

UNCERTAINTY AND ORIENTATION TOWARDS ERRORS IN TIMES OF CRISIS. THE IMPORTANCE OF BUILDING CONFIDENCE, ENCOURAGING COLLECTIVE EFFICACY

Carmen Tabernero¹, Alicia Arenas², Esther Cuadrado¹ and Bárbara Luque¹

¹Universidad de Córdoba. ²Universidad de Sevilla

The current economic crisis is triggering a new scenario of uncertainty, which is affecting the organizational behavior of individuals and working teams. In contexts of uncertainty, organizational performance suffers a significant decline—workers are faced with the perceived threat of job loss, individuals distrust their organization and perceive that they must compete with their peers. This paper analyzes the effect of uncertainty on both performance and the affective states of workers, as well as the cognitive, affective and personality strategies (goals and error orientation) to cope with uncertainty as either learning opportunities or as situations to be avoided. Moreover, this paper explores gender differences in both coping styles in situations of uncertainty and the results of a training program based on error affect inoculation in which positive emotional responses were emphasized. Finally, we discuss the relevance of generating practices and experiences of team cooperation that build trust and promote collective efficacy in work teams.

Key words: *Uncertainty, Error orientation, Affect, Trust, Collective efficacy.*

La crisis económica desencadena un nuevo escenario de incertidumbre que incide sobre el comportamiento organizacional de individuos y equipos de trabajo. El rendimiento organizacional se deteriora en contextos de incertidumbre—ante la amenaza percibida de mantener el trabajo, los individuos muestran desconfianza con la organización y competitividad con sus iguales. El presente artículo analiza el efecto de la incertidumbre sobre el rendimiento y los estados afectivos de los trabajadores, así como las estrategias cognitivas, afectivas y de personalidad (orientación hacia los errores) para afrontar contextos de incertidumbre, bien como oportunidades para aprender o como situaciones a evitar. Igualmente se analizan las diferencias de género en los estilos de afrontamiento y los resultados de un programa de inoculación de afecto hacia los errores en el que se enfatizan las reacciones afectivas positivas. Por último, se discute la importancia de crear experiencias de cooperación en los equipos de trabajo que generen confianza y eficacia colectiva.

Palabras clave: *Incertidumbre, Orientación hacia los errores, Afecto, Confianza, Eficacia colectiva.*

The economic crisis has created a scenario of uncertainty that is affecting the organizational behavior reflected by individuals, teams and organizations. In the crisis, individuals work under the threat of the insecurity of maintaining their jobs, the distrust and competition with members of their team in the event of a possible layoff, uncertainty about the future of the organization or the evaluation of the attractiveness of their characteristics of employability in the labor market (Tabernero, Briones & Arenas, 2011). Rosen, Ivanova and Knauper (2014) argue that maintaining a state of uncertainty implies distrust regarding the occurrence of an expected outcome, which affects the motivation to achieve a goal. It has also been shown that living with high levels of uncertainty is

associated with a higher likelihood of negative physiological and psychological consequences of stress and greater anxiety, depression and lower quality of life (Arce, 2012; Stuckler & Basu, 2013).

Many decisions are made under stress—choosing the correct answer on a test or an emergency exit—and many of these decision-making situations generate stressful solutions in themselves—stock exchange dealers who make decisions that put other people's money at risk (Starcke & Brand, 2012). Thus, stress and decision-making are inextricably linked, both at the behavioral level and the neuronal level. Being exposed to stress and its trigger reactions influences the quality of decisions and can have a negative effect on health. And if the context in which decisions are made makes us feel excluded, the decisions can be irrational and even self-destructive (Briones, Tabernero & Arenas, 2007). For this reason, a number of articles have been appearing in the news related to the cognitive and affective variables that determine decision-making in crisis. Recently, the newspaper *El País* (2014) presented a paper entitled "Making business decisions without being carried away by emotions" and the editorial *Conecta* (2013) published a book entitled "Your money and your brain. Why we make wrong decisions

Correspondence: Carmen Tabernero. Universidad de Córdoba. Departamento de Psicología. Avenida San Alberto Magno, s/n. 14071 Córdoba. España. Email: carmen.tabernero@uco.es

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and how to avoid them according to neuro-economics". Both articles explain that decision-making is not as rational as it may seem initially. The unconscious may be a good indicator for making decisions when we are under high levels of stress (Gordillo et al., 2010), since being subjected to high levels of uncertainty intensifies the affective reactions that moderate the processing of information for making decisions (Bar-Anan, Wilson & Gilbert, 2009).

But we do not all respond equally to uncertainty. While some people see uncertainty as a challenge that they are especially able to cope with, for others uncertainty is a threat to be avoided (Szeto & Sorrentino, 2009). In response to the economic crisis, continuous innovation and market risks, the challenge of understanding and facilitating an adaptive coping style is of great interest. This article will discuss some recent results on the context and styles of coping that facilitate decision-making and optimum organizational behavior in uncertain situations.

MAKING RISKY DECISIONS IN A CONTEXT OF UNCERTAINTY

How do people face up to making risky decisions? And what variables influence them to opt for the most conservative solutions or those of the highest risk? Why do some people choose to continue working in simple and stable situations while others choose to face complex situations that pose a greater risk? Analyzing what variables predict the choice of a level of task difficulty, Taberero and Wood (2009a) show that people who direct their goals to error avoidance are most likely to choose to work with low levels of difficulty, in contexts where the situations involve less risk of error but which also provide fewer opportunities to learn new things. Conversely, people with lower orientation towards the avoidance of evaluation face up to complex and uncertain situations without worrying about the potential errors or failures these may involve.

Previous research demonstrated the importance of having beliefs in one's ability as an acquirable competency, which can be developed with experience. This acquirable belief in one's own capability, which involves seeing errors as feedback that facilitates learning and not as feedback that is evaluative of the innate abilities of the individual, would be necessary to obtain good results in complex and innovative situations. Thus, beliefs about the ability to learn interact with the context or culture towards learning (Taberero & Wood, 1999). Faced with complex and innovative situations, individuals who hold beliefs toward acquisition and work in contexts of acquisition develop better self-regulatory mechanisms (self-efficacy, goals, affective states, etc.), analytic strategies (effort, persistence, etc.) and performance.

We based our research on a social cognitive theoretical framework (Mischel & Shoda, 1995), in which the situational and personal characteristics interact, activating the cognitive-affective processing system or motivational state (judgments of

self-efficacy, goals, and affective states). The motivational state triggered by the interaction between situational and personal characteristics is what ultimately determines the strategies of analysis and behavior (Figure 1).

Faced with contexts of change and uncertainty, it is important to analyze the *error orientation* or the *error culture* that is maintained in the work context (Putz, Schilling, Kluge & Stangenberg, 2013). While some people, teams or organizations demonstrate a clear focus on error avoidance faced with the risk of making a mistake or losing, others direct their goals to meet the challenges and adversity that the new changing contexts have in store for them. Goal orientation acts as a frame of mind with which people interpret and respond to new situations that enable both successes and failures. Working in contexts of uncertainty negatively influences self-regulatory mechanisms (self-efficacy, goals and emotional state) and short-term performance (Arenas, Taberero & Briones, 2006). However, the affective state and positive error orientation ensure better long-term performance.

DIFFERENCES BETWEEN MEN AND WOMEN IN FACING UNCERTAIN SITUATIONS

With regards to the research on gender differences and decision-making, Arenas, Taberero and Briones (2011) find that, in a situation of uncertainty, women show a tendency to communicate errors and are less concerned with demonstrating competence to others; however, they feel less capable to cope with the difficulties, more distressed and they set themselves lower targets. Similarly, Nguyen and Noussair (2013) suggest that women show greater risk aversion than men. Also, Molina and Fernández-Abascal (2012) found that women are less optimistic in situations fraught with negative emotions, presenting a greater recognition of words with negative emotional valence. In this regard, it has been suggested that women have a more ruminative thinking style that would trigger a memory pattern that tends to maintain and amplify the negative emotions.

The different pattern of neuronal activation in men and women in dealing with depression and anxiety could explain the differences in this style of ruminative thought. Recently, Ingallhalikar et al. (2013) found differences in neuronal connectivity according to which men have greater ease of connectivity between perception and coordinated action, whereas women have greater connectivity in the prefrontal area between the two hemispheres, which facilitates the processing of information, social cognition and analytical capacity.

One theory that explains the psychological differences between men and women is Social Learning Theory, in which perceived self-efficacy—a cognitive component referring to the belief in one's own ability to perform a particular task—plays a central role, which could be relevant in explaining some differential effects between the sexes. Thus, even when there is

no difference in maths performance, there is in perceived self-efficacy for mathematics (Else-Quest, Hyde & Linn, 2010). Self-efficacy is important because it influences people's decisions about whether to perform a challenging task, and as such it is a predictor variable of behavior.

In view of this, the hypothesis that psychological differences between the sexes should be lower in countries with greater gender equality than in countries with greater inequality has been tested. Using measures of gender equality in the countries to predict the distance in mathematics performance, a transnational meta-analysis showed that the differences between men and women in self-efficacy and anxiety with regards to mathematics are greater than the differences in actual performance (Else-Quest et al., 2010). Although participants expressed an orientation toward learning that was significantly higher in comparison with performance orientation and showing greater competency in front of others, the gender variable only correlates with the tendency towards results, with men aiming more at testing their own ability. Thus, men value their competence and capability to a greater degree than women, and women value effort and motivation more (Arenas et al., 2011). Longitudinal studies have shown that self-efficacy for math and verbal skills determine the choice of career and consequently, professional development (Miller & Halpern, 2014). In our context, Luque (2008) and Luque and Freixas (2013) analyze career paths with emphasis on the differential socialization of men and women, and they affirm that the professional and life paths of women and men are marked by different socialization of gender roles.

Another aspect is the relationship and the effect of the gender variable on self-regulatory mechanisms. Women exhibit lower judgments of task efficacy and set lower goals before and after carrying out tasks. However, they show a more positive attitude toward communicating errors, in spite of the fact that they have less self-efficacy to cope with difficulties. This calls for the need to investigate how demographic variables influence motivational processes and work-performance results. It seems necessary to point out that recently the data have shown a change in these differences, with women being the ones that present higher levels of self-efficacy (Wang, Eccles & Kenny, 2013).

Moreover, analyzing the differences in goal orientation, studies that have evaluated the relationship between goal orientation with age and sex found no significant bivariate relationships. It could be interesting to explore the relationship between the dimensions of goal orientation with sex and age, as these have been proposed as moderators of the relationship of goal orientation-performance on tasks where feedback of failure and errors are common.

Also relevant is the relationship found between gender and the tendency to communicate errors, since we do not know studies that have explored the differences in the error orientation of men and women (Arenas et al., 2011). It would be interesting to

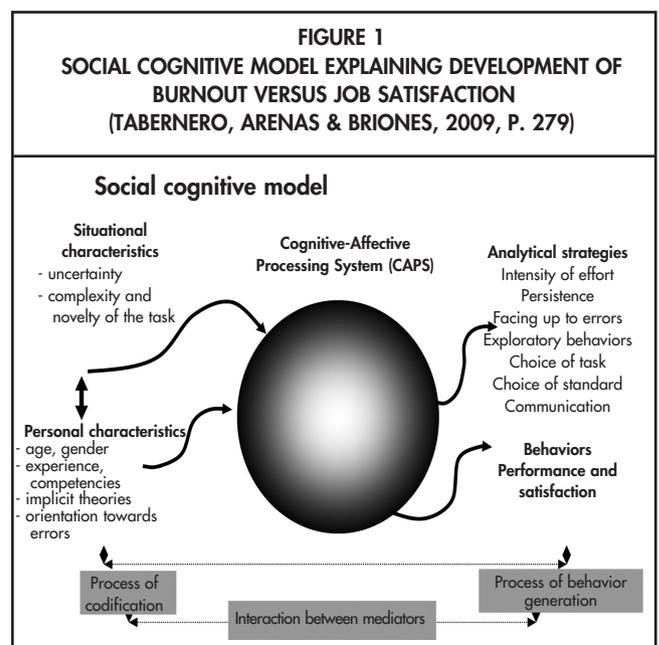
identify how these issues are handled in the workplace, given the massive incorporation of women into paid work and increasingly into positions of responsibility.

The managerial skills for addressing business challenges include leadership skills, teamwork, creativity, decision-making, change management, negotiation skills, self-learning and personal development and mastery of communication techniques, skills that are often represented more in women than in men, which has been termed 'transformational leadership'. In a constantly changing environment where innovation and risk are valued, it must be remembered that masculine culture remains dominant in labor organizations in many countries, including Spain. The models and criteria used to assess the competence and requirements for managerial positions remain linked to the male stereotype (authority, decision, independent judgment, strength, and appetite for risk).

When accessing intermediate and high level positions, women often adopt traditional male practices. This inequality in the requirements involves a process of exclusion which makes it difficult, if not impossible, for women to access resources and valuable positions within the organization. This exclusion results in the gender system that still prevails in our societies continuing to be imposed in the workplace. Women's behavior is still assessed based on existing gender stereotypes, under which lies the aforementioned association between power and masculinity.

EMOTIONS AND MAKING RISKY DECISIONS IN CONTEXTS OF UNCERTAINTY. ERROR AFFECT INOCULATION

In recent decades there has been growing interest in how emotional states affect risk decisions (Phelps, 2014). Theoretical models suggest that the affective state functions as a priming



mechanism that influences the perceptions of risk and the intentions of the decision-maker (Forgas, 1995). Risk has been considered as a multidimensional construct composed of the dimensions of uncertainty, gains against losses, contextual framework and personal involvement.

One of the most influential theories of decision-making under uncertainty is the Expectancy Theory of Kahneman and Tversky (1982), and most of the evidence comes from laboratory experiments where subjects are faced with choices. However, research on the emotions related to decision-making is fairly recent (Kugler, Connolly & Ordóñez, 2012).

According to Williams and Voon (1999), with a positive affective state we recall more positive elements and are more optimistic about the possible outcomes and consequences of our risk decisions; on the contrary, with a negative affective state we remember and we focus more on the negative aspects, emphasizing the negative aspects of the risk decisions. However, an affective state of greater happiness could lead to less risk-seeking in situations where a significant loss could reduce the positive state.

In this sense, people who tend to show a positive affective state and see the world more favorably perceive risk situations as less uncertain and are less likely to believe that the result of their risky decisions will have personal consequences for them. However, they do not seek risk (Williams, Zainuba & Jackson, 2003). Additionally, people who tend to have a negative view of themselves and of the world are most likely to perceive the benefits associated with risk situations as being smaller. Also, they do not seek the riskiest courses of action. Research suggests that the affective state influences both how risk is perceived and the probability of seeking it (Williams & Voon, 1999).

The influence of positive emotions can lead to behavior of seeking or avoiding risk depending on the context. Thus, the need to achieve results could lead to focusing on a superficial level of processing and the use of heuristic shortcuts, increasing the influence of optimistic sources of information, even when the quality of the evidence fails to guarantee this influence (Blanchette & Richards, 2010).

On the other hand, negative emotions cause a narrowing of attention (Pêcher, Lemerrier & Cellier, 2009) and can increase the speed of decision-making, even with a more systematic acquisition of information, but also increasing the possibility of errors in atypical situations or when the search is biased towards sources that can reduce the negative emotion. Thus, Xie, Wang, Zhang, Li and Yu (2011) found that negative emotions can lead to pessimistic predictions and increased perception of risk. But this is more related to sadness or fear than anger. Anger can lead to a higher risk tolerance and even to the choice of destructive behaviors. Anger tends to increase the speed of decisions (Pêcher et al., 2009) and the certainty of judgments, while sadness decreases these.

In the same vein, Lerner and Tiedens (2006) demonstrated

experimentally the different outcomes for angry individuals—who tended to make optimistic risk assessments and risk-seeking choices (emphasizing certainty and individual control)—and fearful individuals—who made pessimistic assessments and risk aversion choices (emphasizing uncertainty and situational control).

Raghunathan and Pham (1999) report similar divergent effects of anxiety and sadness. Anxious individuals showed greater risk aversion and sad individuals presented more risk-seeking. Raghunathan, Pham and Corfman (2006) extended these findings to a wider range of emotions. In their review on emotions and risk-taking, Pham (2007) reaches similar conclusions and suggests a connection between negative emotions and risk: these emotions tend to lead to reduced self-control. In turn, one might expect that the loss of self-control would lead to greater risk-taking. However, the effects of negative emotions seem to depend on complex interactions between the goals activated by the emotional state and the nature of the risks to be assumed (Pham, 2007, p. 161).

Uncertainty is therefore a potent stressor. However, research has focused on situational manipulations of predictability, without considering the personal factors that may be involved in responses to uncertainty (Lousinha & Guarino, 2010), such as tolerance of ambiguity, which has been measured in various questionnaires (Furnham, 1995) in which the cognitive components of ambiguity are measured, but not the emotional.

The dimension of *Cognitive Uncertainty* measures the tendency to plan, and seek solutions and information on the uncertain event as a way of dealing with it, a tendency that could be seen as an adaptive response style to uncertain events. The dimension of *Emotional Uncertainty* measures the tendency to experience negative emotions of fear, depression and helplessness in dealing with uncertain experiences, which when expressed in an intense way can be considered a maladaptive and dysfunctional reaction. Finally, the dimension of *Desire for Change* measures the tendency to deal with change as an experience of challenge, opportunities and possible gratification, which together can also be considered to be a functional reaction.

In this sense, personality traits related to emotions are also important. Trait fear and trait anxiety focus attention on the detection and processing of threatening stimuli to the detriment of more optimistic sources. Trait anxiety is linked with failure and focus on the selection of protective behaviors, leading to conservative decisions. Blanchette and Richards (2010) add that anxious individuals perceive higher risk and greater cost, leading to risk aversion.

The study by Rata and Baucells Alibés (2006) contributes to this debate by investigating the behavior of risk-taking in real-world decisions. The methodology chosen was to design a survey that produces certain aspects of real decisions. The frame was proposed as one of the main factors influencing the propensity to take risks. Closely related to the frame is the status

quo or default option. The aim of the study by Rata and Baucells Alibés (2006) was to test whether the effects of framing and status quo are replicated in environments where these factors are not experimentally manipulated.

Moreover, Navarro, Quijano, Berger and Meneses (2011) argue that when the tasks have medium or high levels of uncertainty teamwork is necessary, while it is not in tasks with low uncertainty (tasks that are clear, repetitive, compatible with each other and have little variety). Groups have the necessary resources to cope with diverse, ambiguous and incompatible new tasks, as well as a greater amount and variety of knowledge and skills for coping with various tasks. The social support generated in groups would be a key aspect in handling the anxiety generated by ambiguous tasks. Also, group members generate shared meanings that would help them to cope with new situations. Beckmann, Wood, Minbashian and Tabertero (2012) show how teams that share the same goal orientation experience an increase in their motivation (goals, collective efficacy and emotional state) which promotes better decision-making and better performance than teams that do not share the same goal orientation.

Given these results, we wondered whether it would be possible to inoculate individuals with positive affect against the risk of making mistakes. Thus, in an investigation, we created a condition of *error affect inoculation* which emphasized the positive affective reactions to errors that are triggered when making decisions (Tabertero & Wood, 2009b). Following the approach of Forgas (1995) on the infusion of affect and the approach of DeBowski, Wood and Bandura (2001) on the instructions based on the search for information in making complex decisions, we created a program of error affect inoculation. We generated a work context in which each time a person made a mistake, it was highlighted and analyzed. In this sense, Arenas (2007) conducted her PhD thesis research focusing on the analysis of the effects of sustaining a culture of promotion versus promotion of errors. Training on error affect inoculation promotes information sharing by making the initial positions more flexible and improving decisions.

BOOSTING COLLECTIVE CONFIDENCE AND EFFICACY FAVOURS PROSOCIAL BEHAVIOR

The current economic crisis is creating working conditions in which individuals perceive that resources are limited, which in turn leads them to develop more and more selfish behavior, in order to protect themselves from the adverse consequences of the crisis. This scenario takes us back to the research on social dilemmas, which represents situations in which it is necessary to prioritize between personal or collective interests (Parks, Joireman & Van Lange, 2013).

Prosocial behavior is essential for creating prosperous societies, even more so in situations of interdependence, as is the case in times of crisis and uncertainty (Aumann & Schelling,

2005). However, cooperating means leaving aside self-interests to preserve the interests of others (Tomasello & Vaish, 2012). Nevertheless, in situations of interdependence that involve certain risk and uncertainty, personal gain tends to be maximized without taking into consideration the potentially disastrous consequences that this behavior can have on the community (Van Lange, Joireman, Park & Van Dijk, 2013), especially when a group must share a limited number of resources, as is the case in situations of crisis.

Even knowing that cooperation can be beneficial to the community, there is a tendency to act self-sufficiently (Weber, Kopelman, & Messick, 2004). Thus, in the current situation of global crisis, and taking into account the resulting scarcity of resources, there is a pressing need for citizen cooperation, assistance and solidarity. As a result of the crisis, more and more people are experiencing situations of exclusion, "which result in job loss, eviction and even complete marginalization". The promotion, within individuals and the community, of prosocial behavior promotes the development of social networks that facilitate coexistence and well-being in healthy societies. All of this leads us to emphasize the importance of analyzing, in the context of crisis, the motivational determinants of prosocial behavior.

In this sense, Cuadrado, Tabertero and Steinel (under review a, under review b) have provided a basis for the Theory of Social Reconnection (DeWall & Richman, 2011), showing that excluded individuals perform more prosocial behaviors than included ones as long as they perceive there is a possibility of reconnecting with the group, these prosocial behaviors facilitating their re-acceptance. From there comes the need to promote in excluded individuals the firm belief of the possibility to reconnect with society.

Furthermore, Cuadrado et al. (under review, b) have shown that, in situations of exclusion, while levels of trust in others and collective prosocial efficacy are low, anger levels are high. These results are particularly relevant when we consider that these three variables in turn determine prosocial behavior; with higher levels of trust and collective prosocial efficacy and lower levels of anger, the levels of prosocial behavior are higher, both for individuals that are included and for the excluded (Cuadrado et al., in review, b). Thus, given the importance of promoting cooperative contexts in crisis situations for the prosperity of society, it seems relevant to achieve the implementation of practices that promote the growth of trust in others and perceptions of collective prosocial efficacy and, in turn, to reduce the levels of anger towards the urgent processes of exclusion that may appear in the thick of the crisis. Moreover, this increased trust in others may in turn affect the openness to think that there is a possibility of being re-included after exclusion processes, which favors more prosocial behaviors, which in turn have a positive impact on society and at the same time, on the isolated individual.

Recently, Cuadrado, Tabernero, Garcia and Seibert (under review) showed how in situations of cooperation individuals use less selfish strategies regarding the use of limited resources, which in turn promotes a greater individual and group benefits, as suggested by Barker, Barclay and Reeve (2012). Thus, confidence in others acts as a moderator of the relationship between prosocial tendency and the use of less competitive strategies (Cuadrado et al., under review c). So, it seems relevant in crisis situations to encourage cooperation among citizens to promote individual and collective benefits, and to facilitate an exit route from the crisis. In turn, the promotion of social activities that encourage individuals to trust each other seems paramount to favor more cooperative strategies in situations of scarce resources and also greater benefits to help overcome the crisis.

Finally, in another study Tabernero, Arenas and Briones (2007) have shown how individuals in groups immersed in a culture of cooperation and displaying high levels of perceived group self-efficacy used more cooperative coping strategies. The previous experience of the group seems essential for the type of strategy employed. Therefore, given that individuals tend to act self-sufficiently due to a lack of framework of references (Tabernero et al., 2007), we deem it relevant to provide them with cooperative references, to facilitate experiences of cooperation, encouraging them to act in accordance with these experiences. In addition, these previous experiences in turn would enable the generation of judgments of perceived group efficacy in individuals, providing them with the confidence that their group will be able to resolve the situation, and also encouraging more cooperative behavior (Tabernero et al., 2007) in the crisis situation, which will result in greater benefits for society as a whole.

CONCLUSION

Uncertainty in the employment context activates the emotional states that affect organizational performance, both individually and in teams. We analyzed the main factors that interact with the uncertainty effects associated with the economic crisis: *cognitive factors* such as goal orientation, which determine how errors are communicated and accepted in the organization; *sociodemographic factors* that explain why men and women respond differently to uncertainty; *organizational factors* that explain why a positive culture towards learning and towards the promotion of errors is able to cope more successfully, innovatively and creatively with uncertainty in the work context; and *sociocultural factors* toward prosociality, which facilitate that, in situations of scarcity and uncertainty, individuals direct their goals to collective benefits by developing high levels of trust and collective efficacy. These four factors enable the development of training programs to empower organizations to successfully face the uncertainty that is generated in situations of economic crisis.

REFERENCES

- Arce, R. S. A. (2012). Factores organizacionales causantes del estrés en el trabajo y estrategias para afrontarlo [Organizational factors that cause stress at work and strategies for coping with it]. *Revista Venezolana de Gerencia*, 17(60), 611-634.
- Arenas, A. (2007). *Autorregulación y afrontamiento del error en tareas complejas. Contextos de promoción vs prevención [Self-regulation and coping with errors in complex tasks. Contexts of promotion vs. prevention]*. PhD thesis. Universidad de Salamanca, Salamanca.
- Arenas, A., Tabernero, C. & Briones, E. (2006). Effect of goal orientation, error orientation and self-efficacy on performance under uncertain condition. *Social Behavior and Personality*, 34(5), 569-586.
- Arenas, A., Tabernero, C. & Briones, E. (2011). ¿Qué determina el desempeño en la toma de decisiones de hombres y mujeres? [What determines performance in decision-making in men and women?] *Revista de Psicología del Trabajo y de las Organizaciones*, 27(1), 55-66.
- Aumann, R. & Schelling, T. (2005). Robert Aumann's and Thomas Schilling's contributions to game theory: Analyses of conflict and cooperation. *Advanced information on the Bank of Sweden Prize in Economic Science in Memory of Alfred Nobel*, 10 October, Stockholm, Sweden.
- Bar-Anan, Y., Wilson, T. D. & Gilbert, D. T. (2009). The feeling of uncertainty intensifies affective reactions. *Emotion*, 9(1), 123.
- Barker, J. L., Barclay, P. & Reeve, H. K. (2012). Within-group competition reduces cooperation and payoffs in human groups. *Behavioral Ecology*, 23(4), 735-741.
- Beckmann, N., Wood, R. E., Minbashian, A. & Tabernero, C. (2012). Small group learning: Do group members' implicit theories of ability make a difference? *Learning and Individual Differences*, 22(5), 624-631.
- Blanchette, I. & Richards, A. (2010). The influence of affect on higher-level cognition: A review of research on interpretation, judgment, decision making and reasoning. *Cognition & Emotion*, 24(4), 561-595.
- Briones, E., Tabernero, C. & Arenas, A. (2007). Effects of disposition and self-regulation on self-defeating behavior. *The Journal of Social Psychology*, 147(6), 657-680.
- Cuadrado, E., Tabernero, C. & Steinel, W. (under review a). Motivational determinants of prosocial behavior: What do included, hopeful excluded, and hopeless excluded individuals need to behave prosocially?
- Cuadrado, E., Tabernero, C. & Steinel, W. (under review b). Motivational determinants of prosocial behavior under inclusion and exclusion conditions. Why and when do we behave prosocially?
- Cuadrado, E., Tabernero, C., García, R. & Seibert, J. (under review). Compete or cooperate for common-pool resources?



- Mediating and moderating roles in the water use strategies under competition and cooperation conditions.
- DeBowski, S., Wood, R. E. & Bandura, A. (2001). Impact of guided exploration and enactive exploration on self-regulatory mechanisms and information acquisition through electronic search. *Journal of Applied Psychology*, 86(6), 1129-1141.
- DeWall, C. N. & Richman, S. B. (2011). Social exclusion and the desire to reconnect. *Social and Personality Psychology Compass*, 5(11), 919-932.
- Else-Quest, N. M., Hyde, J. S. & Linn, M. C. (2010). Cross-national patterns of gender differences in mathematics: a meta-analysis. *Psychological Bulletin*, 136(1), 103-127.
- Forgas, J. P. (1995). Mood and judgment: the affect infusion model (AIM). *Psychological Bulletin*, 117(1), 39-66.
- Furnham, A. (1995). Tolerance of ambiguity: a review of the concept, its measurement and applications. *Current Psychology: developmental, learning, personality, social*, 14, 179-199.
- Gordillo, F., Salvador, J., Arana, J. M., Mestas, L., Meilán, J. J. G., Carro, J. & Pérez, E. (2010). Estudio de la toma de decisiones en una variante de la Iowa Gambling Task [Study of decision-making in a variant of the Iowa Gambling Task]. *REME (Revista Electrónica de Motivación y Emoción)*, 13(34), 7.
- Ingalhalikar, M., Smith, A., Parker, D., Satterthwaite, T. D., Elliott, M. A., Ruparel, K. & Verma, R. (2013). Sex differences in the structural connectome of the human brain. *Proceedings of the National Academy of Sciences*, 201316909.
- Kahneman, D. & Tversky, A. (1982). Variants of uncertainty. *Cognition*, 11(2), 143-157.
- Kugler, T., Connolly, T. & Ordóñez, L. D. (2012). Emotion, decision, and risk: Betting on gambles versus betting on people. *Journal of Behavioral Decision Making*, 25(2), 123-134.
- Lerner J.S. & Tiedens L.Z. (2006). Portrait of the Angry Decision Maker: How Appraisal Tendencies Shape Anger's Influence on Cognition. *Journal of Behavioral Decision Making*, 19, 115-137
- Lousinha, A. & Guarino, L. (2010). Adaptación hispana y validación de la escala de respuesta a la incertidumbre [Spanish adaptation and validation of the scale of response to uncertainty]. *Pensamiento Psicológico*, 8(15), 89-100.
- Luque, B. (2008). El itinerario profesional de las mujeres jóvenes: una carrera de obstáculos [The career path for young women: an obstacle course]. *Anuario de Psicología*, 39(1), 101-107.
- Luque, B. & Freixas, A. (2013). *Itinerarios vitales y profesionales de mujeres y hombres. Análisis desde una perspectiva de género [Life and career paths of women and men. Analysis from a gender perspective]*. Editorial Académica Española: Madrid, España.
- Miller, D. I. & Halpern, D. F. (2014). The new science of cognitive sex differences. *Trends in cognitive sciences*, 18(1), 37-45.
- Mischel, W. & Shoda, Y. (1995). A cognitive-affective system theory of personality: reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102(2), 246-268.
- Molina, V. B. B. & Fernández-Abascal, E. G. (2012). ¿Es la memoria del optimista menos influenciada por las emociones negativas? [Is the memory of the optimist less easily influenced by negative emotions?] *Psicothema*, 24(2), 199-204.
- Navarro, J., de Quijano, S. D., Berger, R. & Meneses, R. (2011). Grupos en las organizaciones: herramienta básica para gestionar la incertidumbre y ambigüedad crecientes [Groups in organizations: a basic tool for managing the increasing uncertainty and ambiguity]. *Papeles del Psicólogo*, 32(1), 17-28.
- Nguyen, Y. & Noussair, C. N. (2013). *Risk aversion and emotions*. Discussion Paper 2013-041, Tilburg University, Center for Economic Research.
- Parks, C. D., Joireman, J. & Van Lange, P. A. M. (2013). Cooperation, trust, and antagonism. How public Goods are promoted. *Psychological Science in the Public Interest*, 14(3), 119-165.
- Pêcher, C., Lemerrier, C. & Cellier, J. M. (2009). Emotions drive attention: Effects on driver's behaviour. *Safety Science*, 47(9), 1254-1259.
- Pham, M. T. (2007). Emotion and rationality: A critical review and interpretation of empirical evidence. *Review of General Psychology*, 11, 155-178.
- Phelps, E. A. (2014). Emotion and decision making. *Annual Review of Neuroscience*, 37(1).
- Putz, D., Schilling, J., Kluge, A. & Stangenberg, C. (2013). Measuring organizational learning from errors: Development and validation of an integrated model and questionnaire. *Management Learning*, 44(5), 511-536.
- Raghunathan, R. & Pham, M. T. (1999). All negative moods are not equal: Motivational influences of anxiety and sadness on decision making. *Organizational Behavior and Human Decision Processes*, 79, 56-77.
- Raghunathan, R., Pham, M. T. & Corfman, K. P. (2006). Informational properties of anxiety and sadness, and displaced coping. *Journal of Consumer Research*, 32(4), 596-601.
- Rata, C. & Baucells Alibes, M. (2006). *A Survey Study of Factors Influencing Risk Taking Behavior in Real World Decisions under Uncertainty* (No. 201033), Bilbao, Spain: Fundación BBVA.
- Rosen, N. O., Ivanova, E. & Knäuper, B. (2014). Differentiating intolerance of uncertainty from three related but distinct constructs. *Anxiety, Stress & Coping*, 27(1), 55-73.



- Starcke, K. & Brand, M. (2012). Decision making under stress: a selective review. *Neuroscience & Biobehavioral Reviews*, 36(4), 1228-1248.
- Stuckler, D. & Basu, S. (2013). *Por qué la austeridad mata. El coste humano de las políticas de recorte [Why austerity kills. The human cost of the policies of cuts]*. Santillana Ediciones.
- Szeto, A. C. & Sorrentino, R. M. (2009). Uncertainty Orientation: Myths, Truths, and the Interface of motivation and cognition. In R. Arkin, K. Oleson, & P. Carrol (Eds.), *Handbook of the Uncertain Self* (pp. 101-121). New York: Psychological Press.
- Tabernero, C. & Wood, R. E. (1999). Implicit theories versus the social construal of ability in self-regulation and performance on a complex task. *Organizational Behavior and Human Decision Processes*, 78(2), 104-127.
- Tabernero, C. & Wood, R. E. (2009a). Interaction between self-efficacy and initial performance in predicting the complexity of task chosen. *Psychological Reports*, 105(3F), 1167-1180.
- Tabernero, C. & Wood, R. E. (2009b). Error affect inoculation for a complex decision-making task. *Psicothema*, 21(2), 183-190.
- Tabernero, C., Arenas, A. & Briones, E. (2007). Experiencia previa y eficacia grupal percibida ante dilemas sociales [Previous experience and perceived group efficacy in the face of social dilemmas]. *Psicología*, 21(1), 83-105.
- Tabernero, C., Arenas, A. & Briones, E. (2009). Self-efficacy training programs to cope with highly demanding work situations and prevent burnout. In A. Antoniou, C. Cooper, G. Chrousos, C. Spielberger, & M. Eysenck (Eds.), *Handbook of Managerial Behavior and Occupational Health* (pp. 278-291). Edward Elgar (UK).
- Tabernero, C., Briones, E. & Arenas, A. (2011). Empleabilidad en jóvenes [Employability of Young people]. In E. Agulló, *Nuevas formas de organización del trabajo y la empleabilidad [New forms of work organization and employability]* (pp. 109-134). Universidad de Oviedo.
- Tabernero, C., Chambel, M. J., Cural, L. & Arana, J. M. (2009). The role of task-oriented versus relationship-oriented leadership on normative contract and group performance. *Social Behavior and Personality: an international journal*, 37(10), 1391-1404.
- Tomasello, M. & Vaish, A. (2013). Origins of human cooperation and morality. *Annual Review of Psychology*, 64, 231-255.
- Tsai M.H. & Young M.J. (2010). Anger, fear, and escalation of commitment. *Cognition & Emotion*, 24(6), 962-973.
- Van Lange, P. A. M., Joireman, J., Park, C. D. & Van Dijk, E. (2013). The psychology of social dilemmas: A review. *Organizational Behavior and Human Decision Processes*, 120(2), 125-141.
- Wang, M. T., Eccles, J. S. & Kenny, S. (2013). Not Lack of Ability but More Choice Individual and Gender Differences in Choice of Careers in Science, Technology, Engineering, and Mathematics. *Psychological Science*, 24(5), 770-775.
- Weber, J. M., Kopelman, S. & Messick, D. M. (2004). Conceptual review of decision making in social dilemmas: Applying a logic of appropriateness. *Personality and Social Psychology Review*, 8(3), 281-307.
- Williams, S. & Voon, Y. W. W. (1999). The effects of mood on managerial risk perceptions: Exploring affect and the dimensions of risk. *The Journal of Social Psychology*, 139(3), 268-287.
- Williams, S., Zainuba, M. & Jackson, R. (2003). Affective influences on risk perceptions and risk intention. *Journal of Managerial Psychology*, 18(2), 126-137.
- Wu, G., Zhang, J. & González, R. (2004). Decision under Risk. In D. J. Koehler & N. Harvey (eds.), *Handbook of Judgment and Decision Making* (pp. 399-423), Oxford: Blackwell.
- Xie, X. F., Wang, M., Zhang, R. G., Li, J. & Yu, Q. Y. (2011). The role of emotions in risk communication. *Risk Analysis*, 31(3), 450-465.