewing brings with it daily encounters with fear arousing stimuli, as the programming is abundant with criminal narratives and "shocking" news (Soroka, 2006). Thus, television can become an environmental stressor that entices chronic activation of self protective behavior which encourages prudent financial behavior (Luna, Paulsen & Padmanabhan, 2013).

Indeed, the long-term effects of television viewing on economic perception and behavior tend to be negative. After controlling for actual income, heavy viewers still rate their income as relatively lower than average (Layard, 2005), feel less financially satisfied than the "man on the street" (Frey, Benesch & Stutzer, 2007), and are less certain of their capability of paying their mortgage (Frey & Stutzer, 2002).

The *cultivation hypothesis* offers a potential conceptualization to the associations between TV viewing and financial attitudes and behaviors. This theory proposes that television is a noteworthy communication agent and a most effective storyteller. Therefore, heavy television viewing leads to adopting estimates, views and orientations that are disproportionately or distortedly represented on the home screen compared to their presence in the real world (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002). Hawkins and Pingree (1982) suggested that the cultivation effect consists, in fact, of two types. The first refers to the positive relationship between

heavy viewing and distorted perception of the world e.g., erroneous assessment of the prevalence of certain occupations in direct correspondence with these occupations' screen presence known as a *first-order effect*. The second is the interrelatedness between heavy viewing and attitudes and views that directly derive from often repeated televised messages e.g., reverence for law and order termed as a *second-order effect*. Nabi and Sullivan (2001) added a third-order cultivation effect denoting the relationship between heavy TV viewing and behavioral intentions whose content relates directly to second-order views and attitudes. These researchers demonstrated a relationship between the amount of time devoted to television viewing and intentions to take protective measures against crime. Recent studies were able to show a third-order cultivation effect in a small number of contexts such as risky driving (Beullens, Roe & Van den Bulck, 2011) and gambling (Lee, 2013).

The explanation of the third-order cultivation effect connects the cultivation hypothesis with the *theory of planned behavior* (TPB). This theory argues that attitudes are good indirect predictors of behavior because they indicate intentions to perform specific behavior in the future (Ajzen, 1991). Meta-analytic reviews found that the correlations between intentions and behaviors range from .40 to .82 (Sheeran, 2002). The direct association between television viewing and behavioral intentions complements the typical reasoned action theory rationale by adding media exposure as an antecedent that leads eventually to certain conducts.

This brings us to the question how are the different cultivation effects established. Hawkins and Pingree (1982) suggested that first-order cultivation occurs because people learn facts actively from the home screen and that this learning forms the basis of higher order effects. This linear explanation received no empirical support (Hawkins, Pingree & Adler, 1987). Shrum, Burroughs and Rindfleisch (2004) suggested that no intentional learning is involved in first-order effects. Instead, televised exemplars encoded superficially during viewing are retrieved when asking for memory-based judgments because of their higher accessibility. Heavy viewers are likely to have more information encoded and therefore have more exemplars ready for retrieval. This view finds

support in research which has shown that when answering survey questions (similar in structure to cultivation questionnaire items) respondents often make choices "off the top of the head" (Taylor & Fiske, 1978) on the basis of the first idea that comes to mind due to salience, recency or high frequency. These are attributes wherein typical TV programming excels (Zaller & Feldman, 1992) and this is why its content is accessible to heavy viewers. Accordingly, first-order cultivation effect is an outcome of a process wherein television viewing enhances construct accessibility (Shrum, 2007). The explanation of second (and possibly third) order effect is different. Here, greater motivation during viewing promotes the establishment of attitudes that are actively processed during viewing and later produced online and not off-memory (Shrum, Lee, Burroughs & Rindfleisch, 2011). This is the type of effect measured in the current study.

Research Hypotheses and Questions

In line with the "play safe" pattern in response to fear-arousing stimuli exhibited in the financial domain (Carroll et al., 1992), we believe that exposure to such audio-visual stimulus would lead to higher interest rate requirements.

H1: Exposure to a shocking news clip concerning a possible nuclear attack would lead to higher interest rate requirements.

The second hypothesis relates to the impact of routine exposure to television on interest rate demands. The effect of television viewing on economic perception tends to be negative (Frey & Stutzer, 2002; Frey et al., 2007; Goidel et al., 2010). This is part of a general pattern of negative associations between heavy TV viewing and optimism in various walks of life (Bruni & Stanca, 2008; Morgan, 1984), which can be either interpreted as a second-order cultivation effect caused by repetitive exposure to dramatic genres that accentuate treason and mistrust (e.g., detective series) or news that highlights the negative aspects of daily life (Gerbner et al., 2002). Specifically, such argument makes sense in light of the negative tone in news coverage of the economy and the unfavorable treatment of the topic in popular non-fictional programming (Hetsroni & Sheaffer, 2013).

Alternatively, the association can be attributed to previously existing unhappiness that brings people to invest more time in television viewing and maintain pessimistic attitudes about the economy (Robinson & Martin, 2008).

H2: Routine TV viewing would be associated with higher interest rate requirements.

How would the interplay between routine viewing and single exposure look like? Gerbner, Gross, Morgan, and Signorelli (1980) use the term *resonance* to explain why heavy viewers whose socio-economic background is rich in experiences similar to scenes typically shown in TV programming are more highly cultivated. For example, residents of neighborhoods abundant with violent crime of the type commonly presented on television report greater fear of crime and overestimate crime prevalence more than heavy viewers whose demographic background shares nothing in common with the typical TV fare (Doob & Macdonald, 1979). According to Gerbner et al. (1980), the TV reality resonates with the viewers' real-life experience to produce a stronger effect. The present study provides an examination of a different kind of resonance to which we suggest the term *TV resonance* - a situation where a sudden exposure echoes the reality of programming to which heavy viewers have been routinely exposed for years.

H3: TV viewing would moderate the associations between exposure to a shocking news clip and interest rate demands. Specifically, participants exposed to a news clip concerning a possible nuclear attack and who are also high in routine television viewing would demand higher interest rates compared to participants exposed to a similar news clip but are low in routine television viewing.

Finally, we explore whether the period of the loan matters when it comes to the impact of television (routine viewing or experimental exposure to a shocking news clip) on interest rate requirements. Experimental evidence exists that individuals demand considerably higher interest rates on short term loans than on long term loans (Furnham & Argyle, 1998), but evidence concerning the impact of environmental stressors on this tendency is mixed (Kirby, 1997; Thaler, 1981). In light of

that, and particularly since the topic has not been investigated hitherto in the context of media exposure, we posit a research question and not a directional hypothesis.

RQ1: Does the association between television viewing (routine or experimental exposure to a shocking news clip) and interest rate requirements vary by the length of the loan?

Control Variables

A line of demographic, socioeconomic, and attitudinal factors may impact financial decisions. Naturally, we cannot deal with all of them in one study, but we pay attention to factors whose influence was noted in the past even though the direction of the influence was not always unequivocal and keep these variables under control without prior prediction.

Sex

Studies show that women are more concerned than men with retaining money for unexpected occurrences (Furnham & Argyle, 1998). Women are more risk-averse (Byrnes, Miller & Schafer, 1999), either due to socio-biological reasons as females bear greater responsibility for child upbringing (Witt, 1994), or because of socio-economic factors as females are more prone to financial hardships due to their typically lower wages and lower position at work (Roszkowski & Grable, 2010). Regardless of cause, the higher financial cautiousness among women may direct them to demand higher interest rates, compared to men. Yet, women are also more altruistic and less greedy than men are (Anderoni & Vesterlund, 2001). Compassionate tendencies may, therefore, direct women to be sufficed with lower interest rate (compared to men) on money they loan.

Marital status

Past research found marital status to be occasionally significantly but rarely consistently related to financial decisions. Some studies have indicated that married individuals are more risk averse financially, possibly due to a stronger sense of worrying about future hazards (Sung & Hanna, 1996). Other studies found that marriage actually correlated with an increase in high risk investments (Grable, 2000), when the couple feels that its two incomes combined are large enough

to sustain risk taking (Xiao & Anderson, 1997). Finally, few works reported no impact at all for marital status – perhaps because nowadays young people often cohabitate without marriage for many years and the effect of marriage is, therefore, possibly annulled (Chaulk, Johnson & Bulcroft, 2003; Van de Venter, Michayluk & Geoff, 2012).

Socio-Economic Status

The findings of studies concerning the association between financial status and financial risk taking that finds expression on high interest rate demanded from low-credit loaners are also inconsistent. A number of studies reported that high income individuals are more willing to take risks (Chang, DeVaney & Chiremba, 2004; Grable, 2000), while others have shown that financial decisions are essentially independent of one's income level (Griskevicius et al., 2013). Feasibly, the total value of family income (including parents' earnings) – and not the personal salary - impacts young adults (including college students) risk taking policy because these individuals may rely on their parents to add to their income (Kidwell, Brinberg & Turrisi, 2003).

Pessimism

Pessimistic people tend to anticipate more potential losses (John & Lang, 2012). Negative anticipations foster a non-risky preparation for the future (Schulz, Bookwala, Knapp, Scheier & Williamson, 1996) and enhance the protection of current fortunes (Cheng, Fung & Chan, 2009). This risk aversion translates into higher interest rate requirements (Jouini & Napp, 2006). In contrast, optimistic people (and particularly those who hold positive economic expectations) are more tolerant about financial risks (Sung & Hanna, 1996). The mechanism at work here may have to do with beliefs about the future. Economic pessimism (e.g., anticipation to get fired) can strengthen the tendency to keep the money “in the vault” in case of financial difficulties and demand higher interest rates that may deter loaners (Lunwig & Zimmer, 2006).

Method

Participants

One hundred and fifty four undergraduate social science students attending a public Israeli university were randomly divided into two groups equal in size ($N=77$) and nearly similar in major demographic qualifications such as mean age ($M=24.50$ $SD=2.20$ years in the manipulation; $M=25.0$ $SD=2.05$ years in the control), sex [twenty males (26%) in the manipulation; twenty-four males (31%) in the control]¹, and marital status [seven (9%) married in the manipulation; ten (13%) married in the control]. No significant differences between the two groups were noted in age ($T_{(152)} = 0.95, p = .34$), sex ($\chi^2_{(1)} = 0.72, p = 0.39$), or marital status ($\chi^2_{(1)} = 0.69, P = 0.41$).

Procedure

No participant learned about the topics investigated in this research during his or her course of study. All participants took part in the experiment to fulfill their research requirement in a major college-entry class. No extra credit or financial rewards were offered. The experimenter (who was neither a teacher of the students nor one of the researchers) told the participants that the study would examine attitudes and perceptions on social and economic matters. After giving their consent agreement, the participants were randomly directed to two large halls where (in the manipulation group) they were first exposed to the manipulation film (shown in darkness on a cinema-size screen) and then filled in a questionnaire², or (in the control group) only filled in a questionnaire without being exposed to the film. A design that juxtaposes participants who watch a film with participants who do not watch it is common in cultivation experiments (e.g. Wilson, Linz, Donnerstein & Stipp, 1992). The experiment, which took less than 30 min., was conducted in accordance with APA ethical standards. It received the approval of the first author's University ethics committee which authorizes research involving human participants. In both conditions,

¹ The lower percentage of males and the somewhat high average age (for college students) reflect the demographics of a student body in a country where both men and women complete a 2-3 years compulsory military service and where social sciences attract mainly female students.

² The film was shown as a standalone. We did not provide the participants with any information about it prior to the screening so as not to encourage them to develop attitudes toward the manipulation.

participants were able to opt out at any point (no participant willingly did that). After the questionnaires were collected, the participants were thanked and debriefed.

Manipulation

The decision to use an Iranian nuclear attack as the topic of the manipulation film was based on a preliminary content analysis that identified the most salient threat featured on Israeli television. Obviously, a future nuclear attack is uncertain, but it exactly the uncertainty which makes the threat more frightening (Schuler, 1980). Not knowing something crucial about the surroundings makes us lose control and become unable to deal with an environmental threat (Milliken, 1987).

Preliminary Content Analysis

To ascertain that the content of the manipulation stimulus is of the type to which participants were likely to be routinely exposed, when watching television, we analyzed TV news aired on April and May of 2012 (the experiment was conducted in early June 2012) in the two most highly watched networks in Israel - *Channel 2* and *Channel 10*. Together, these stations attract some 60% of the audience share (Eurodata TV, 2010). The sample consisted of 106 hours (excluding commercials) drawn from all the newscasts that were aired six days a week during the prime time hours.

The unit of analysis was *a discrete news item where a threat was reported*. The definition of a threat was *information about concrete danger which a significant part of the Israeli population may face*. In 120 items (out of 225 items that were broadcast during the monitored period) a threat was identified. The coding of these 120 items was carried out by two coders, not affiliated with the research or the researchers, who were trained for three hours and were directed to independently identify the major theme of the threat. Inter-coder reliability was computed for the entire database. The value of *Krippendorff's alpha* coefficient ($\alpha=.911$) indicates high agreement (cases of disagreement were decided by the first author).

The analysis found that the most frequent threat theme – appearing in 75 items (62.5%) -- was an Iranian nuclear attack, followed by economic hardship (25 items, 20.8%) and environmental hazards (12 items, 10.0%). In light of that, it was concluded that an Iranian nuclear attack was the most prevalent threat theme. The experimental stimulus was prepared accordingly. No content analysis of interest rate representation was conducted because of the rarity of the topic in television programming (a recent content analysis of 60 hours of news programs from Israel found not even one occurrence – see Hetsroni & Sheaffer, 2013).

Manipulation Description and Check

Excerpts were used from news reports covering the most recent *major* rocket attack on Israeli civilians (which had occurred three years before the study was conducted). They combined it with footage showing Iran's nuclear reactor, archived clips of atomic explosion, an expert's testimony regarding Iran's progress in developing weapons of mass destruction, and recent newspapers headlines about Iran's progress in developing weapons of mass destruction that emphasize the severity of the threat. The film was professionally edited to resemble a realistic news item lasting three minutes and employing a proficient anchorman (as voice-over).³ News-style clips such as this are widely used as fear inducing stimuli in research (for recent examples, see Salas, Radovic, & Turnbull, 2012; Schaefer, Nils, Sanchez & Philippot, 2010) because they can easily catch the viewers' attention when shown on a large screen and provide an optimal model of reality due to their dynamic realistic style (Hewig, Hagemann, Seifert, Naumann & Bartussek, 2005).

The efficiency of the manipulation was assessed twice in two different samples. First, prior to the experiment, the clip was shown to four TV journalists (who were not involved in any other stage of the research); they were asked to rate the level of threat posed by the clip to ordinary viewers on a scale ranging from 1 (not threatening at all) to 7 (highly threatening). The journalists rated the level of threat as higher than 5. The journalists evaluation of the mean level of threat was relatively high

³ The manipulation clip can be viewed at the following internet address:
<http://dl.dropboxusercontent.com/u/55589368/iranvideo.wmv>

(Mean= 5.70, SD=0.65). The second check was included as part of the experiment. In both the manipulation and the control group, the participants were asked to rate their level of fear of a possible Iranian nuclear attack on a scale ranging from 1 (if the person did not feel frightened at all) to 7 (if the person felt highly frightened). In the manipulation group, the participants' subjective mean fear rating ($M=4.35$ $SD=1.70$) was by 15% of the scale range higher than that of the participants in the control group ($M=3.45$ $SD=1.65$). This difference is significant ($T_{(142)}= 2.05$, $P=.04$). Thus, it is obvious that the manipulation enhanced fear of a possible Iranian nuclear attack. It should be noted that the manipulation group and the control group did not differ in rating other negative emotions which were measured for oversight purpose ($M=3.76$, $SD=1.45$ vs. $M=3.69$, $SD=1.59$ in sadness; $M=2.99$, $SD=1.22$ vs. $M=2.98$, $SD=1.37$ in depression).

Materials

The participants in both groups filled a questionnaire consisting of the following scales:

Interest rate requirements. Three open-ended items measured the dependent variable. The participants were asked: "Assume that you have \$1000⁴ deposited in your bank account. The bank offers you to *temporarily part ways with the money and get it back in one week* (item I), in *two months* (item II), in *one year* (item III). How much money would you demand to get in such case?" The stated sums were used to compute the required interest rate per day (see the results section). Such questions are commonly used in discounting and loan studies (e.g. Rachlin & Jones, 2007) and were found to be valid measures of subjective discounting and interest rate requirements (Rubinstein, 2003). Indeed, some studies prefer to ask about money given as a gift and not about money that the participants already own, however, both formats produce interest rate demands that are quite similar one to another (with much higher rates demanded for shorter loan periods) and considerably different from the interest rate demanded by banks. Furthermore, asking about money

⁴ The question stated an equivalent sum in Israeli currency.

given as a gift could seem less realistic to persons who in their daily life rarely receive financial gifts of high value (Lahav et al., 2010).

Socio-demographic information. The participants gave details on their sex, family income⁵ and marital status.

Economic pessimism. An index developed by Hetsroni et al. (2014) to assess economic expectations consisting of four statements ("In the coming year, my salary will be raised"; "In the coming year, my economic situation will improve"; "In the coming year, my standard of living will rise"; "In the coming year, my savings will rise significantly") was posed to the participants who were asked to mark their agreement with each statement on a seven-point scale ranging from 1 (totally disagree) to 7 (totally agree). Hetsroni et al. reported high internal consistency ($\alpha=.90$), which we were able to replicate ($\alpha=.89$). To ascertain the scale's test-retest reliability, twenty participants filled in this part of the questionnaire one month after the study had been conducted. The correlation between the two measurements ($r=.80$) indicates sufficient reliability. Finally, in terms of validity, Hetsroni et al. (ibid.) reported that economic pessimism is a significant predictor of negative economic expectations ($r=.37$ after controlling for demographics).

Media consumption. The following items were asked open-endedly: "On an average week day, how long do you watch TV?" and "On an average weekend day, how long do you watch TV?" Items addressing different parts of the week were so weighted as to generate an average measure of daily TV viewing (cf. Morgan, 1984). Additionally, we asked about the time devoted to watching TV news because these shows often cover the economy. Likewise, we included items aimed at assessing the time devoted to consuming non-TV news media: newspapers, radio news and internet news sites. All the items assessed routine daily consumption so as to match methodologically the items that measure TV viewing.

⁵ The participants were asked whether their family monthly income was much higher, slightly higher, more or less around, slightly lower or much lower than the national average, which was presented as a rounded baseline.

Results

Descriptive Statistics

Before answering the research question and testing the research hypotheses we take a look at the scoring of the participants in variables that will be part of our multivariate models. Table 1 displays the major descriptive statistics for both the manipulation and the control groups for the following variables: interest rate per day (computed linearly based on the demanded sum at the end of the term for one-week loan, for two-month loan and for one-year loan), economic pessimism (scale ranging from 1- high pessimism to 7- high optimism) and daily media consumption in minutes (total amount of time devoted to TV viewing, time devoted to TV news viewing, time devoted to newspapers reading, time devoted to radio news listening, time devoted to internet news sites browsing).

In both groups the interest rate per day decreased considerably as the loan period became longer with a miniscule tendency across the board for higher interest rate demands in the manipulation condition. No outstanding inter-group differences could be found in background variables. Both groups hovered around the mid-point between economic pessimism and economic optimism. In all the media consumption indices, their level reached two thirds to three fourths of the national average – a typical trend among college students (Eurodata, 2010).

Testing the Research Hypotheses and Answering the Research Question

To test the research hypotheses and answer the research question, we built three hierarchical multiple regression models. The answers to the interest rate questions were used to compute mean daily interest rate for a one week loan, a two months loan and a one year loan which served as dependent measures. The predictors, arranged in four distinct blocks, were: Block I – demographics (sex, family income, marital status); Block II – attitudes (economic pessimism measured by Hetsroni et al. index); Block III - media consumption (television – total viewing; television - news viewing; newspaper reading; internet news sites browsing, radio news listening); Block IV –

manipulation and interactions between the manipulation and TV viewing, (interaction between the manipulation and total viewing and interaction between the manipulation and news viewing⁶).

Table 2 shows the regression models for the daily interest rate requirements in each loan period.

All the models are significant ($F_{(12,142)}=4.20$ $p<.001$ in the one week loan; $F_{(12,142)}=4.22$ $p<.001$ in the two months loan; $F_{(12,142)}=4.33$ $p<.001$ in the one year loan) with impressive predictive values (adjusted $R^2=.32$ in one week and two months loans; adjusted $R^2=.33$ in one year loan). Yet, only three predictors proved to be consistently significant across the board: sex of participant (men demanded significantly higher interest rate), total TV viewing time (heavy viewers demanded significantly higher interest rate), and interaction between TV viewing and exposure to the manipulation (participants who were exposed to the manipulation and were also heavy TV viewers demanded significantly higher interest rate than participants who were exposed to the manipulation but were not heavy viewers). The manipulation itself had no significant main effect or interaction effect with any variable other than the total amount of time devoted to TV viewing.

In light of the claim that the cultivation effect is not always linear but polynomial (Potter, 1991) we examined the potential contribution of quadratic measure of TV viewing time to the regression models. However, replacing the linear measure of viewing time by a quadratic factor contributes very negligently to the variance accounted for by the model: $\Delta R^2=.01$ in one-week loans; $\Delta R^2=.02$ in two-months loans; $\Delta R^2=.02$ in one-year loans.

H1, according to which exposure to the manipulation was expected to lead to higher interest rate requirements, is not supported. None of the regression coefficients pertaining to the manipulation was significant ($\beta=.07$, $p=.23$ in one week and two month loans; $\beta=.11$, $p=.17$ in the one year loan).

⁶ No significant effect of interaction was found between the manipulation and media consumption measures (other than TV viewing) or any of the other variables in the model. For the sake of parsimony, data concerning these non-significant interactions are not shown on Table 2, but they are available upon request from the authors.

However, H2, according to which routine TV viewing was expected to lead to higher interest rate requirements, is - at first glance - supported because all the regression coefficients pertaining to the total amount of time devoted to TV viewing are significant: $\beta=.39, p<.001$ in one week loans; $\beta=.40, p<.001$ in two months loans; $\beta=.39, p<.001$ in one year loans. Yet, if we examine separately the manipulation group and the control group we find an entirely different picture. In the manipulation group, there is a significant main effect of TV viewing: $\beta=.60, p<.001$ in one week loans; $\beta=.59, p<.001$ in two months loans; $\beta=.61, p<.001$ in one year loans. In the control group, such main effect is not noted: $\beta=.10, p=.52$ in one week loans; $\beta=.01, p=.91$ in two months loans; $\beta=.05, p=.72$ in one year loans. In other words, heavier TV viewing associates with higher interest rate requirements only among participants who were also exposed to the manipulation. Therefore, H2 is only partly confirmed. All the other media consumption measures (newspapers reading, internet news sites browsing, TV news viewing, radio news listening) were not significantly correlated with any of the interest rate requirements items.

To test H3, we examine the interaction between routine TV viewing and manipulation exposure using the procedure outlined by Hayes and Matthes (2009). Among heavy viewers, participants who are also exposed to the manipulation demanded significantly higher interest rate on *one week loans* ($\beta = 0.18, p = .03$), but among light viewers exposure to the manipulation did not affect interest rate requirements ($\beta = -0.08, p=.17$). This pattern repeated itself in *two month loans* ($\beta = 0.12, p = .02$ among heavy viewers ; $\beta = -0.06, p=.13$ among light viewers) and in *one year loans* ($\beta = 0.10, p = .01$ among heavy viewers ; $\beta = -0.04, p = .15$ among light viewers). Figures 1-3 depict how heavy viewers and light viewers⁷ vary in their mean daily interest rate demands in any loan period.

⁷ In all the figures, the cutoff point between heavy viewers and light viewers was the sample's median level of viewing – one hour and fifteen min. daily.

Clearly, light viewers did not increase their interest rate requirements in response to exposure to the news clip, however, heavy viewers who were also exposed to the manipulation film did demand higher interest rate (in any time period). Therefore, H3 is confirmed.

To answer RQ1, which asked whether the effect of the manipulation or that of routine TV viewing on interest rate requirements varies by the length of the loan, we compared, across the board, the size of relevant coefficients. As none of the coefficients pertaining directly to the manipulation was significant, obviously there is no variance in the significance of this factor. The coefficients pertaining to TV viewing (total amount of time) were significant, but they were also practically identical in size: $\beta=.39$, $p<.001$ for a one week loan; $\beta=.40$, $p<.001$ for a two months loan; $\beta=.39$, $p<.001$ for a one year loan.⁸ Thus, it is obvious that the effect of routine viewing does not vary by loan length.

Discussion

This study demonstrates a unique interplay between routine long-term TV viewing and a single exposure to a shocking news clip and shows how the combined power of the two is capable of leaving a considerable impact on financial decisions that none of them casts singlehandedly.

Cultivation Findings

The findings corroborate a third-order cultivation effect by linking the total amount of time devoted to TV viewing (and not to any other type of media) and requiring higher interest rate on loans at any length among viewers exposed to a news-style clip about a national security hazard. On the one hand, this result is supportive of the traditional Gerbnerian interpretation of cultivation as an *effect of prolonged consumption* (rather than a single exposure) *of television programming* (and not other media) *regardless of genre* (Gerbner et al., 2002). On the other hand, the fact that only people exposed to a manipulation are cultivated adds experimental intervention to the list of variables such

⁸ Coefficient values here are exact figures. Values appearing on Table 2 are rounded to the second place after the decimal.

as education and socio-demographics that curtail the size of the cultivation effect and sometimes even annul its existence altogether (Chiricos, Eschholz & Gertz, 1997; Doob & Macdonald, 1979).

Mere exposure to the clip did not have a significant effect on interest rate requirements. To explain the lack of a significant main effect of the experimental exposure, let us return to the literature concerning cultivation via single exposure.⁹ Ward (2002), who conducted an experiment where dramatic scenes of stereotypical and counter-stereotypical courtship were shown to college students (a similar population to the subjects in our study), presented mixed results: some measures of attitudes were affected by watching the film but others were not. Dossche's (2010) meta-analysis of cultivation experiments noted that the cultivation effect of a single exposure on behavioral intentions (of the kind measured by us), is approximately four times smaller than first-order effects assessed via reality estimates. The reason might be that, compared to reality estimations, behavioral intentions demand more conviction of the individual and are harder to be predicted on the basis of attitudes (Glasman & Albarracín, 2006). Bahk's (2001) writing offers a different explanation: in his view, in experimental settings viewers' involvement interferes with the cultivation effect. This idea received partial support in an experiment conducted by Taylor (2005), who found that only students who were highly involved with a TV scene about dating changed some of their attitudes as to how to behave on a date in congruence with the scene's message. Involvement may play an opposite role in the mechanism of the effect of TV viewing on behavioral intentions, if viewers' involvement enhances rather than blocks a high-order cultivation effect (Shrum et al., 2011).

Regardless of reason, the inevitable conclusion is that exposure to a shocking film is by far more effective when the people who are exposed to the film are also heavy TV viewers, as the significant interaction between routine viewing and the manipulation reveals. We suggest naming this interaction *TV resonance* because the mechanism is somewhat akin to Gerbner et al.'s (1980)

⁹ It should be noted that researchers associated with Gerbner's group (Morgan, Signorielli, Shanahan and others) tend not to view the outcome of a single exposure as cultivation, because for them cultivation is an effect of routine viewing across a long period of time (Gerbner et al., 2002).

description of *resonance*. In Gerbnerian resonance, individuals whose background is rich in experience similar to scenes typically shown in TV programming are more highly cultivated than people whose life experiences lack similarity to typical TV programming. In TV resonance, people who throughout their lives have been intensively watching TV programs and segments that style-wise and content-wise are not considerably different from the experimental stimulus are more significantly influenced by the experimental exposure. This may also mean that heavy viewers react differently to the sight of a threatening news clip because of their record of exposure to related films as part of long term viewing habits which makes the threat more accessible in their memory (Glasman & Albarracín, 2006). The emphasis on the role of *long term* viewing of a variety of programs distinguishes TV resonance from *priming* where a previous (often single) exposure to a distinct stimulus influences the reaction to another stimulus (Roskos-Ewoldsen, Roskos-Ewoldsen & Carpentier, 2002). Specifically, the lingering presence of messages about the Iranian nuclear threat in Israeli TV programming could make heavy viewers more prone than light viewers to take the manipulation clip about a potential Iranian nuclear attack on Israel seriously.

Evidently, the total amount of time devoted to television viewing was a significant predictor of interest rate requirements among viewers exposed to the manipulation, while the effect of news viewing fell short of significance. This finding confirms the claim made numerous by the Gerbner group that in order to assess the effect of cultivation we should examine non-selective TV viewing and not preference for certain shows because messages do not change radically across programs and genres (Morgan & Shanahan, 2010). To understand why this statement is correct in our case, we should look closely at the content of broadcasts (news and non-news) to which participants in the manipulation group could be exposed. Such an examination was recently made by Hetsroni and Sheaffer (2013), who analyzed economic content throughout the programming in Israel and found that even though interest rate is rarely mentioned, both news and entertainment apply a generally negative tone in references to the economy more frequently than a positive tone. In the non-news

section, the negative tone finds expression in an over-representation of hardship narratives (e.g., drama about a single mother's financial difficulties). In the news, the negative tone is demonstrated by over-coverage of negative developments (e.g. unemployment) and lack of attention to positive changes (e.g., creation of news jobs). As heavy viewers tend to project what is presented on TV as "present conditions" into the foreseeable future (Plous, 1993), a negative presentation of the economy on the home screen could be interpreted (often unconsciously) as realistic portrayal of economic conditions in the near future (Hetsroni et al., 2014). Nonetheless, viewing of news alone failed to significantly correlate with higher interest rate requirements (although the correlation conformed to the hypothesized direction), and attending to other news sources (e.g. newspapers), despite the newspapers' tendency to portray the economy in grey colors (Sanders & Gavin, 2004; Soroka, 2006), had no notable effect. People could have developed resistance to influence of the most serious media sources, such as TV news, radio news and newspapers, because -- to a considerable extent -- individuals attend to these media to gain essential economic knowledge (Meijer, 2010). This kind of instrumental media consumption may induce one to be more alert to influence attempts and contradicts what was termed by Rubin (1984) as *ritualized* media consumption, which is *habitual* mainly in order to fill in time. The last viewing style is possibly what makes non-discriminated TV viewing more influential in the long run (Shanahan & Morgan, 1999). This curtails the potency of using selective exposure as an alternative interpretation of our findings (cf. Minnebo, 2000), but it still should be emphasized that without the trigger of exposure to a shocking news clip non-discriminated viewing alone is not strong enough to leave an effect on interest rate requirements.

Other Findings

While interest rate demands do vary by length loan, as shorter term loans are associated with higher interest rate demands, the phenomenon is not affected by TV viewing. The tendency to demand noticeably higher interest rates per time segment on shorter term loans is explained by the

fact that individuals (in contrast with banks and financial institutes) consider mainly the immediate loss of opportunities (Furnham & Argyle, 1998). Indeed, the daily interest rate demanded by our participants (2.2% on a one-week loan, 0.8% on a two-month loan, 0.5% on a one year loan) is by far higher than the interest rate on loans awarded by banks (0.025% per day at the time of the study) or credit card companies (0.06% daily at the time of the study) to private customers.¹⁰ Furthermore, the interest rate per day required by financial institutes tends to be slightly higher for longer term loans, whereas our participants -- in both conditions -- were willing to obtain lower interest rates (on daily basis) on longer term loans. This means that financial institutes and individuals treat money differently. Financial institutes are able to assess the loaners' credit worthiness, refuse to give loans to overly risky individuals and demand lower interest rate from "safe" customers, and eventually reach more rational decisions about loan granting (Fishburn & Rubinstein, 1982). Private people like our participants lack professional tools and competence to assess the loaner's liquidity. They compensate on that by demanding considerably higher interest rate that demonstrate the overarching trend of most humans to be more risk averse than risk seeking with their money (Winterhaider, 2007).

Few words are due about the results pertaining to the control variables. As in other studies, sex of individual was found to be a significant factor in financial decisions with men demanding a higher interest rate. As we know that women are more cautious with money (Furnham & Argyle, 1998) whereas men tend to be more greedy (Anderoni & Vesterlund, 2001), it is possible that in decisions about loan granting greed and not risk proneness is behind the sex differences. Other demographic factors did not leave an unequivocal impact in line with previous research (cf. Chaulk et al., 2003; Van de Venter et al., 2012).

¹⁰ The annual interest rate demanded by our subjects were 803% on a one-week loan, 292% on a two-month loan, and 182.5% on a one year loan (based on non-compound calculation), whereas banks demanded 9-10% and credit card companies asked for approximately 22% annually at the time of the study.

The relationship between economic pessimism and higher interest rate requirements, while positive and consistent, did not pass the significance threshold level, as it did in some studies (Jouini & Napp, 2006). Possibly, this relationship is moderated by variables that we did not measure such as neuroticism which is associated with both heavy TV viewing (since neurotic people prefer to shy away from facing an unwelcoming reality – see Weaver, 2003) and higher interest rate demands (due to higher risk aversion in financial decision making among neurotic people – see Xiao, Wang & Lui, 2009).

General Conclusions, Limitations, Implications and Suggestions for Future Research

The fact that routine heavy TV viewing induces higher interest rate requirements among people who are exposed to a shocking news clip complements the results of a recent study which found that heavy viewing brings about negative expectations about the economy (Hetsroni et al., 2014). Obviously, expecting a negative turn in the economy encourages an upsurge in conservative financial savings and a tendency to "play safe" and retain the money in one's pocket (Gali, 1990). The practical implication on financial behaviors goes without saying. When triggered by a frightening stimulus (and such stimuli are abundant in daily life), heavy TV viewers might shy away from low-risk savings plans that promise only low interest rate. They may prefer to spend their money on consumption (as indicated by the renown association of TV viewing and materialism – see Burroughs, Shrum & Rindfelisch, 2002; Richins, 1987) or quest higher revenue in high risk investments (e.g. startup stocks).

We learned here that routine heavy TV viewing induces lower tolerance to the deferral of financial rewards that can be triggered by exposure to a shocking news clip. The duration of the effect initiated by the triggering deems further testing. If the manipulation film is shocking enough, the effect may possibly last longer, but without the triggering the capability of TV viewing to cast an effect on financial behavior is very limited.

We compared participants who were exposed to a shocking news-style clip with a control group that was not exposed to any film. While psychologists sometimes prefer to expose the control

group to a replacement stimulus, in cultivation experiments this policy is not optimal because the influence of any televised text is – to an extent – content dependent. It is practically impossible to find a "neutral film" (cf. Wilson et al., 1992).

All the participants of this study were students. Using such a sample is common and possibly inevitable in experiments (see Salas, Radovic, & Turnbull, 2012; Schaefer, Nils, Sanchez & Philippot, 2010) and experiments about interest rate decisions are not an exception of the "rule" (cf. Lahav et al., 2010). Furthermore, the use of an homogenous student sample enables one to rule out some artifacts (Cozby, 2006), but it also emphasizes the need to run replications with other types of samples and in other cultures. In particular, it makes sense to examine different age cohorts when earlier cohorts had experienced traumatic events that later generations did not experience. Nonetheless, we should not forget that the Israeli students we tested are relatively older and economically independent (for a student population). Therefore, questions about interest rate on loans should seem realistic to them (Pisa, 2012).

Future studies should look at mediating mechanisms that may explain the association between TV viewing and economic behaviors. For example, we may use the TPB rationale to examine how intentions to demand certain interest rates affect actual decisions about loans and mortgages (Ajzen & Fishbein, 2005).

The mechanism of TV resonance is another topic that demands further inspection. Does exposure to a threatening clip bring out the effect of heavy viewing, or is heavy viewing a precondition for the clip to have an effect? The second option, according to which watching the clip primes pre-existing cultivated orientations, is in line with the results of a number of cultivation experiments (Dossche, 2010).

Finally, in terms of format and content, other types of stimulus should also be considered. Perhaps, threatening information about the economy proper might be more influential on financial decisions than a news clip about security threat or other non-economic hazards.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211. doi: 10.1016/0749-5978(91)90020-T
- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). Mahwah, NJ: Erlbaum.
- Anderoni, J., & Vesterlund, L. (2001). Which is the fair sex? Gender differences in altruism. *Quarterly Journal of Economics*, 116, 293-312.
- Bahk, C. M. (2001). Perceived realism and role attractiveness in movie portrayals of alcohol drinking. *American Journal of Health Behavior*, 25, 433-446. doi:10.5993/AJHB.25.5.1
- Ben-Zion, U., Rapoport, A., & Yagil, J. (1989). Discount rates inferred from decisions: An experimental study. *Management Science*, 35, 270-284.
- Beullens, K., Roe, K., & Van den Bulck, J. (2011). The impact of adolescents' news and action movie viewing on risky driving behavior: A longitudinal study. *Human Communication Research*, 37, 488-508. doi: 10.1111/j.1468-2958.2011.01412.x
- Burroughs, J. E., Shrum, L. J., & Rindfleisch, A. (2002). Does television viewing promote materialism? Cultivating American perceptions of the good life. *Advances in Consumer Research*, 29, 442-443.
- Bruni, L., & Stanca, L. (2008). Watching alone: Relational goods, television and happiness, *Journal of Economic Behavior And Organization*. 65, 506-528. doi: 10.1016/j.jebo.2005.12.005
- Bryant, J., Carveth, R. A., & Brown, D. (1981). Television viewing and anxiety: An experimental examination. *Journal of Communication*, 31, 106-119.
- Cantor, J. (1991). Fright responses to mass media productions. In J. Bryant & D. Zilimann (Eds.), *Responding to the screen: Reception and reaction processes* (pp. 169-197). Mahwah, NJ: Lawrence Erlbaum.
- Cantor, J. (2009). Fright reactions to mass media. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (3rd ed., pp. 287-303). New York: Routledge.

- Carroll, C. D., Hall, R. E., & Zeldes, S. P. (1992). The buffer-stock theory of saving: Some macroeconomic evidence. *Brookings Papers on Economic Activity*, 2, 61-156.
- Caskey, J. P., & St. Laurent, S. (1994). The Susan B. Anthony dollar and the theory of coin/note substitutions. *Journal of Money, Credit and Banking*, 26, 495–510.
- Chang, C., DeVaney, S.A., & Chiremba, S. T. (2004). Determinants of subjective and objective risk tolerance. *Journal of Personal Finance*, 3, 53–67.
- Chaulk, B., Johnson, P. J., & Bulcroft, R. (2003). Effects of marriage and children on financial risk tolerance. A synthesis of family development and prospect theory. *Journal of Family and Economic Issues*, 24, 257–279. doi: 10.1023/A:1025495221519
- Cheng, S. T., Fung, H. H., & Chan, A. C. M. (2009). Self-perception and psychological well-being: The benefits of foreseeing a dark future. *Psychology and Aging*, 24, 623–633. doi: 10.1037/a0016410
- Chiricos, T., Eschholz, S., & Gertz, M. (1997). Crime, news and fear of crime: Toward an identification of audience effects. *Social Problems*, 44, 342-357. doi: 10.2307/3097181
- Cozby, P. C. (2006). *Methods in behavioral research*. NY: McGraw-Hill.
- Doob, A. N., & Macdonald, G. E. (1979). Television viewing and fear of victimization: Is the relationship causal? *Journal of Personality and Social Psychology*, 37, 170-179. doi: 10.1037/0022-3514.37.2.170
- Dossche, D. (2010). A Meta-Analysis of Cultivation Experiments: The Priming Effect on John and Jane, Who Are Watching Prime Time Television. *Paper presented at the annual meeting of the International Communication Association, Suntec Singapore International Convention & Exhibition Centre, Suntec City, Singapore*
- Eurodata TV. (2010) *One television year in the world*. Paris: Mediametrie.
- Eveland, W. P. (1997). Interactions and nonlinearity in mass communication: Connecting theory and methodology. *Journalism & Mass Communication Quarterly*, 74, 400-416. doi: 10.1177/107769909707400211

- Fishburn, P. C., & Rubinstein, A. (1982). Time preference. *International Economic Review*, 23, 677–693.
- Furnham, A., & Argyle, M. (1998). *The psychology of money*. London: Routledge.
- Frederick, S. (2006). Valuing future life and future lives: A framework for understanding discounting. *Journal of Economic Psychology*, 27, 667–680. doi:10.1016/j.joep.2006.05.007
- Frey, B. S., Benesch, C., & Stutzer, A. (2007). Does watching TV make us happy? *Journal of Economic Psychology* 28, 283–313. doi:10.1016/j.joep.2007.02.001
- Frey, B. S., & Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature*, 40, 402–435.
- Gali, J. (1990). Finite horizons, life-cycle savings, and time-series evidence on consumption. *Journal of Monetary Economics*, 26, 433–452.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1980). The “mainstreaming” of America: Violence profile no. 11. *Journal of Communication*, 30, 10–29.
- Gerbner, G., Gross, L., Morgan, M., Signorielli, N., & Shanahan, J. (2002). Growing up with television: Cultivation processes. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 43–67). Mahwah, NJ: Lawrence Erlbaum.
- Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: a meta-analysis of the attitude-behavior relation. *Psychological Bulletin*, 132, 778–822. doi: 10.1037/0033-2909.132.5.778
- Goidel, K., Procopio, S., Terrell, D., & Wu, H. D. (2010). Sources of economic news and economic expectations. *American Politics Research*, 38, 759–777. doi: 10.1177/1532673X09355671
- Grable, J. E. (2000). Financial risk tolerance and additional factors that affect risk taking in everyday money matters. *Journal of Business and Psychology*, 14, 625–630. doi: 10.1023/A:1022994314982
- Green, L., & Myerson, J. (2004). A discounting framework for choice with delayed and probabilistic reward. *Psychological Bulletin*, 130, 769–792. doi: 10.1037/0033-2909.130.5.769

- Griskevicius, V., Ackerman, J. A., Cantu, S. M., Delton, A. W., Robertson, T. E., Simpson, J. A., & Tybur, J. M. (2013). When the economy falters, do people spend or save? Responses to resource scarcity depend on childhood environment. *Psychological Science*, 24, 197–205. doi: 10.1177/0956797612451471
- Hawkins, R. P. & Pingree, S. (1982). Television's influence on social reality. In D. Pearl, L. Bouthilet, & J. Lazar (Eds.), *Television and behavior: Ten years of scientific progress and implications for the eighties* (pp. 224-247). Washington, DC: US Government Printing Office.
- Hawkins, R. P., Pingree, S., & Adler, I. (1987). Searching for cognitive processes in the cultivation effect adult and adolescent samples in the United States and Australia. *Human Communication Research*, 13, 553-557. doi: 10.1111/j.1468-2958.1987.tb00118.x
- Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods*, 41, 924-936. doi:10.3758/BRM.41.3.924
- Hetsroni, A., Sheaffer, Z., Ben-Zion, U., & Rosenboim, M. (2014). Economic recession: A cultivation study economic expectations, optimistic bias, and television viewing during. *Communication Research*, 41, 180-207. doi:10.1177/0093650212442373
- Hetsroni, A., & Sheaffer, Z., (2013). Assessing the tone of televised economic messages during economic recovery: Positive and negative, global and local. *Communications- European Journal of Communication Research*, 38, 147-165. doi: 10.1515/commun-2013-0009,
- Hewig, J., Hagemann, D., Seifert, J, Naumann, E., & Bartussek, D. (2005). The relation of cortical activity and personality in reinforced go-nogo paradigm. *Journal of Individual Differences*, 26, 86-99. doi: 10.1027/1614-0001.26.2.86
- Hiricos, T., Padegett, K., & Gertz, M. (2000). Fear, TV news and reality of crime. *Criminology*, 38, 755–786.

- Hsee, C. K., Yu, F., Zhang, J. & Zhang, Y. (2003). Medium maximization. *Journal of Consumer Research*, 30, 1-14. doi: 10.1086/374702
- John, D., & Lang, F. R. (2012). Adapting to unavoidable loss during adulthood: A thinking-aloud study with video vignettes. *Geropsych: Journal of Gerontopsychology and Geriatric Psychiatry*, 25, 73– 82. doi: 10.1024/1662-9647/a000056
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 313-327.
- Kidwell, B., Brinberg, D., & Turrisi, R. (2003). Determinants of money management behavior. *Journal of Applied Social Psychology*, 33, 1244-1260.
doi: 10.1111/j.1559-1816.2003.tb01948.x
- Kirby, K. N. (1997). Bidding on the future: Evidence against normative discounting of delayed rewards. *Journal of Experimental Psychology*, 126, 54-70. doi: 10.1037/0096-3445.126.1.54
- Kudryavtsev, A., Cohen, G., & Hon-Snir, S. (2013). Rational or intuitive: Are behavioral biases correlated across stock market investors? *Contemporary Economics*, 7, 31-53.
- Labat, A., & Block, W. E. (2012). Money does not grow on trees: An argument for usury. *Journal of Business Ethics*, 106, 383–387.
- Lahav, E., Ben-Zion, U., & Shavit, T. (2010). Subjective time discount rates among teenagers and adults: Evidence from Israel. *Journal of Socio-Economics*, 39, 458-465. doi: org/10.1016/j.socec.2010.02.012
- Layard, R. (2005). *Happiness: Lessons from a new science*. NY: Penguin Books.
- Lee, H. S. (2013). Predicting and understanding undergraduate students' intentions to gamble in a casino using an extended model of the theory of reasoned action and the theory of planned behavior. *Journal of Gambling Studies*, 29, 269-288. doi: 10.1007/s10899-012-9302-4
- Lee, C. J., & Andrade, E. B. (2011). Fear, social projection, and financial decision making. *Journal of Marketing Research*, 48, 121-129. doi: dx.doi.org/10.1509/jmkr.48.SPL.S121

- Lea, S.E. G., & Webley, P. (2006). Money as tool, money as drug: The biological psychology of a strong incentive. *Behavioral and Brain Sciences*, 29, 161–209. doi: 10.1017/S0140525X06009046
- Maner, J. K., Kenrick, D. T., Neuberg, S. L., Becker, D. V., Robertson, T., Hofer, B., & Schaller, M. (2005). Functional projection: How fundamental social motives can bias interpersonal perception. *Journal of Personality and Social Psychology*, 88, 63–78. doi: 10.1037/0022-3514.88.1.63
- Meijer, C. I. (2010). Democratizing journalism? Realizing the citizen's agenda. *Journalism Studies*, 11, 327- 342. doi: 10.1080/14616700903500256
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review*, 12, 133-143. doi: 10.5465/AMR.1987.4306502
- Minnebo, J. (2000). Fear of crime and television use: a uses and gratifications approach. *Communications: European Journal of Communication Research*, 25, 125-142.
- Morgan, M. (1984). Heavy television viewing and perceived quality of life. *Journalism Quarterly*, 61, 499-504.
- Morgan, M., & Shanahan, J. (2010). The state of cultivation. *Journal of Broadcasting & Electronic Media*, 54, 337-355. doi: 10.1080/08838151003735018
- Nabi, R. L., & Sullivan, J. L. (2001). Does television viewing relate to engagement in protective action against crime? A cultivation analysis from a theory of reasoned action perspective. *Communication Research*, 28, 802-825. doi: 10.1177/009365001028006004
- Jouini, E., & Napp, C. (2006). Heterogeneous beliefs and asset pricing in discrete time: An analysis of pessimism and doubt. *Journal of Economic Dynamics and Control*, 30, 1233-1260.
- Pisa (2012). *Literacy skills Pisa 2012: Results - students and money*. NY: OECD.
- Plous, S. (1993). *The psychology of judgment and decision making*. NY: Mcgraw-Hill.

- Potter, W. J. (1991), The linearity assumption in cultivation research. *Human Communication Research*, 17, 562–583. doi: 10.1111/j.1468-2958.1991.tb00244.x
- Richins, M. L. (1987). Media, materialism and human happiness. *Advances in Consumer Research*, 14, 352-356.
- Rachlin, H. & Jones, B. A. (2007). Social discounting and delay discounting. *Journal of Behavioral Decision Making*, 20, 1-15. doi: 10.1002/bdm.567
- Robinson, J. P., & Martin, S. (2008). What do happy people do? *Social Indicators Research*, 89, 565-571. doi: 10.1007/s11205-008-9296-6
- Roskos-Ewoldsen, D. R., Roskos-Ewoldsen, B., & Carpentier, F. R. D. (2002). Media priming: A synthesis. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 97–120). Mahwah, NJ: Lawrence Erlbaum.
- Roszkowski, M. J., & Grable, J. E. (2010). Gender differences in personal income and financial risk tolerance: How much of a connection? *Career Development Quarterly*, 58, 270-275. doi: 10.1002/j.2161-0045.2010.tb00192.x
- Rubin, A. M. (1984). Ritualized and instrumental TV viewing. *Journal of Communication*, 34(3), 67-77. doi: 10.1111/j.1460-2466.1984.tb02174.x
- Rubinstein, A. (2003). Economics and psychology? The case of hyperbolic discounting. *International Economic Review*, 44, 1207–1216. doi: 10.1111/1468-2354.t01-1-00106
- Salas, C. E., Radovic, D., & Turnbull, O. H. (2012). Inside- out: Comparing internally generated and externally generated basic emotions. *Emotion*, 12, 568-578. doi: 10.1037/a0025811
- Sanders, D., & Gavin, N. (2004). Television news, economic perceptions and political preferences in Britain, 1997-2001. *Journal of Politics*, 66, 1245-1266. doi: 10.1111/j.0022-3816.2004.00298.x
- Schaefer, A., Nils, F., Sanchez, X., & Philippot, P. (2010). Assessing the effectiveness of a large database of emotion-eliciting films: A new tool for emotion researchers. *Cognition and Emotion*, 24, 1153–1172. doi: 10.1080/02699930903274322

- Schulz, R., Bookwala, J., Knapp, J. E., Scheier, M., & Williamson, G. M. (1996). Pessimism, age, and cancer mortality. *Psychology and Aging, 11*, 304–309. doi: 10.1037/0882-7974.11.2.304
- Shanahan, J., & Morgan, M. (1999). *Television and its viewers: Cultivation theory and research*. Cambridge, UK: Cambridge University Press.
- Sheeran, P. (2002). Intention—behavior relations: A conceptual and empirical review. *European Review of Social Psychology, 12*, 1-36. doi:10.1080/14792772143000003
- Shrum, L. J., Burroughs, J. E., & Rindfleisch, A. (2004). A process model of consumer cultivation: The role of TV is a function of type of judgment. In L. J. Shrum (Ed.), *The psychology of entertainment: Blurring the lines between entertainment and persuasion* (pp. 177-192). Mahwah, NJ: Lawrence Erlbaum.
- Shrum, L. J., Lee, J., Burroughs, J. E., & Rindfleisch, A. (2011). An online process model of second - order cultivation effects: How television cultivates materialism and its consequences for life satisfaction. *Human Communication Research, 37*, 34-57. doi: 10.1111/j.1468-2958.2010.01392.x
- Shrun, L. J. (2007). Social cognition and cultivation. In D. R. Roskos-Ewoldsen & J. L. Monahan (Eds.), *Communication and social cognition: Theories and methods* (pp. 245-272). Mahwah, NJ, US: Lawrence Erlbaum.
- Soroka, S. N. (2006). Good news and bad news: Asymmetric responses to economic information. *Journal of Politics, 68*, 372-285. doi: 10.1111/j.1468-2508.2006.00413.x
- Sparks, G., Spirek, M., & Hodgson, K. (1993). Individual differences in arousability: Implications for understanding immediate and lingering emotional reactions to frightening mass media. *Communication Quarterly, 41*, 465-476. doi: 10.1080/01463379309369906
- Sung, J., & Hanna, S. (1996). Factors related to risk tolerance. *Financial Counseling and Planning, 7*, 11-20.
- Taylor, S. E., & Fiske, S. T. (1978). Salience, attention, and attribution: Top-of-the-head phenomena.

In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 11, pp. 249-288). NY: Academic Press.

- Taylor, L. D. (2005). Effects of visual and verbal sexual television content and perceived realism on attitudes and beliefs. *Journal of sex research*, 42, 130-137. doi: 10.1080/00224490509552266
- Thaler, R. (1981). Some empirical evidence on dynamic inconsistency. *Economic Letters*, 8, 201-207.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124-1131. doi: 10.1126/science.185.4157.1124
- Van de Venter, G., Michayluk, D., & Davey, G. (2012). A longitudinal study of financial risk tolerance. *Journal of Economic Psychology*, 33, 794-800.
- Ward, L.M. (2002). Does television exposure affect emerging adults' attitudes and assumptions about sexual relationships? Correlational and experimental confirmation. *Journal of Youth & Adolescence*, 31, 1-15. doi: 10.1023/A:1014068031532.
- Ward, L. M. (2002). Does television exposure affect emerging adults' attitudes and assumptions about sexual relationships? Correlational and experimental confirmation. *Journal of Youth and Adolescence*, 31, 1-15. doi:10.1023/A:1014068031532
- Weaver, J. B. (2003). Individual differences in television viewing motives. *Personality and Individual Differences*, 35, 1427-1437. doi: 10.1016/S0191-8869(02)00360-4
- Weitzer, R., & Kubrin, C. E. (2004). Breaking news: How local TV news and real-world conditions affect fear of crime. *Justice Quarterly*, 21, 497-520. doi: 10.1080/07418820400095881
- Wilson, M., & Daly, M. (2004). Do pretty women inspire men to discount the future? *Biology Letters*, 271, 177-79. doi: 10.1098/rsbl.2003.0134
- Wilson, B. J., Linz, D., Donnerstein, E., & Stipp, H. (1992). The impact of social issue television programming on attitudes toward rape. *Human Communication Research*, 19, 179-208. doi: 10.1111/j.1468-2958.1992.tb00299.x
- Winterhaider, B. (2007). Risk and decision making. In R. Dunbar & L. Barrett (Eds.). *Handbook of*

evolutionary psychology. Oxford, UK: Oxford University Press.

- Xiao, J., & Anderson, J. G. (1997). Hierarchical financial needs reflected by household financial asset shares. *Journal of Family and Economic Issues*, 18, 333-355. doi: 10.1023/A:1024991304216
- Witt, J. L. (1994). The gendered division of labor in parental caregiving: biology or socialization? *Journal of Women and Aging*, 6, 65-89. doi: 10.1300/J074v06n01_05
- Xiao, Z., Wang, D., & Liu, Y. (2009). Economic environment and personality: How do they Influence Investment decisions and regret? *Social Behavior and Personality: An International Journal*, 37, 1297-1304. doi: 10.2224/sbp.2009.37.10.1297
- Zaleskiewicz, T., Gasiorowska, A., Kesebir, P., Luszczynska, A., & Pyszczyński, T. (2013). Money and the fear of death: The symbolic power of money as an existential anxiety buffer. *Journal of Economic Psychology*, 36, 55-67. doi: 10.1016/j.joep.2013.02.008
- Zaller, J., & Feldman, S. (1992). A simple theory of survey response: Answering questions versus revealing preferences. *American Journal of Political Science*, 36, 579-616.
- Zhang, L. (2009). An exchange theory of money and self-esteem in decision making. *Review of General Psychology*, 13, 66-76. doi: 10.1037/a0014225