

## TOWARD AN APPLIED POSITIVE PSYCHOLOGY

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he term Positive Psychology is found in the book *Motivation and Personality* by Abraham Maslow, published in 1954, where a chapter is devoted to this subject. However, the humanistic approach driven by Maslow was not so grounded in research; the biggest surge in the research on which today's positive psychology is based occurred at the beginning of the 21<sup>st</sup> century, led by its top representatives in those early days: Martin Seligman and Mihail Csikszentmihalyi (2000). We say all this because we must not forget that positive psychology is psychology and, thus, it uses the scientific method basing its roots and objectives on knowledge and scientific research.

With regards to the object of study of Positive Psychology, we can appreciate that it cuts across different areas and fields of application of psychology (health, work, organizations, sports, leisure, education, etc.) And it focuses primarily on positive experiences, psychological strengths and positive communities in various contexts and applications. It is evident that the object of study focuses on the "positive", but it should be borne in mind that the positive goes beyond the purely hedonic or pleasurable. In this regard, we agree with Pawelski (2016), in that perhaps the defining feature of Positive Psychology is an interest in the positive<sup>1</sup>, not from a simplistic perspective, but rather contemplating at least two meanings of the word: a more traditional meaning that relates to the presence of something that is positive due to its quality, such as serenity, joy, positive relationships with others, etc.; and another more novel meaning that has to do with preference, with something that is of value and has a sense of progress or proliferation.

It is true that, at least in the beginnings of Positive Psychology driven by its pioneers, Seligman and Csikszentmihalyi (2000), there was a strong emphasis on studying only the positive aspects of human and social functioning, addressing issues of positive content such as positive emotions, character strengths and flow. This particular emphasis on studying only the positive constructs or the *bright side of human nature* has been called by some authors the First Wave of Positive Psychology (Lomas & Ivztan, 2015; Wong, 2011), which emerged as a particular kind of antithesis to traditional Psychology, with its focus on pathologies, trauma and problems. However, criticisms derived from the focus of Positive Psychology exclusively on the positive aspects, or considering that even the positive may lead to the negative (e.g., an excess of optimism could lead to risky behaviour) or the negative to the positive (e.g., a serious illness may increase the meaning of life or spirituality) have meant that positive psychology has developed in a very challenging way.

For example, Lomas and Ivztan (2015) point out that the criticism of Positive Psychology, instead of destabilizing it or make it disappear, has helped it to reach a new phase of maturity and development, which has been termed the "Second Wave" of Positive Psychology (Held, 2004) or positive Psychology 2.0 (Wong, 2011). This is characterized by a more nuanced approach towards positive and negative concepts and understanding well-being as a more dialectical construct. That is, it assumes that the relationship between positive and negative, or between the dark side and the bright side, need not be diametrically opposed, but rather that both elements are intimately connected through a process of thesis-antithesis-synthesis.

What seems clear is that, over time, positive psychology has matured and its object of study has expanded, including the very concept and content of what we mean by positive, which is not just

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<sup>1</sup> We do not hope to be exhaustive in this analysis since this is not the place for it. But for the reader who is interested in this exciting topic, we refer you to this author's two articles in which he makes a valuable contribution to clarify the descriptive and normative significance of what we mean by "positive".



that related to the hedonic or immediate but includes a more eudemonic, more complex, well-being, and that the valuation of the positive depends on the context, for example. The positive is not merely a supplement to the negative, but goes beyond that based on a genuine interest in understanding and discovering the foundations of human and social development from a practical approach, emphasizing the idea of being able to develop an authentic life, full of meaning and significance, but accepting the negative as an intrinsic part of the very process of living.

For example, some not-so-pleasant emotions and situations (e.g., sadness, anxiety, perseverance, etc.) can be important in achieving well-being, personal and professional development, family relations, the progress of societies, etc. The concept of resilience or post-traumatic growth involves, in the process itself, the existence of stressful and/or traumatic events in order to develop as a consequence the ability to continue to function positively and even emerge stronger after the trauma. Or for example, the idea of "good life" as an object of study of Positive Psychology, implies not only cultivating gratitude or other character strengths, developing optimism or having experiences of flow, but it also has to do with positive coping by dealing with guilt, disgust or envy, accepting these emotions but committing, for example, to continue to have goals that are consistent with one's own values in order to have a full and meaningful life.

The scientific evidence on topics that capture the interest of Positive Psychology continues to grow, as we have shown above. In 2013, Rusk and Waters found approximately 2,000 publications on Positive Psychology representing 4% of the documents found in PsycINFO. They also noted that Positive Psychology was in that year close to the mean of all of the disciplines that are listed in the *Thomson Reuters Journal Citation Reports, Social Sciences Edition*, with an aggregate impact factor of 2.64. Meanwhile, another review of the studies on Positive Psychology by Donaldson, Dollwet and Rao (2015), published in *The Journal of Positive Psychology* noted that between 1999-2013 there were 1,336 articles published on various topics of Positive Psychology in peer-reviewed journals; which means a there is great deal of scientific research, it being from 2008 onwards when the frequency of publications exploded. In addition, during 2014 and 2015, articles were still being published on this subject that are sure to grow the scientific knowledge in this area exponentially.

To end this introduction to the special issue and before proceeding to show the basic aspects of the studies presented, we wish to point out other elements that we believe mark the identity of Positive Psychology: its interdisciplinary and applied nature. Firstly, it is interdisciplinary, since most of its central issues, such as well-being and happiness, character strengths, optimism, resilience, flow, positive education, positive therapies, and positive organizations and communities are clear examples that are not issues specific to a single area of psychology but that received large contributions from the different areas and sub-disciplines.

There are examples of the multidisciplinary nature of Positive

Psychology in the great researchers from different areas of psychology (e.g., Seligman, Csikszentmihalyi, Diener, Pavelski, and Fredrickson) or specific journals in the field such as *The Journal of Positive Psychology* which emerged in 2006, with a current impact factor of 1.9 and located in quartile 2, and dedicated to basic and professional applied research on the optimal conditions of human functioning and development, as well as promoting well-being. Positive Psychology includes studies in different areas of psychology (e.g., social, personality, clinical, development, health, and organizations). The *Applied Psychology: Health & Well-Being* journal, with a current impact factor of 1.75 and located in quartile 2, addresses issues on best practices in the application of psychology to the promotion of well-being and optimal functioning from various perspectives and areas such as clinical, health, counselling, educational, sports, environmental, etc. Other publications focus on specific aspects of Positive Psychology. This is the case, for example, of the *Journal of Happiness Studies*, with a current impact factor of 1.68 and located in quartile 2, which focuses on the scientific study of subjective well-being from subjective assessments of well-being (e.g., life satisfaction) to the emotional enjoyment of life (e.g., moods and emotions). Finally, we note the *Journal of Positive Behavior Interventions*, with an impact factor of 1.40 in quartile 2, which deals with principles based on research to support positive behaviour and behavioural adaptation in different contexts, such as the school, family or community.

In addition, the scientific associations and specific congresses held on Positive Psychology also have this interdisciplinary nature. The scientific associations include the SEPP (Spanish Society of Positive Psychology, <http://www.sepsicologiapositiva.es/>) in our country, the ENPP (European Network of Positive Psychology; <http://www.enpp.eu/>) and the DGPPF (German Association for Positive Psychology Research; <http://dgppf.de/konferenz/>) at the European level and, finally, the IPPA (International Positive Psychology Association; <http://www.ippanetwork.org/>) and the IPEN (International Positive Education Network, <http://www.ipositiveducation.net/>) internationally. These associations organize various Positive Psychology conferences worthy of mention: the *Congreso Nacional de Psicología Positiva* [National Congress of Positive Psychology] in Spain, the European Conference of Positive Psychology, the World Congress on Positive Psychology and the Festival of Positive Education. Specifically, this year and in 2017, the Third National Congress on Positive Psychology was held in Baeza, Jaén (April 2016), the Eighth European Conference of Positive Psychology in Angers, France (June-July 2016), the Festival of Positive Psychology was held in Dallas, Texas (July, 2016), and the Fifth World Congress on Positive Psychology in Montréal, Québec (July, 2017).

Secondly, it is interesting to note that since its inception Positive Psychology has been characterized by a strong emphasis on its practical applications. For example, in the Akumal Manifesto, which was written by a group of academics at one of the annual meetings on Positive Psychology held in Akumal (Mexico) (Sheldon, Fredrickson, Rathunde, Csikszentmihalyi, & Haidt,



2000), a set of Positive Psychology applications were reported that remain in force even today. These include:

- ✓ Improving children's education, making greater use of intrinsic motivation, positive affect, and creativity within schools.
- ✓ Improving psychotherapy by developing approaches that emphasize hope, meaning, and self-healing.
- ✓ Improving family life through an improved understanding of the dynamics of love and commitment.
- ✓ Improving job satisfaction throughout life to help people to find authentic rewards at work, experience states of flow, and make genuine contributions in their work.
- ✓ Improving organizations and societies, discovering that conditions that increase trust, communication, and altruism in people.

The rise in the scientific productivity of Positive Psychology has also been indirectly influenced by how interventions are being carried out in various social and economic contexts. What approach is taken with interventions in the applied field by professionals? Is it a problem-centred approach, focused on what is wrong? Or is it the promotion of health and well-being? This is, without a doubt, an interesting debate and would in itself fill another special edition on the effectiveness of positive interventions and their results today. However, in this special edition we present some of the studies with results on positive interventions in the organizational, clinical and educational fields.

By positive interventions, we mean those strategies that are implemented to improve the development and satisfaction of people with the ultimate goal of promoting their health, quality of life and excellence (Snyder, Feldman, Taylor, Schroeder & Adams, 2000). Advances in this area have enabled us to categorize the interventions (primary and secondary interventions), highlight basic interventions and even propose a series of recommendations from the scientific research (Llorens, Salanova, Torrente & Acosta, 2013; Snyder et al, 2000).

It is since the work of Seligman, Steen, Park and Peterson (2005) that positive interventions have become popular and their use proposed (Rashid, 2015). Reviewing the main strategies of intervention at the individual level, most prominent are those involving the values, interests and preferences of people that ultimately allow them to know themselves. The reason for the relevance of these interventions is that they favour the development of positive reactions in others (e.g. through emotional contagion) and they also increase the well-being of people. These positive interventions involve changes in behaviour (e.g., practising virtues, being kind to others or expressing gratitude), beliefs (e.g., reflecting on the positive or cultivating optimism) or the motives and goals of individuals (e.g., setting and pursuing personal goals or increasing resilience) (Llorens et al, 2013; Martínez, Salanova & Llorens, 2016).

Despite the relevance of the impact of positive interventions in different contexts (clinical and health, education, work and organizations) more applied scientific research is still needed. A review of the publications focusing on positive interventions

reveal that despite the interest in these interventions they differ in several aspects: (1) in the analysis conducted (individual or collective), (2) in the design (usually divided into people/groups that are treated and people/groups that are untreated) either by random selection or non-random selection with an intervention group and no control group or by "natural" selection with an intervention group (participants who voluntarily participate in the intervention) and groups that are not treated or groups that are on the waiting list and (3) in the procedure; generally they are case studies with quasi-experimental designs where different strategies are used (e.g., feedback surveys, workshops, micro interventions with exercises, videos, or talks in small groups, interventions on psychological capital via the internet, theatre-based interventions, problem-solving processes, gratitude exercises). In addition, these interventions also vary with regards to the time and duration of the sessions (see Llorens et al. 2013; Martínez, Salanova & Llorens, 2016; Salanova, Llorens, Torrente, & Acosta, 2013).

Despite this broad range of possibilities of positive interventions, efforts have been made to highlight the best practices in this area: (1) preparing the environments where the intervention will be carried out (e.g., ensuring the commitment the people involved, promoting the information mechanisms and active participation), (2) designing the intervention (e.g., planning the intervention realistically, with realistic, positive and measurable objectives), (3) implementing and testing the effectiveness of the intervention through experimental studies (with an intervention group and a control or waiting list group) with assessments over time, and (4) assessing the real impact of the intervention focused on its transfer into our personal and/or professional lives (see Llorens et al. 2013; Salanova et al., 2013).

In this special issue, which we have divided into two issues of the journal, a number of research results in this field are presented, symbolizing the contribution of researchers from different areas of psychology with a focus on the positive (in the broad sense of the word) and its applications, with 13 review papers related to Positive Psychology in its three areas of application: Organizations and work, Clinical and health, and Education. The studies have been developed by leading experts at national and international level in Positive Psychology.

In this first issue, four studies are presented in the area of application of ORGANIZATIONS AND WORK. In the next issue articles, there will be articles from the other areas of Clinical and health, and Education. With regards to the four studies in the area of Organizations and Work, the first one entitled "Can we be passionate about our work? A review on passion at work" (Lisbona, A., Palací, F.J., & Bernabé, M., from UNED [the National University of Distance Education in Madrid], focuses on passion as an activity characterized by harmony or obsession in relation to carrying out an activity. Unlike engagement, passion involves variables related to the self and the volitional processes in the performance of the action. In this work, the authors reviewed 90 empirical studies that address the construct of passion at work, attending to articles with an



empirical and quantitative design. It is noted that passion was studied as a personal resource, with responses associated with satisfaction, well-being and performance.

In the second article, "Positive leadership models: Theoretical framework and research" (Blanch, J., Gil, F., Antino, M. & Rodríguez-Muñoz, A. from the Complutense University of Madrid) positive leadership is explored. This type of leadership is defined as one that facilitates the superior performance of individuals and groups, focusing on their strengths and abilities, and pivoting around the most positive aspects of the human condition. The aim of this article is twofold: on one hand the conceptual margins of positive leadership are defined, as well as the reasons for their appearance. On the other hand, practical aspects are reviewed related to the empirical research which demonstrates the impact of this type of leadership in organizations. In particular, the positive relationship between authentic leadership and positive organizational variables is emphasized. Finally, future research directions are outlined for the development of this concept.

The third article "Contributions from the Positive Organizational Psychology to develop Healthy and Resilient Organizations" (Salanova, M., Llorens, S. & Martínez, I. Universitat Jaume I of Castellon) presents the main results obtained by the WANT team for Psychosocial Prevention and Healthy Organizations on the HERO model (Healthy & Resilient Organizations). Specifically, the theoretical model and tools that enable the collective assessment (via management interviews and questionnaires administered to groups of workers, supervisors and clients) of healthy and resilient organizations. Secondly, the main results of the application of this methodology in the different socioeconomic contexts are presented. The last part of the work is dedicated to presenting different experiences of positive interventions that have been carried out by the research team under the paradigm of Positive Organizational Psychology.

Finally, in the article "Amplification in the workplace: Building a sustainable workforce through single positive psychological intervention" (Le Blanc, P., & Oerlemans, W.G.M. from the University of Eindhoven) it is shown how amplification interventions are considered a key tool to increase the sustainability of enterprises. The aim of this paper is to provide evidence through a review on how to increase the well-being of employees via interventions focused on "amplification" rather than "healing". First, some important preconditions for the interventions are highlighted and the intervention process itself briefly discussed. Additionally, a review is provided of the empirical studies on interventions of amplification, especially based on engagement.

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## CAN WE BE PASSIONATE ABOUT OUR WORK? A REVIEW ON PASSION AT WORK

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*Es posible distinguir entre dos tipos de pasión: la pasión armoniosa y la obsesiva, así el modelo teórico denominado Dualistic Model of Passion (DMP) (Vallerand et al., 2003) afirma que las actividades pueden ser internalizadas en la propia identidad a través de dos procesos que se corresponden con estos dos tipos de pasión. El presente trabajo pretende revisar los estudios empíricos que abordan el constructo de pasión en el trabajo. Para ello, se ha realizado una búsqueda bibliográfica en la base de datos PsycINFO. El periodo de búsqueda se centra en los cinco últimos años y se han seleccionado aquellos artículos con diseño empírico y cuantitativo. Se han obtenido un total de 90 registros donde se estudia la pasión en el ámbito laboral. Se observa que la pasión ha sido estudiada como un recurso personal, con respuestas asociadas a la satisfacción, bienestar y desempeño.*

**Palabras clave:** Pasión, Satisfacción, Bienestar, Desempeño.

*Two types of passion can be distinguished: harmonious passion and obsessive passion. The dualistic model of passion (DMP) (Vallerand et al. 2003) posits that activities can be internalized in one's identity by two different processes, each of them leading to the two aforementioned types of passion. The aims of the paper are to review the empirical studies related to the construct passion at work. We review some empirical evidence from the PsycINFO database. The search focuses on the last five years and we have selected articles with empirical and quantitative designs. We obtained a total of 90 records in which passion in the workplace is studied. The results show that passion has been studied as a personal resource, and is related to satisfaction, well-being and performance.*

**Key words:** Passion, Satisfaction, Well-being, Performance.

**T**he study of passion can be situated within the body of research aimed at analysing all of the behaviours that relate to the positive aspects of people, as will be shown in this work. The study of this subject emerged with force in the field of positive psychology, led by Canadian professor Robert Vallerand, president of the (IPAA) the International Positive Psychology Association, appointed in 2013.

Following Vallerand's proposal, passion is defined as a strong inclination towards an activity that appeals to people and is considered important in their life, and on which time and energy is spent. There have been numerous studies on passion in the professional context (Bernabé, Lisbona, Palací, & Martín-Aragón, 2014; Serrano Fernández, 2014) and it is this context on which we will focus. The study of passion has spread to many different areas however, ranging from online shopping (Wang & Yang, 2008) to dancing (Chamarro, Martos, Parrado & Oberst, 2011).

We can answer the question of how a particular activity can become a passion, based on Self-Determination Theory by Deci and Ryan (1991). We can affirm that people have a natural

tendency to internalize some activities within themselves. Depending on the importance and value of these activities they eventually come to occupy a central part of the person's identity. Thus, if an activity is highly valued and has become a central aspect of one's identity, it becomes an activity that defines the person and the activity becomes a passion.

It is possible to distinguish various types of passion. Vallerand and his team (Verner-Filion, Lafreniere & Vallerand, 2012) propose a model to explain passion which distinguishes between two types of passion: the obsessive and the harmonious. While harmonious passion refers to an autonomous internalization that allows the person to choose to undertake an activity they like, and despite being very important for the self, the presence of this activity is not overwhelming and leaves the person room for other life interests. The people feel obliged to perform the activity, but at the same time, they feel independent and they choose to do so freely. In contrast, obsessive passion frustrates this positive adaptation and generates not only negative affect, but also a rigid persistence without flexibility.

To answer the aforementioned question, regarding how an activity becomes a passion in academia and work, it is important to detect the psychological process that is involved, through which an interest in an activity becomes a passion. Vallerand and Houliort (2003) identified two processes,

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included in the definition of both types of passion: the valuation of the activity and the internalization of the activity as part of one's own identity. The studies that have been conducted in this context propose the dualistic model of passion, whereby a series of affective responses are identified depending on the type of passion experienced when carrying out the activity. First, they point out the positive affective outcomes for harmonious passion and the negative ones for obsessive passion, emphasizing flow among the positive outcomes and anxiety among the negative ones. In harmonious passion the activity is freely important for the self, regardless of other contingencies, whereas in obsessive passion, the passionate activity is associated with inter- or intra-personal contingencies, such as feelings of self-worth, social acceptance or uncontrollable excitement. The person feels an inner compulsion to perform the activity even though they should not, which therefore causes conflict with other tasks or roles, the person will feel negative emotions and it will have significant personal costs due to not having attended to other tasks or roles. In addition and due to the internal pressures the person feels, they cannot stop thinking about the activity when they are performing other tasks, they cannot focus on other activities and it prevents them from enjoying the other activities (Chamorro, Martos, Parrado & Oberst, 2011).

In contrast, with harmonious passion the individuals feel control over the activity, they can choose when to do it, and they perceive little conflict between the activity they love and other activities and roles. This autonomy is vital in reducing the feeling of negative emotions. In this case the person is persistent in carrying out the activity, but there is a rational flexibility, if the person has some difficulty, or has negative results, they can reduce the activity, adjust it, etc. However, with obsessive passion, the activity has taken control of the person.

Although the concept of passion has been defined and tested empirically, we believe it is important to establish the differences with other related terms that we apply in the workplace and professional environment.

#### **Related concepts**

There are similarities and differences between passion and intrinsic motivation. Both constructs are related to an activity. However, they differ in the degree it occupies within the person's identity. People who are intrinsically motivated engage freely in an activity and derive inherent satisfaction from commitment to the activity. Passion for an activity becomes a central part of the person's identity and this is what explains the carrying out of the activity.

Turning to the definitions proposed by the authors, the definition by Vallerand and Houliort (2003) speaks of a strong inclination towards an activity that appeals to people because it is considered important, time and energy is spent on it and, similarly, the vigour dimension of engagement, according to the definition by Schaufeli and Bakker (2003), is characterized by high levels of energy and mental resilience while working, the wish to invest effort in the work being carried out even when difficulties arise, together with the dimension of dedication

which refers to the manifestation of a sense of significance, enthusiasm, inspiration, pride and challenge at work. From the definitions we can see that the scope of influence of passion occupies a central aspect in the identity of the person, whereas vigour is limited to the workplace.

According to the definition of the absorption dimension of engagement, this appears not to be so associated with passion, since according to the definition by Schaufeli and others, absorption occurs when one is fully concentrated at work, while experiencing that time 'flies', and having difficulty disconnecting from what one is doing, due to the heavy doses of enjoyment and concentration experienced. Harmonious passion, thus, seems to be an antecedent to engagement, as it facilitates emotional energy, and satisfaction at work, by allowing tasks to be done flexibly.

However obsessive passion has been related to workaholism, and as is the case with workaholism, it is characterized by an inner compulsion that prevents the individual from disconnecting from work even if they are not there (Serrano Fernández, 2014).

As for the relationship with engagement, based on the Job Demands-Resources model by Demerouti, Bakker, Nachreiner, & Schaufeli (2001), a strong relationship is clearly identified between the existence of resources in the individual's immediate environment and the generation of an engagement response, while in the absence of resources, the response will be weakened, the work demands carrying more weight. However, passion would explain the persistence maintained in situations where a significant personal investment is required, the activity itself exercising the motivational force necessary in the absence of resources.

With respect to burnout, harmonious passion could function as a shield against exhaustion, since it is positively related to strength but negatively related to the dimensions of burnout (cynicism, emotional exhaustion and effectiveness). Given these considerations, we now review the empirical studies that address the construct of passion at work.

#### **METHOD**

The construct of passion applied to the working environment was reviewed in the PsycINFO database. The criterion for selecting the descriptors was aimed at obtaining the highest number of empirical studies evaluating passion for work. Articles were included from the period between 2010 and 2015.

The descriptors used were passion and work. They were combined with the Boolean operator AND. The inclusion criteria were that the study had to have a quantitative design, be published in a journal with peer review and cover the aspects Motivation and Passion at work. A total of 481 results were obtained, and the search was filtered according to the established criteria. There were 281 items selected from journals. Subsequently, 56 studies with a quantitative methodology were selected, and finally a total of 20 articles were obtained which studied passion at work, concentrating on aspects of motivation and passion in the work context. Articles that did not meet these criteria were eliminated.

**RESULTS**

The studies consulted can be seen in Table 1. As can be observed, most of them combine a descriptive design with a confirmatory design by longitudinal study (n = 8). They analyse passion as a predictor variable (n = 8) and as a mediator variable (n = 6).

The study of passion has been carried out with variables related to well-being at work (i.e., burnout and engagement), satisfaction and performance (i.e., working hours and creativity) and with organizational resources in the work environment (i.e., autonomy, social support and social identity). Articles were also found related to individual well-being (i.e., life satisfaction, vitality and depression) and personal resources (i.e., strengths, psychological adjustment).

**DISCUSSION**

As can be seen in the articles found, passion is an issue that has sparked interest in the organizational context, whether as a variable that mediates between individual responses (Chen & Xin, 2011; Forest, Mageau, Crevier-Brand, Bergerson & Vallerand, 2012; Trepanier Ferment, Austin, Forest & Vallerand, 2013; Belanger, Pierro, Kruglanski, Vallerand, & Falco, 2015; Bernabé, Lisbona, Palací, & Martín-Aragón, 2014; Fernet, Lavigne, Vallerand, & Austin, 2014) or as an antecedent in aspects of performance and well-being (Caudroit, Boiché, Stephan, Le Scanff, & Trouillod 2011; Ho, Wong & Lee, 2011; Donahue, Forest & Vallerand, 2012; Houffort, Philippe, Vallerand & Ménard, 2012; Lavigne, Forest, & Crevier-Braund, 2012; Thorgren & Vincent, 2013; Lavigne, Forest & Crevier-Braund, 2014; Houffort, Fernet, Vallerand, Laframboise, Guay, & Koestner, 2015). The studies confirm the role that both kinds of passion have on the responses of well-being and performance at work. The vast majority of the studies confirm the relationships found at different times. On the one hand, it is confirmed that employees who experience harmonious passion according to the definition of Vallerand et al. (2012), tend to experience more absorption at work and engagement (Ho et al, 2011; Trepanier et al, 2013), lower levels of emotional exhaustion and burnout (Belanger et al, 2015; Donahue et al, 2012; Lavigne et al, 2012; Trepanier et al, 2013; Fernet et al, 2014) higher levels of satisfaction in different areas (Houffort et al, 2012; Bernabé et al, 2014; Houffort et al, 2015), as well as well-being and happiness (Forest et al, 2012; Bernabé et al, 2014). These employees show better performance, are more creative and have more control at work (Chen & Xin, 2011; Ho et al, 2011; Lavigne et al, 2014).

In view of the studies, experiencing passion in a balanced way when carrying out an activity has more beneficial results than workers with obsessive passion in the execution of work behaviour. The latter experience higher levels of emotional exhaustion and burnout, higher levels of depression and lower levels of happiness (Houffort et al, 2012; Trepanier et al, 2014; Bernabé et al, 2014; Serrano Fernández, 2014). Also, despite spending more hours at work (Caudroit et al., 2011) these workers have a lower performance, poorer attentional levels,

higher levels of perceived stress and greater difficulty in balancing their work and family life (Caudroit et al., 2011; Ho et al, 2011; Belanger et al, 2015). This also results in a higher intention to leave the organization (Houffort et al., 2012). Even after the end of their working life, they say they feel less satisfied with life, due to not having all their needs covered and having a poorer psychological adjustment in retirement (Houffort et al., 2015).

Regarding the execution of tasks, the studies consulted indicate that employees who show harmonious passion in carrying out an activity, experience less overload and role conflict (Thorgren & Vincent, 2013; Lavigne et al., 2014), experiencing flow in the relationship demands and personal resources in performing the activity. The opposite is observed in workers with a more obsessive profile in carrying out their

Authors	T1	T2	N	Population	A	M	Variables	α	Results
Belanger et al. (2014)	✓	✓	119/92	Technicians	✓		Stress [ST] Organizational action [OA] Organizational rule [OR]	.88 .82 .70	OA→PA: + ON→PO: + PA/PO→EP
Bernabé et al. (2014)	✓		266	Students		✓	I. Organization [IO] I. Studies [IS] Happiness [HA] Satisfaction [SA]	.82 .75 .89 .73	IS-PA/PO: PA-FE/SA: + PO-FE/SA: ns
Caudroit et al. (2011)	✓		160	Teachers	✓		Physical A. [PA] Family C. [FC] Work H. [WH]	- .82 -	PA-AF: + PO-HT: + PA/PO - CC
Donahue et al. (2012)	✓	✓	117/118	Nurses	✓		Emotional A. [EA] Recovery [RE] Rumination [RU]	.86 .89 .94	PA/PO→RE/RU RE→AE: - RU→AE: +
Fernet et al. (2014)	✓	✓	246/689	Teachers	✓		Emotional A. [EA] Cynicism [CY] Professional E. [PE] Autonomy [AU]	.95 .86 .81 .84	AU-PA: + AU-PO: - PA/PO→BO
Forest et al. (2012)		✓	186	Students	✓		Personal F. [PF] Vitality [VT] Vital S. [VS] Well-being [WB]	.92 .90 .87 .83	FP→PA: + PA→BS: +
Ho et al (2011)	✓		557	Technicians	✓		Absorption [AB] Attention [AT] Performance [PF]	.84 .86 -	PA-AB: + PO-AT: - AB/AT - RT
Houffort et al. (2012)	✓	✓	2393/335	Teachers	✓		Work S. [WS] Depression [DP] Abandonment I. [AI]	.86 .84 -	PO→DP: + PA→SL: + DP/SL→IA
Houffort et al (2015)	✓	✓	103/73	Teachers	✓		Needs S. [NS] Psychological A. [PA] Vital S. [VS]	.90 .94 .89	PA→SN: + PO→SN: - SN→SV
Lavigne et al. (2012)	✓	✓	113/325	Technicians	✓		Burnout [BU] Flow [FL]	.97 .92	PA→FO FO→BU FO→BU: -
Lavigne et al. (2014)		✓	485	Teachers	✓		Overload [OL] Control [CO] Social A. [SA]	.88 .90 .72	PA→SC: - PO→SC: + SC→CO
Liu et al. (2010)	✓	✓	856/525	Technicians	✓		Autonomy [AU] Team A. [TA] Autonomy A. [AA] Creativity [CR]	.77 .86 .78 .90	OA→PA: + AE→PA: + AA→PA: + PA→CC
Thorgren et al. (2013)	✓		704	Self-employed	✓		Role C. [RC] Overload [OL] Opportunities B. [OB]	.71 .73 -	PA-CR/SC: - PO-CR/SC: + CR/SC-BO
Trepanier et al. (2014)	✓	✓	1179/745	Nurses	✓		Emotional A [EA] Vigour [VI] Work D. [WD] Work R. [WR]	.93 .87 .93 .92	DL→PA/PO RL→PO: - PA→EN/AE PO→AE

**Legend.** T1/T2: Moments of measurement; A: Passion as an antecedent variable, M: Passion as a mediator variable. **Results:** → regression. -: Correlation; +: Direct relationship; -: Inverse relationship; ns: not significant

activities, where rumination produces the burden is higher and they experience less control at work (Thorgren & Vincent, 2013; Lavigne et al., 2012). Thus, both types of passion differ in the explanatory variable of the responses of emotional exhaustion experienced. As noted above, employees who carry out their professional activity with harmonious passion implement more effective recovery strategies that prevent most emotional exhaustion. This is not the case for employees with obsessive passion for their activity, for whom rumination exposes them to greater emotional exhaustion (Donahue et al., 2012). In the same vein, workers that are passionate about their work in a balanced way are aware of fatigue and can take breaks from their work without feeling guilty or anxious (Trepanier et al., 2014).

Regarding the antecedents of passion analysed, the studies show autonomy, self-regulation, personal strengths and social identity (Chen & Xin, 2011; Forest et al., 2012; Belanger et al., 2015; Bernabé et al., 2014; Fernet et al., 2014). Autonomy, understood as the degree to which the activity provides opportunities to make decisions and exercise control over the tasks to be performed (Karasek, 1985), seems to contribute to the experience of passion in one way or another (Fernet et al., 2014). Thus, the support systems of autonomy promote the internalization of the activity (i.e., the acquisition of values and goals), as opposed to the absence of autonomy in the workplace which encourages a directed internalization because somehow it forces people to comply with and address external contingencies that are not necessarily consistent with the objectives or values of the employee (Feret et al., 2014). So passion is harmonious when the activity is under the individual's control, whereas it becomes obsessive when it is the activity that controls the individual.

As for self-regulation as an antecedent variable to passion, according to the model of self-regulation by Kruglanski et al. (2000), Belanger et al. (2015) identify two orientations of self-regulation: action orientation and rule orientation for achieving goals. The first one, understood as "committing the psychological resources that will initiate and maintain the progress aimed at an objective without distraction" (Kruglanski et al., 2000, p.794), is related to harmonious passion. In comparison, rule orientation, understood as evaluating the different alternatives for "doing the right thing" (Belanger et al., 2015, p. 320), relates to obsessive passion. Thus, the authors note that action orientation mobilizes intrinsic motivation as opposed to rule orientation, which is related to extrinsic motivation, aimed at achieving a specific end state with participation in an activity (Deci & Ryan, 1991; Belanger et al., 2015). Regarding personal strengths, based on the definition made by the authors (see Linley, 2008), these are related to harmonious passion (Forest et al., 2012). In other words, it seems that being aware of and using one's strengths is associated with perceiving that you are using your full potential at work. This way you are more likely to freely internalize the values and objectives of the work, according to Forest et al. (2012). Although it is worth noting that the relationship with

obsessive passion was not addressed in the cited study, and it is not known whether strengths may have a preventive effect on it.

There are different practical implications of the findings of the studies consulted in this review that we can classify according to the taxonomy proposed by Salanova et al. (2013). At the level of healthy practices, there is broad consensus among the studies in indicating that promoting autonomy at work, offering the opportunity to make decisions and to have control over tasks will favour the development of harmonious passion, reducing distress. Strategies at this level may include team-based interventions such as establishing rules in work teams to support the autonomy of the members. It seems that creating these environments that support autonomy can facilitate harmonious internalization in comparison with environments with rewards and timescales that promote obsessive passion (Belanger et al., 2015). Thus, in environments with high demand (i.e., short timescales and remuneration system), a strategy that can be developed is to facilitate the integration of motivation with tasks (Trepanier et al., 2013). To this end, labour resources can play an important role in encouraging motivation (Bakker & Demerouti, 2006). Among the strategies available at the individual level, employees can be encouraged to identify their own strengths and implement them in order to experience harmonious passion (Forest et al., 2012). This leads to the pursuit of a professional life with meaning and the development of strengths, talents, etc. (Ryan & Deci, 2001). At the organizational level, authentic leadership can be developed, which facilitates this self-knowledge, because as we have seen, this kind of leadership promotes the psychological capital of the organization (see Rego, Fousa, Marques, & Pina, 2012).

Other strategies for interventions are those that promote employee development activities or strategies at the cognitive and volitional level (Salanova et al., 2013). An example could be the actions that lead to reflection on the intrinsic values of work and how they link to the strengths, through programs of Emotional Intelligence that encourage this (Houliort et al., 2015). Furthermore individual cognitive level actions to reduce rumination and understand the values and objectives linked to the activity may be a useful strategy in preventing emotional exhaustion (Lavigne et al., 2014). Finally, and not less important, another strategy at the organizational level is to include measures of health promotion. One of these is to promote recovery outside of work (Donahue et al., 2012), based on health promotion at work, encouraging an active and satisfying life, both within the work environments and outside work, which contributes to recovery.

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## POSITIVE LEADERSHIP MODELS: THEORETICAL FRAMEWORK AND RESEARCH

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*El objetivo de este artículo es doble, en primer lugar, se define el marco teórico del liderazgo positivo así como las razones de su aparición. Este surge vinculado al paradigma de la psicología organizacional positiva, en cuyo ámbito, se han desarrollado las diferentes formas de liderazgo que lo integran (i.e. transformacional, de servicio, espiritual, auténtico y positivo). Aunque el constructo no parece unívocamente delimitado, los diferentes tipos que se incluyen bajo esta denominación presentan una gran afinidad y elementos comunes. En segundo lugar, se revisan aspectos prácticos vinculados a la investigación empírica que constatan el impacto de este tipo de liderazgo en las organizaciones y se subraya la relación entre estas formas de liderazgo y variables organizacionales positivas. Finalmente, se analizan futuras líneas de investigación para el desarrollo de este marco conceptual.*

**Palabras clave:** Psicología organizacional positiva, Liderazgo transformacional, Liderazgo auténtico, Liderazgo de servicio, Liderazgo espiritual, Liderazgo positivo, Liderazgo ético.

*The objective of this article is twofold; firstly, we establish the theoretical boundaries of positive leadership and the reasons for its emergence. It is related to the new paradigm of positive psychology that has recently been shaping the scope of organizational knowledge. This conceptual framework has triggered the development of the various forms of positive leadership (i.e. transformational, servant, spiritual, authentic, and positive). Although the construct does not seem univocally defined, these different types of leadership overlap and share a significant affinity. Secondly, we review the empirical evidence that shows the impact of positive leadership in organizations and we highlight the positive relationship between these forms of leadership and key positive organizational variables. Lastly, we analyse future research areas in order to further develop this concept.*

**Key words:** Positive organizational psychology, Transformational leadership, Authentic leadership, Servant leadership, Spiritual leadership, Positive leadership, Ethical leadership.

**T**he paradigm of positive psychology has influenced the majority of the conceptual models and methods of psychology since its appearance at the end of the last century. Its object of study focuses on the conditions and processes that contribute to the optimal performance of individuals, groups and organizations, promoting the positive dimensions of the human being (Gable & Haidt, 2005). Psychology must attempt to understand the aspects linked to suffering and happiness and also to study their interaction in order to validate interventions that mitigate suffering and increase happiness in people (Seligman, Steen, Park & Peterson, 2005).

The study of organizational behaviour has evolved in parallel to the progress of research in the field of positive psychology (Luthans, 2002). This has enabled the emergence of what we call positive organizational behaviour, which is an extension of the principles of positive psychology applied to organizational behaviour (Quick et al., 2010). Within positive organizational behaviour, we have identified a number of constructs and processes, including that of leadership. This is one of the

processes of social influence that have received the most attention in the behavioural sciences and in particular in positive organizational psychology. One important reason is that the success of any economic, political and organizational system depends on the efficient action of the leaders of that system (Barrow, 1977). Leadership also plays a crucial role in promoting organizational and occupational well-being and health, both at the individual and collective levels (Peiró & Rodríguez, 2008). This interest has led to the emergence of different models of positive leadership which share a common theoretical basis. These all emphasize the fact that leaders must encourage and maintain optimal levels in their followers' performance, through the promotion of virtuous and eudaimonic behaviours (Cameron & Pews, 2012).

The qualitative review of the theories of leadership by Dinha et al. (2014) categorized two main groups: established theories and emerging ones. In the case of emerging theories, those conceptualized as theories of ethical or positive orientation have been the most analysed. These include theories of authentic, servant, spiritual and moral leadership. All of them, along with transformational leadership, are included within the conceptual framework that we are analysing here, that of positive leadership. Two important elements can be highlighted within its scientific status. Firstly, included under this heading are different leadership models that share a number of common

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characteristics, anchored in the concept of positive organizational behaviour, but there are some differences that prevent an unambiguous definition of the construct. This would lead us to speak, instead, of positive forms of leadership. Thus, Avolio and Gardner (2005) have identified the common components to these forms of leadership: (1) a positive moral outlook, (2) the leader's self-knowledge, (3) positive modelling of the followers' behaviour, (4) personal and social identification of followers with the leader and the group, and (5) positive social exchanges between the leader and the followers.

Secondly, sufficient empirical evidence has not been accumulated in all cases on the validity of these models. Nor have valid psychometric instruments been developed to enable their measurement and the examination of the proposed connections with other constructs, in a nomological network that enables them to demonstrate their predictive validity for organizational behaviour (Barbuto & Wheeler, 2006; Brown, Treviño & Harrison, 2005). We review the main models below.

### TRANSFORMATIONAL LEADERSHIP

The concept of transformational leadership was introduced by Burns (1978), based on the qualitative analysis of the biographies of political leaders and the precursor of the current forms of positive leadership. The most notable development of the construct is that of Bass (1985), who proposed the multifactorial leadership theory. This conceptualizes leadership based on defined behaviours that are articulated on the basis of three factors: transformational leadership, transactional leadership and *laissez-faire* leadership.

Transformational leadership has been characterized as one that establishes a vision for the future among the members of the organization; it considers the individual differences between the members of the organization and acts as a stimulus to the achievement of organizational goals and objectives (Yammarino & Bass, 1990). Transformational leaders are described as capable of motivating their followers to transcend their own individual interests, in order to guide their behaviour to achieve collective goals (Bass, 1985). The transformational leader is postulated as contrary to the transactional leader, whose main characteristic is to formulate the exchange of rewards contingent to the followers producing a number of desired behaviours (Burns, 1978). Transformational leadership represents, in this sense, a replacement of the transactional leadership approach, which is the model that had dominated the theoretical landscape until then. According to Bass (1999), the transformational leader integrates four essential factors: (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation and (d) the individualized consideration of the followers. Bass (1985) also defined the *laissez-faire* leadership style as one that is paradoxically characterized by the absence of transactional or transformational qualities in the leader. Some authors consider it a destructive kind of leadership which has a systematic relationship with organizational stressors (Rodríguez-Muñoz et al., 2012; Skogstad et al., 2007).

The studies by Bass led to the development of the Multifactor Leadership Questionnaire (Bass, 1985). This questionnaire has been used in construct validation and research; in the case of the Spanish population, its factor structure has been established by Molero, Recio and Cuadrado (2010).

The model of transformational leadership has become one of the most relevant for understanding the effectiveness of leaders in organizations (Lowey Gardner, 2001). There is extensive empirical evidence that behaviours related to transformational leadership have a positive effect on individual and group variables, such as employee engagement, motivation and the efficient execution of tasks (Cruz-Ortiz, Salanova & Martínez 2013a), as well as variables related to the overall organizational effectiveness and performance of a company (Bono & Judge, 2004; Cruz-Ortiz, Salanova & Martínez 2013b).

### SERVANT LEADERSHIP

The concept of servant leadership was conceived and introduced in the organizational context by Greenleaf (1977). The author formulated this type of leadership based on his own professional corporate experience as well as his own intellectual reflection (Spears, 1996). The philosophical foundations of servant leadership are also rooted in the Christian tradition (Sendjaya & Sarros, 2002).

The theory of servant leadership emphasizes the concept of service to others and the recognition that the role of the organization is to enable the formation of individuals who can help create a positive organizational environment. The servant leader is one who places the needs, aspirations and interests of his followers over his own; the deliberate choice is to serve others in order to achieve their development and the success of the organization (Greenleaf, 1977). This idea is of vital importance in the current context, in which both researchers and professionals, in various sectors of the economy, aim to respond to the dominant perception that corporate leaders have developed a pattern of behaviour that is rather inconsistent with basic ethical principles (Parris & Peachey, 2013).

The concept of servant leadership has attracted much attention recently, and although there is not yet a large body of supporting data, systematic research has begun to develop on the subject. Much of this is linked to the foundational texts by Greenleaf and the activity of the Greenleaf Center (Parris & Peachey, 2013). This research has focused on two areas of interest so far. First, the development of theoretical frameworks for understanding the construct (Russell & Stone, 2002; Van Dierendonck, 2011; Van Dierendonck, 2014; Chiniara & Bentein, 2016); and secondly, on the development of measurement tools that enable the expansion of the research and the construction of a valid theory (Reid et al, 2014; Liden et al, 2015). This empirical gap currently poses a limitation on the foundation of the model, which requires the research to be developed focused on the essential elements of the theory (Bass, 2000). Currently, the most notable theoretical contributions (Page & Wong, 2000; Russell & Stone 2002), as recognized by the authors themselves, are basically hypothetical constructs that generate debate and lay the structural foundations for further analysis and research.



### SPIRITUAL LEADERSHIP

The concept of spirituality reflects the state of the intimate relationship with the inner self, the bearer of moral values (Fairholm, 1997). Along with the physical, rational and emotional dimensions, the spiritual dimension facilitates the internal and external balance of individuals in organizations (Moxley, 2000). It is important to note that spirituality is a broader concept than that represented by the organized religions, with their principles, dogmas and doctrines (Zellers & Perrewe, 2003).

The theory of spiritual leadership arises in a context in which conventional leadership does not seem sufficient to meet the needs of individuals in the organizational environment. The initial studies attempted to determine the spiritual characteristics of effective leaders. Thus, authors such as Fairholm (1996) identified a number of qualities, defined as the presence of defined life goals, deeply rooted moral convictions, high intellectual ability, social skills and a special orientation to the development of values in others. Moreover, Reave (2005) in her review of the scientific literature on spiritual leadership, found a clear correlation between spiritual values and practices, and effective leadership.

Fairholm (1996), inspired by the ideas of Greenleaf (1977) on servant leadership, is the author who developed the first model of spiritual leadership. This model incorporates elements associated with the capabilities, needs and interests of both the leader and their followers, as well as the objectives and goals of the organization. Spiritual leaders lend their support to the rest so they can articulate their decisions on the important areas of their life. They develop an inspiring vision and mission that encourages the development of a spirit of cooperation, mutual support and commitment to the effective functioning of the organization. The author himself, however, acknowledges that these parameters and the underlying processes require more precise operationalization to give consistency to the model (Fry, 2003).

Later, Fry (2003), taking the above formulation as a reference, developed a causal theory of spiritual leadership based on a motivational model that incorporates concepts such as vision, hope, faith, altruistic love and spiritual survival. This theory sees leadership as a vector that facilitates organizational transformation as an intrinsically motivated entity, focused on continuous learning.

There are, however, two key areas that these models have not fully clarified. The first is the growing epistemological critique of the existing empirical studies on organizational spirituality; the second is the need to create a more detailed and systematic understanding of the variable we call spirituality that characterizes this form of leadership (Benefiel, 2005).

### AUTHENTIC LEADERSHIP

Authentic leadership emerges linked to the attempt to overcome the many examples of unethical behaviour that have recently occurred in the political and business environment (Luthans & Avolio, 2003). The concept of authenticity is rooted in Greek philosophy, although it was later used by humanistic psychology (Maslow, 1968), and it has recently been linked to certain areas of positive psychology (Harter, 2002).

Authentic leaders can be described as those endowed with deep moral convictions, whose behaviour is strongly inspired by these ethical principles for the benefit of the group (Gardner et al., 2005). These leaders are well aware of the actual content of their thoughts, emotions, skills, value system and how they are perceived by others. They also possess qualities such as confidence, optimism, hope, resilience and moral strength (Avolio et al., 2004). In addition, they avoid behaving inconsistently and hiding their ideas and emotions, even when these might be uncomfortable for their followers (Luthans & Avolio, 2003).

Avolio and Gardner (2005), the most prominent authors of this field, define, in their model, the components of authentic leadership linked to (1) the leader: positive psychological capital, moral perspective, self-knowledge and self-regulation of behaviour, (2) the processes of influence: personal and social identification, modelling positive behaviour, emotional contagion and social exchange based on reciprocity and consistency, (3) the followers: self-awareness, self-regulation, personal development and (4) the organizational context. The interaction of these components creates a sustainable organizational competitive advantage which produces positive psychological results (Luthans & Youssef, 2004).

To facilitate the research, the construct was operationalized through the development of a scale, the Authentic Leadership Questionnaire. Four dimensions were identified in its validation process: (1) self-knowledge, (2) transparency in interpersonal relationships, (3) internalized moral perspective and (4) balanced processing of information (Walumbwa et al., 2008). This questionnaire was validated for the Spanish population by Moriano et al. (2011).

The conceptual and empirical connections between authentic leadership and the attitudes and behaviours of followers is an area of research that has attracted great interest. There is a promising set of preliminary investigations which requires, however, greater empirical support (Avolio et al., 2004). These authors suggest that authentic leaders increase the social identification of followers with the organizational principles. Authentic leaders are also perceived as more credible sources of information by the followers and they are considered to be generators of clear goals as well as clear plans for reaching them (Luthans & Jensen, 2002). Finally, authentic leaders build the trust of followers by encouraging open communication, sharing critical information and trying to increase their involvement with work (Avolio et al., 2004).

### ETHICAL LEADERSHIP

The ethical dimensions are present in the transformational, servant and especially the authentic model of leadership. Some authors have tried to develop the concept of ethical leadership as an independent construct. Brown and Treviño (2006) provide the most developed and robust model of ethical leadership. According to their definition, ethical leadership seeks to promote normatively appropriate behaviours, in the followers, through personal actions and interpersonal relationships between them and the leader, using a reward system and transparent communication. A fundamental conceptual issue is the fact that

there is a lack of a precise and universally accepted definition regarding what is defined as appropriate normative behaviour, characteristic of this type of leadership (Frisch & Huppenbauer, 2014).

Empirical research has not yet made it possible to determine conclusively the processes that underlie the ethical dimensions of moral leadership. Brown et al. (2005) have suggested a set of psychological processes that explain the relationship between this kind of leadership and behaviours of ethical nature, such as prosocial and antisocial behaviours. These theoretical processes would be related to learning and social exchange (Bandura, 1986). Thus, ethical leaders can be considered as models of behaviour who stand out in an ethically neutral environment.

Finally, there have been few attempts to develop tools for measuring moral leadership. The psychometric properties of the questionnaires developed hinder the validation of the construct and the theoretical progress of this model (Brown et al., 2005; Riggio et al., 2010)

### POSITIVE LEADERSHIP

Positive leadership contains obvious areas of overlap with a number of the types of leadership analysed. The existing literature states that it is linked conceptually to transformational leadership (Bass, 1985) and authentic leadership (Avolio & Gardner, 2005). Both models have solid empirical support, as we have seen, however, this is not the case of positive leadership whose theoretical consolidation is still in the process of being confirmed.

The most notable approach is that developed by Cameron (2013). According to this author, this leadership style is based on the application of positive behavioural principles emerging from disciplines such as positive psychology (Seligman et al., 2005) and positive organizational psychology (Cameron et al., 2003). Specifically, positive leadership has three basic components: (1) it places the focus on people's strengths and abilities that reaffirm their human potential, (2) it emphasizes results and facilitates above average individual and organizational performance, and (3) its field of action is concentrated on the components that can be seen as essential virtues of the human condition. Expressed another way, the concept of positive leadership is based on the existence of a continuum, on which any leader can be situated. Positive leaders are those whose behaviours show an orientation towards the positive extreme (Wooten & Cameron, 2010).

The empirical evidence that supports this theoretical framework is not abundant; despite the growing interest in the theory, there are few studies that consolidate it (Kelloway et al., 2013). The relevant contributions with regards to its measurement are equally scarce and the psychometric properties of the existing instruments need further development (Antino et al., 2014). However, there are a number of studies related to the practical aspects linked to the development of healthy organizations that appear to show the validity of the construct. Thus, it has been observed that, in the teams led by a positive leader, the members show higher levels of well-being at work and the presence of positive emotions (Kelloway et al., 2013). It has also been found that positive leadership increases the performance

of the members of the organization and their commitment, improves communication and interpersonal relationships, enables the creation of a positive working environment and stimulates innovation (Cameron, 2013). Finally, the presence of a positive leadership style seems to have facilitated the merger of organizations as well as having increased the levels of customer satisfaction (Cameron & Plews, 2012). Due to the recent appearance of this model, it is hoped that supporting empirical evidence will be constructed in the future.

### CONCLUSIONS AND FUTURE RESEARCH

Over the past decade, organizations have undergone a process of change that is almost unprecedented in history. Increasing global competition, the emergence of new markets and rapid technological development have resulted in the need to generate quick and accurate responses to ensure their survival. This transformation incorporates substantial changes in both values and behaviours in individuals and in the strategies, structures and systems of organizations, to deal with this new reality (Senge, 2014). In this context, it is necessary to re-examine the traditional models of leadership based on authority and the establishment of contracts or transactions between leaders and their subordinates (Gil et al., 2011). The different models of positive leadership emerge as a productive area of theory and research, in response to the need for organizations to adapt to the new and changing context.

These models must face developments of two types: theoretical and methodological. From a theoretical perspective, the first challenge posed, faced with the proliferation of different conceptual approaches, is the difficulty of creating an integrated theory of leadership (VanVught, Hogan & Kaiser, 2008; Yukel, 2010). This is especially relevant in the case of the different varieties of positive leadership. Future research should take into account the consolidation of these models and their hypothetical unification into a theory of positive leadership, with a broader scope, which integrates all of these perspectives. This is relevant because some of the types of leadership mentioned show, simultaneously, conceptual overlaps (Killburg & Donohue, 2011) and remarkable differences (Brown & Treviño, 2006). In parallel, the need emerges to investigate the components associated with each of these leadership models, including the leader, the followers, the context and the levels of interaction (Avolio et al., 2009).

In line with the above, although the efforts to understand the mechanisms explaining the different types of positive leadership have increased, the research results have not been integrated. Furthermore, the studies carried out analyse different types of mediators which makes the task even more complex. Therefore, more effort is required in integrating the results as well as a reduced interest in the mediating variables (Judge et al., 2006).

Another theoretical area of interest is the evolution of some styles of positive leadership. In general, research has paid scant attention to those variables that contribute to or inhibit the development of this leadership. We need to generate research that determines how to accelerate the emergence and development of positive leadership. There is empirical evidence that transformational leadership, which is the positive leadership

model that has the most theoretical support, can be taught through training programs on the basic skills it involves. The behaviours of leaders can be moulded by this type of learning and they can have a positive impact on organizational performance (Dvir et al., 2002; Kirkbride, 2006). However, research needs to validate both the nature of the development of transformational leadership and the other forms of positive leadership, in at least two directions; the first refers to the duration of the effects of the training; and secondly, it is necessary to determine what intervention techniques are used to facilitate the emergence of this style of leadership (Cruz-Ortiz et al., 2013b).

From a methodological perspective, it is necessary to develop new approaches to the study of positive leadership. The research must use mixed methodologies that allow a better understanding of the phenomenon. Quantitative strategies for the study of leadership have dominated the literature and are the most common approach today (Stentz et al., 2012). Although attention to qualitative methods is increasing, it is still insufficient; moreover, these methods need to be combined with existing quantitative studies. Research in organizational psychology has benefited from this methodological combination to make theoretical progress. This mixed approach turns out to be especially important in the case of the study of positive leadership (Bryman, 2004).

Also, it is noted that in the literature on positive leadership there is an abundance of correlational and cross-sectional studies, from which causal inferences are extremely difficult to establish. A set of longitudinal studies, addressing different components of the transformational leadership style, has been generated. Leadership is a dynamic phenomenon whose evolution, therefore, has to be analyzed over time (Mullen & Kelloway, 2009; Tafvelin et al., 2011). However, the outcome of the research is still insufficient and is mainly focused on this specific type of positive leadership, somehow neglecting the other forms of leadership. These studies provide valuable information on the occurrence and withdrawal of certain behaviours related to positive leadership, the continuity of these behaviours, individual changes and, eventually, their potential predictive ability (Farrington, 1991).

Another methodological point of interest is represented by the fact that multilevel analysis has been established as a technique of growing importance in the field of leadership (Yammarino et al., 2005). Studies on positive leadership should start to incorporate different levels of critical analysis beyond the individual, such as the dyad, the group and the organization (Yammarino & Bass, 1991).

Moreover, the lack of a strict consensus on the conceptual definition and theoretical framework, which would encompass each of the different types of leadership analysed, has caused some confusion about the operationalization of the constructs suggested. Currently, there are various multidimensional measuring instruments, and while some of them have extensive validation and empirical support, the psychometric properties of others require much more rigorous research and psychometric support, as highlighted by some authors (Antino, Gil, Rodríguez-Muñoz & Borzillo, 2014).

Finally, we would like to point out that positive leadership has become the dominant approach in the study of leadership in organizations. Probably one of the key causes of this growth is that this kind of leadership, with its emphasis on intrinsic motivation and the positive development of followers, represents a more productive and efficient vision in managing today's complex organizations. Followers not only seek inspirational leaders to guide them in an uncertain and volatile environment, but they also want to deal with challenges in their own personal development (Bass & Riggio, 2006).

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# CONTRIBUTIONS FROM POSITIVE ORGANIZATIONAL PSYCHOLOGY TO DEVELOP HEALTHY AND RESILIENT ORGANIZATIONS

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El objetivo de este trabajo es presentar los principales resultados obtenidos por el equipo de investigación WANT Prevención Psicosocial y Organizaciones Saludables sobre el Modelo HERO (HEalthy & Resilient Organizations) para conceptualizar, evaluar e intervenir en el desarrollo de personas, grupos y organizaciones positivas. En primer lugar, se presenta el modelo teórico, metodología y herramientas para la evaluación de HEROs. Estas herramientas se administran a nivel colectivo y se aplican a diferentes stakeholders o agentes clave en la organización: entrevistas a dirección, y cuestionarios dirigidos a empleados distribuidos en grupos naturales, supervisores, y clientes. En segundo lugar, se presentan los principales resultados obtenidos de la aplicación de la metodología HERO en diferentes contextos socioeconómicos. En la última parte del trabajo se muestran distintas opciones de intervenciones positivas, así como recientes experiencias de intervención HERO que se han llevado a cabo desde nuestro equipo bajo el paradigma de la Psicología Organizacional Positiva.

**Palabras clave:** Organizaciones saludables, Resiliencia organizacional, Evaluación, Intervención, Psicología Positiva.

The aim of the current paper is to show the main results obtained by the WANT Research team on the HERO Model (HEalthy & Resilient Organizations) to conceptualize, evaluate and intervene in the development of healthy and positive people, groups and organizations. First, we present the theoretical model, methodology and tools to evaluate HEROs. These tools are collectively administered and applied to different stakeholders in the organization: interviews with CEOs, and questionnaires aimed at employees distributed in natural groups, supervisors and clients. Secondly, we present the main results obtained from the application of the HERO methodology in different socio-economic contexts. The last part of the paper is dedicated to highlighting the different options of positive interventions, as well as recent experiences in the HERO intervention carried out by WANT based on Positive Organizational Psychology.

**Key words:** Healthy organizations, Organizational resilience, Evaluation, Intervention, Positive Psychology.

## THE HERO MODEL OF HEALTHY AND RESILIENT ORGANIZATIONS

We know that psychology has focused almost exclusively on pathology, on “what’s wrong” in people, groups, organizations and societies. This is a reality that is reflected throughout all of the contributions in this special issue and we will not dwell on it here. We simply note that this focus on the negative side, on the problems, may lead one to think that we human beings, groups, organizations and societies in general, are exempt from positive traits such as optimism, hope, creativity, and responsibility, among others.

The reality, however, is different: the human being is complex and to address this complexity a psychology is necessary that not only attends to the problems but also goes further, i.e., it allows us to fortify and endorse the strengths of people in all areas of their life including the work context. In this regard, we

believe that modern organizations enable this positive approach to have an increased meaning and applicability. Positive organizations know that to survive we need to change our way of thinking and to open towards the positive, understood in the broad sense, as we stated in the introduction to this special issue. Only in this way will organizations successfully get their workers to be more positive, that is, to be proactive, show personal initiative, collaborate with others, take responsibility for own career development and commit to excellence and social responsibility. To achieve this goal, it is necessary to put in place an entire positive organizational mechanism.

It is here that Positive Organizational Psychology (POP) appears, arising from the combination of the concept of holistic health applied to the specific context of work. We have defined it as the scientific study of the optimal functioning of the health of individuals and groups in organizations, as well as the effective management of psychosocial well-being at work and the development of organizations in order to become healthier. Its aim is to describe, explain and predict optimal performance and to amplify and enhance psychosocial well-being and the quality of work and organizational life (Salanova, Martínez, & Llorens, 2005, 2014). Its *raison d’être* is to reveal the characteristics that make up a full organizational life, that is, to answer two key questions: what characterizes positive employees and what are positive organizations like? In addition, it considers these characteristics at different levels, not only individually, but also at the inter-individual, group, organizational and social level!

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From POP, the intention is to promote the development of positive organizations to commit to the development and promotion of health in a comprehensive, interdisciplinary and multi-causal way. Positive organizations are those seeking organizational excellence and financial success; but they go beyond that because they enjoy a physically and psychologically healthy workforce that is able to maintain a positive working environment and organizational culture, particularly during periods of turbulence and change, and are able not only to survive in these critical periods but also to learn lessons and emerge even stronger (Salanova, 2008, 2009; Salanova, Llorens, Cifre & Martínez, 2012; Salanova, Martínez & Llorens, 2014).

In this context the concept emerged of the Healthy and Resilient Organization or the HERO, which refers to these positive organizations that are characterized by the binomial of health and resilience. We have defined a HERO as an organization that conducts systematic, planned and proactive actions to improve the processes and results of both the employees and the organization as a whole. In addition, they are resilient because they maintain a positive adjustment under challenging circumstances, they are strengthened in adverse situations and under pressure they are able to maintain their performance and results. These efforts involve the implementation of healthy resources and organizational practices that seek to improve the working environment, especially in times of turbulence, with the aim of developing the health of employees and the financial health of the organization (Salanova, Llorens et al., 2012).

This HERO model, which guides the evaluation and

development of Positive Organizations (understood as healthy and resilient) is not based on a theoretical vacuum. It is a heuristic model that integrates empirical and theoretical results coming from different areas such as, for example, work stress, human resource management (HRM), organizational behaviour, and positive organizational psychology (POP). Specifically, the HERO model has been developed based on previous research from 2004 to the present, primarily through the studies of Wilson, DeJoy and colleagues (DeJoy et al., 2010; Wilson et al, 2004), the Job Demands-Resources Model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004), the Social Cognitive Theory of Albert Bandura (Bandura, 2002), the COR Model (Conservation of Resources) by Steven Hobfoll (Hobfoll, 2001) and the broaden-and-build theory of positive emotions by Barbara Fredrickson (Fredrickson, 2001).

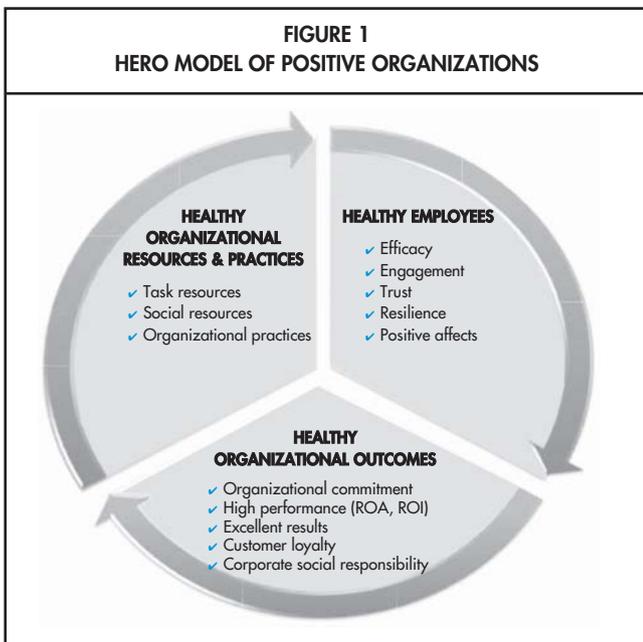
Our HERO model (Figure 1) proposes that an organization is positive when it has three components that interact with each other, such that if you invest in one it can lead to positive benefits in the others:

- 1) *Healthy organizational resources and practices*, understood as resources of the task (e.g., autonomy) and the working group (e.g., social support), as well as strategies to structure and organize the work (e.g., communication strategies). It is proposed to invest in healthy organizational practices (e.g., reconciliation of the work-life balance, prevention of mobbing, psychosocial health, organizational communication) as well as in healthy resources, especially in autonomy, feedback, supportive climate, teamwork, coordination and in promoting positive and transformational leaders.
- 2) *Healthy employees and working groups* that enjoy high levels of psychosocial well-being in terms of efficacy beliefs, positive emotions, engagement at work<sup>2</sup>, and resilience.
- 3) *Healthy organizational outcomes* such as high performance and organizational excellence, good relations with the organizational environment and the community, and corporate social responsibility (Salanova, Llorens, et al, 2012; Salanova, Martínez & Llorens, 2014).

Based on this theoretical model we have also developed a HERO methodology that has been scientifically validated to promote positive organizations. In a study with a sample of 303 teams and their immediate supervisors from 43 companies, we confirmed the factorial structure of three-dimensional model. Using data aggregated at the collective level, we validated a structural equation model where the block of healthy employees fully mediate the relationship between resources/practices and healthy results, which gives it *a priori* the capacity to forecast and develop HEROs empirically that must be tested using longitudinal research designs (Salanova, Llorens et al., 2012).

The model has a number of competitive advantages over more traditional approaches. These advantages are presented below and comprise the idiosyncrasies of the methodology (see

**FIGURE 1**  
**HERO MODEL OF POSITIVE ORGANIZATIONS**



<sup>1</sup> More information and further development of this point can be found in Llorens, Salanova and Martínez (2008); Salanova, Martínez and Llorens (2005, 2014).

<sup>2</sup> We understand engagement as a positive psychological state characterized by high levels of energy and vigour, dedication and pride in one's work, as well as absorption and enjoyment (Salanova, Schaufeli et al., 2000).



Llorens, Salanova, Torrente & Acosta, 2013; Salanova, Llorens, Torrente & Acosta, 2013).

1. It invites the various “actors” in the organization to participate. The perception of the directors, groups of workers, their supervisors and the customers themselves are key to evaluating a Positive Organization. Only in this way it is possible to assess the health of the organization as a whole, attending to the valuations of the teams and organizations from a global, collective, multifaceted and complex perspective.
2. It combines multiple methodologies, which gives it greater impact. Specifically, it uses a combination of both qualitative methodologies, by means of semi-structured interviews with managers, and quantitative methodologies by means of questionnaires (on paper or online) to employees, supervisors and customers/users.
3. It emphasises the group and organizational nature of the measuring instruments, which is a novel and pragmatic approach to the study of occupational health, as well as the use of objective financial indicators (e.g., Return On Assets - ROA).
4. It favours the analysis and processing of data gathered collectively (and not only individually as has been done so far), following a multilevel perspective, that is, considering the perception that employees have of their work teams, their supervisors and the organization as a whole. This offers results that are closer to the work situation since not only ideographic or subjective aspects are considered, but also the interactions established with the people with whom they work.
5. It presents a macro view that enables the integration in a single evaluation of different levels of analysis (organizational, group and individual) and the studying of organizational phenomena that it would not be possible to study outside this comprehensive perspective.

As discussed above, the HERO battery combines quantitative and qualitative instruments and it is applied to different key players. Next we describe the differentiators of these instruments.

1. Qualitative measures. These are obtained through semi-structured interviews with the directors and they mainly cover two topics: healthy organizational resources and practices, and healthy organizational results. The interviews are analysed using content analysis. This task is carried out by trained and independent coders with the goal of creating a reliable and valid system of mutually exclusive categories. Healthy organizational resources and practices are categorized according to the ERCOVA project (Responsible Company of the Valencian Community) which promotes the Corporate Social Responsibility (CSR) of companies as part of the European project EQUAL.
2. Quantitative measures. These are carried out by administering three questionnaires (with collective measures) that are answered by employees, supervisors and customers. The questionnaires of employees and supervisors include 21 scales that refer to the three main dimensions of the HEROs: healthy organizational resources and practices, healthy employees, and healthy organizational outcomes. In all cases the reference is collective. This means that employees fill in the questionnaire thinking about the organization (i.e., ‘In

this organization...’) and the team (i.e., ‘My team...’), while the immediate supervisor thinks about the organization (i.e., ‘In this organization...’) and the team he/she oversees (i.e., ‘The team I supervise...’). Finally, the questionnaire for clients includes four measures on positive organizational results, specifically of quality of service: employee job performance, employee empathy, loyalty and customer satisfaction. The scales are measured using a 7-point Likert scale ranging from 0 “never” to 6 “always.” In the following sections of this article we will offer the main results obtained in the research on HEROs with regard to positive evaluation and intervention in organizations.

### EVALUATION OF POSITIVE ORGANIZATIONS USING THE HERO METHODOLOGY

The HERO model is the result of decades of study and research by the WANT team. We focus primarily on our concern for the well-being and full development of the potential of the individual in their working environment, on the analysis of psychosocial factors and the importance of evaluation and optimization. Based on a model of global assessment of psychosocial factors, psychosocial evaluation encompassed not only psychosocial risks in the work environment, or what does not work well at work, but also the positive aspects of work: that which works but can be improved. From this perspective, using the RED (Resources-Experiences-Demands) model, we obtained key results in our research that we consider antecedents to the HERO model. These include the design and validation of scales, the establishment of the model both in its negative (ill-being) and positive branches (well-being) or the identification of demands and resources including personal resources (for more information see Salanova, Martínez & Llorens, 2014; Martínez, Salanova & Llorens, 2016).

The research carried out with the HERO model is based on the conceptual development and the definition of healthy and resilient organizations, as well as the stability and validity of the HERO model that has been scientifically validated at the empirical level, as discussed above (Salanova, Llorens et al., 2012). Now, as to the three main blocks of components of the HERO model (Organizational resources and practices, Healthy employees and groups and Healthy organizational results) our research has highlighted the interdependence between them and the fact that improvements in any one area affect the others. Our results indicate that organizations that optimize their resources and develop healthy organizational practices result in healthier employees and work teams, endowed with great potential and well-being, which results in excellent organizational results in relation to both the performance of workers and that of the teams and the organization in general. In this context and, given the strong collective nature of work today, it is important to consider a collective perspective, which, based on group perceptions and experiences, establishes causal relationships in relation to the three blocks of variables of the HERO model. This consideration has been substantiated with empirical research that justifies the use of these collective variables (Gil, Llorens & Torrente, 2015; Torrente, Salanova & Llorens, 2013).



Regarding the first block of elements, *organizational resources and practices*, the research has focused on identifying the most important resources and practices. A study conducted by qualitative analysis (analysis of the content of interviews conducted in 32 Spanish companies from various economic sectors) revealed that the practices of communication and skills development, and promoting health and safety at work from the perception of managers and/or human resources managers were those most used and most useful. In addition, the provision of *resources* such as autonomy, feedback, social support, teamwork, etc. and *organizational practices* such as transformational leadership, work-life balance, etc. are positively related to more effective, engaged and resilient workers and teams, which in turn have good performance, not only referring to their tasks but also outside of their role; they produce results of better quality, provide better service and create customer loyalty (Salanova, Llorens et al., 2012; Salanova, Martínez & Llorens, 2014). The robustness of the results increases when the different levels of evaluation are taken into account and, as well as considering the perceptions of workers, the perceptions of other stakeholders in the organization, such as supervisors or leaders and customers/users, are also included. From this perspective, the results show that transformational leadership, considered one of the main social resources, has a positive effect on the levels of self-efficacy and engagement of workers both individually and collectively, increasing their levels of organizational trust (Acosta, Salanova & Llorens, 2012; Acosta, Torrente, Llorens & Salanova, 2013) and the performance both within the role and outside of it (Cruz, Salanova & Martínez, 2013). Workers not only carry out their duties correctly but also their performance is exceeded as they “go the extra mile” (Meneghel, Salanova & Martínez, 2016; Salanova, Llorens, Torrente & Acosta, 2013). On the other hand, the organizational practices are antecedents and they are positively related to the engagement of workers. Specifically, organizational practices related to psychosocial health, the development of skills and the career development of workers produce the most contributions and therefore it is these on which human resources management should concentrate its efforts with the aim of increasing the engagement of workers.

Regarding the second component of the model, healthy employees and working groups and referring to employees and teams with high psychosocial well-being (high levels of efficacy beliefs, positive emotions, work engagement, optimism, resilience, etc.), the results have shown the power of personal resources such as self-efficacy, which affects the relationship between the leadership functions performed by the supervisors and the engagement of the workers in the group (Tripijana & Llorens, 2015). Furthermore, when efficacy is considered at group level (i.e., collective efficacy beliefs) it is an antecedent of flow (Salanova, Rodríguez, Schaufeli & Cifre, 2014). The level of employee psychosocial well-being is a key element in the model since on many occasions its mediating effect has been demonstrated between organizational resources (block 1 of the model) and results (block 3 of the model). The good use of resources and the effect of organizational practices can be enhanced through the well-being of workers. Thus, the level of

engagement and the perceived competence of the worker mediate the relationship between the good use of organizational facilitators or resources and quality of service. For a good use of these organizational facilitators, there must be an adequate level of engagement and the perception of good professional competencies (Gracia, Salanova, Grau & Cifre, 2013).

Similarly, transformational leadership has a positive effect on the performance of work teams through collective engagement and it shows that the performance of the leader does not have so much of a direct action on the team’s performance, but works more through motivational states such as engagement (Cruz, Salanova & Martínez, 2013). The mediating role of engagement has also been shown in the case of the relationship between the perceptions of organizational justice and organizational citizenship behaviours. Achieving a supportive work environment and civic behaviours is important for teams, and the perception of organizational justice affects the appearance of these behaviours. However, the direct effect of these perceptions on citizenship behaviour occurs when there is an appropriate level of the workers’ engagement (Rodríguez, Martínez & Salanova, 2014). Also other indicators of healthy employees and groups such as resilience and satisfaction mediate the relationship between the perceptions that workers have of their organizational social context and performance. Again psychosocial factors, such as resilience and satisfaction, are necessary to facilitate the effect of the resources (Meneghel, Borgogni, Miraglia, Salanova & Martínez, 2016).

As for the third block of the HERO model, *healthy organizational results*, on the one hand the research has focused on analysing the results that relate to the high performance or excellent performance of employees and work teams, attempting to identify their antecedents in order to understand the underlying psychological processes. As shown in the previous paragraph, referring to healthy employees, indicators of well-being are positively related to performance acting either as direct antecedents or as mediators. This has highlighted the importance of having work and personal resources that favour a high level of engagement as these variables are antecedents to good performance (Lorente, Salanova, Martínez & Vera, 2014). The importance of the affective aspects of work has also been proved. The work teams that experience positive group emotions and have high levels of collective resilience obtain better performance when evaluated by their supervisor; which indicates the need to provide work experiences that produce positive emotions shared by the teams (Meneghel, Salanova & Martínez, 2016). The same effect is produced by collective engagement; teams with more collective engagement perform better both within their role and outside of it (Torrente, Salanova, Llorens & Schaufeli, 2012).

On the other hand, in addition to performance as an element in this block, the organizational results relate to other organizational aspects evaluated by both the workers as well as the customers and users of organizations. In this regard, it has been shown that the quality of service in health organizations depends on the level of well-being of workers. The positive emotions and engagement of workers mediate the relationship between perceptions of self-efficacy, or what the worker believes

they are capable of, and the quality of service they offer. The perceptions of professional competence of employees are critical to providing a good service, however our research shows that this relationship is not direct, but requires some level of engagement from workers. In the same way, the relationship has been shown between the positive emotions and empathy of workers in SMEs and the quality of service delivered (Bustamente, Llorens & Acosta, 2014).

#### POSITIVE INTERVENTIONS BASED ON THE HERO MODEL: PRELIMINARY RESULTS

In Positive Psychology the intervention is understood as the design and implementation of different positive strategies that are implemented by the teams and organizations in order to improve their performance and satisfaction with the aim of promoting health, quality of work life and organizational excellence following the scientific method. To this end, a positive intervention is necessary to cultivate the whole person, attending to the positive cognitive, emotional and behavioural aspects (Sin & Lyubomirsky, 2009).

Positive interventions can be classified taking into account the focus and purpose of the intervention. With regard to the *focus* we can speak of collective interventions that are directed at the organization as a whole (perhaps these would be the genuine interventions in the organizational context) that can be complemented by interventions at the personal level, which can be generalized to the private sphere. With regards to the *objective*, interventions are primary when they are aimed at achieving the optimum performance and satisfaction of individuals, groups and organizations, and they are secondary when they refer to the extra efforts that are made over time to achieve and maintain the maximum performance, health and satisfaction in teams and organizations.

Despite the fact that positive interventions applied to the organizational context are in the early stages, there are some basic guidelines that facilitate the success of positive interventions (see Llorens et al., 2013; Salanova, Martínez & Llorens, 2014):

- 1) Prepare the work environments, which involves incorporating interventions into the general policies of the organization, ensuring the full commitment of the organization, promoting the mechanisms of information and participation of the different actors and taking advantage of the wisdom of the organization.
- 2) Design the intervention, planning it realistically, raising the objectives and hypotheses based on valid and solid scientific theories, intervening in organizations or teams at random, and focusing strategies at the collective level and based on the previous results of the evaluation.
- 3) Implement and test the effectiveness of the intervention by conducting field studies and quasi-experimental studies, longitudinal designs with multiple levels of analysis and multiple key agents; where an analysis is carried out and collective intervention strategies are proposed and where different types of qualitative data analysis (e.g., interviews) are combined with quantitative data analysis (e.g., questionnaires).

- 4) Ensure the maintenance over time, which implies assessing the real impact of the intervention, focusing on the real transfer of the intervention to the current jobs, ensuring the protection and confidentiality of the data and institutionalizing the services promoting the overall health of the organization proactively as a strategic objective of the organization.

In general, we can differentiate 12 positive actions focused at the level of the individual (see Llorens et al., 2013; Martínez, Salanova & Llorens, 2016; Salanova et al., 2013a, 2013b):

- 1) Identification of and daily practice in the work of *key strengths* (VIA-IS <https://www.viacharacter.org/www/>) and especially the ability to find meaning and passion at work, i.e., “engagement”.
- 2) Showing *kindness* to peers, supervisors or customers through simple behaviours such as taking a coffee to a colleague, sending an email or assigning two companions to instigate a day of kindness.
- 3) *Expressing gratitude* by sending a thank you letter (or e-mail) addressed to someone important at work, “liking” something on Facebook, writing a gratitude journal or establishing an employee appreciation day.
- 4) Learning to *forgive* by writing a letter (or email) of forgiveness (it is not necessary to send it), forgiving in an imaginary way or feeling compassion for the person who has hurt us to free ourselves from suffering.
- 5) *Sharing positive news* with peers, supervisors and clients, taking advantage of “coffee time”, the use of social networks, celebrations of successes, birthdays, commemorations, awards, etc.
- 6) *Taking care of social relationships* practicing simple behaviours of “good morning”, socializing in work breaks, sharing moments of “coffee and biscuits”, and helping others when necessary.
- 7) *Reflecting on the positive*, identifying the happiest moments you have experienced today with your co-workers both inside and outside of work and the emotions you are feeling.
- 8) *Cultivating realistic or intelligent optimism*, by visualizing and writing a letter about the improved “future me” at work or making a post-it note tree on which optimistic sentences are written.
- 9) *Practising mindfulness* in the present moment (e.g., focusing on our breath).
- 10) *Setting personal goals* that are intrinsically rewarding, harmonious and authentic, writing the personal legacy that one wishes to leave before leaving the company, critically examining one’s commitment to the objective and breaking it down into other more accessible goals.
- 11) *‘Becoming more resilient’*, that is, developing the capacity to adapt positively in contexts of great adversity, implementing mechanisms for coping with the threatening situation, where changes are perceived as an opportunity rather than a threat.
- 12) *‘Relishing’*, prolonging and enjoying the good moments, sharing them, and recalling them afterwards, in order to re-live them positively once more.

When the focus of the interventions is collective, that is, they

are directed at the organization and teams, three basic positive actions are emphasized (Llorens et al., 2013; Martínez, Salanova & Llorens, 2016; Salanova et al., 2013a and b):

- 1) A *Positive Audit*, which involves attracting and retaining talent based on the strengths of the employees, the management of the psychological contract (the implicit exchange between the employer and the employee whose contents are negotiated, planned and evaluated periodically by carrying out an Employee Development Agreement), HERO audits (interviews with management and administering questionnaires to employees, immediate supervisors and customers/users) and the development of appreciative inquiry as a process of identifying, focusing and releasing the potential within the organization based on an appreciation of the strengths of individuals, groups and the organization with the aim of increasing the potential of the strengths and “exceptional” performance.
- 2) *Making changes in the workplace* that involve investing in task resources (e.g., autonomy, variety, feedback), social resources (e.g., social support, transformational leadership, teamwork, coordination), and organizational practices (e.g., trust, fairness, work-family balance, communication) and introducing positive changes at work (e.g., reorganization into different and challenging jobs, rotation, assignment to special projects).
- 3) *Positive Psychology Coaching* or the learning process in which the coach works on the client’s strengths to develop their potential, empowering them to achieve their goals, either to promote cooperation between the members of a team (*team coaching*) or to accompany the leader in improving their professional performance, well-being and efficiency of the organization (*executive coaching*).

Despite the need to implement and evaluate the efficacy of the positive interventions in organizations, not much investigation has been carried out yet. In the WANT team, we are currently developing several research projects (Program of Excellence in Research of the Generalitat Valenciana PROMETEO, #PROMETEO/2013/025; National Plan of R & D & I of the Ministry of Economy and Competitiveness, #PSI2011-22400 and Universitat Jaume I, #P1·1B2014-40 and the PREVENT Foundation project, 151194.01 / 1) which aims to design, implement and evaluate the efficacy of group and organizational intervention strategies based on Positive Psychology.

In some of these projects we have already begun to implement these interventions and we have obtained some results. For example, Coo, Ortega, and Salanova (2015) conducted an intervention based on Mindfulness lasting three sessions based on the Mindfulness Based Cognitive Therapy (MBCT) Model of the University of Oxford. There were 19 participants in the intervention while the control group consisted of 15 people in waiting list format. The repeated measures ANOVA analysis indicated that there are significant differences in the development of mindfulness as a characteristic, happiness and performance in those people who had participated in the intervention compared with the workers on the waiting list.

In another study, Coo and Salanova (2016) conducted a pilot study of positive intervention entitled “Development of corporate

competencies based on Mindfulness” that focused specifically on developing personal strengths applied to the organizational environment in combination with the development of mindfulness as a strategy for promoting happiness, engagement and emotional intelligence in a company dedicated to supplies and services to the healthcare sector. Workers at all levels of the organization participated in this intervention (n = 17) for a period of 8 weeks. The results showed significant improvements in the levels of trait mindfulness and the levels of engagement (vigour, dedication and absorption), emotional intelligence and happiness after finishing the intervention.

Finally, in another study conducted with a pre-professional sample different interventions were tested, aimed at developing positive resources (psychological capital and positive coping strategies) in a sample of 106 university students (3 target groups and one group to which a neutral intervention was applied) who participated in a workshop on personal and professional growth organized by the *UJI-Saludable* program. The results showed an increase in the levels of well-being of the students in the control group, with the most effective strategies being the ones in which the intervention occurred jointly on both resources and the ones in which a micro intervention was combined with daily practice (Ortega-Maldonado, Solares, Meneghel & Salanova, 2016).

## CONCLUSIONS AND PRACTICAL IMPLICATIONS

In this article we have addressed a topic of current interest which involves a challenge, i.e., how to assess and develop positive organizations. Based on the models proposed by Positive Organizational Psychology, analysis, evaluation and intervention can be carried out in organizations, in order to move towards more positive, healthier and more resilient organizations.

The main conclusions reached in this article are as follows:

- 1) A positive organization is one that is characterized not only by its organizational excellence, financial success and excellence, but also because it has a physically and psychologically “healthy” workforce that is able to maintain a positive work environment and organizational culture, particularly during periods of turbulence and social and economic changes.
- 2) A positive organization comprises fundamental elements that relate to each other mutually: healthy resources and practices, healthy employees and excellent organizational results. In addition, the community relationships of these organizations are also excellent.
- 3) We can assess positive organizations based on theoretical models and scientific methodologies such as the Healthy and Resilient Organization (HERO) Model and its methodology of assessment and intervention. The application of this methodology involves the use of different evaluating agents, different methodologies for collecting and analysing data and it provides results in terms of psychosocial health indicators as well as organizational outcomes.
- 4) The validity and appropriateness of the model allows the identification of variables that are susceptible to intervention, with which, as well as assessing them, we can strengthen the



HEROs based on research designs regarding the efficacy of programs based on the science of psychology.

- 5) The scientific research, some of whose results are shown in this article, has shown that healthy and resilient organizations can be enhanced and promoted through practical strategies based on Positive Organizational Psychology; these are based on promoting and developing levels of positivity in their employees, teams and managers at the organizational level, while also implementing measures individually that workers can develop both within the organization and outside it.
- 6) The results show that positive interventions should focus on organizational assessment and then increasing the organizational resources and practices (rather than reducing the demands), in order to influence the levels of employee well-being (healthy employees and teams) and thereby improve the organizational results (performance and excellence).
- 7) There is a clear need to invest efforts to promote the psychosocial well-being of employees and encourage positive group experiences, as this facilitates all of the processes and relationships that are established between performance and organizational results and their antecedents.
- 8) Despite these advances in research on the efficacy of positive interventions, there is still a long way to go with regards to the best combination of specific intervention practices, their design, evaluation, development of specific protocols and the development of a decalogue of good practices that can be transferred to the professional world from R2P (Research to practice) and to ensure the success of positive interventions in the employment context.

Finally, we would like to point out that, in order to understand psychological well-being at work from a holistic approach, an interdisciplinary model is necessary for promoting the health and strengths of people in organizations and their overall functioning. We need a multi-causal model that integrates all of the elements involved in people's health and well-being and also considers the importance of the application of institutional measures in this regard.

Thus, positive interventions programs should be an integral part of the policies and culture of organizations that value, encourage and enhance health and well-being. Rather than the conception of the workplace as a place for business, commercial or productive exchange, it would come to be seen as a living space where people contribute their efforts, energy and competencies so that the organization can achieve its objectives, which are ultimately the objectives of everyone, and it would be considered that workers and senior managers must work together to make it a healthy environment where health, in the full sense of the word, is encouraged.

This is the basis of the approach to the promotion of health at work initiated by the WHO (World Health Organization) which is oriented towards the concept of the "healthy organization" and this is the foundation on which the project #EnPositivo by WaNT is built: a Technology Based Company (TBC) at the Universitat Jaume I that we have built in our WANT research

team and the OTP Foundation Group ([www.grupotp.org](http://www.grupotp.org)) with the aim of developing healthier and more positive individuals, groups and organizations, helping to promote well-being based on science, in order to develop communities of healthy practices and to help create a better world.

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# AMPLIFICATION IN THE WORKPLACE: BUILDING A SUSTAINABLE WORKFORCE THROUGH INDIVIDUAL POSITIVE PSYCHOLOGICAL INTERVENTIONS

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La sostenibilidad de la fuerza laboral es de vital importancia para la viabilidad y la ventaja competitiva de las organizaciones contemporáneas. Así, y en paralelo con el aumento de la Psicología Organizacional Positiva, las organizaciones han incrementado su interés en fomentar el bienestar psicológico positivo de sus empleados. En este trabajo, las intervenciones de amplificación –i.e. intervenciones que tienen como objetivo fomentar el bienestar positivo en el trabajo – se presentan como una herramienta valiosa para incrementar la sostenibilidad de la fuerza laboral. En la pasada década, se han desarrollado y probado la efectividad de algunas intervenciones realizadas en el contexto laboral centradas en la amplificación. En el presente trabajo, en primer lugar destacamos algunas precondiciones importantes para el éxito de las intervenciones y brevemente discutimos el proceso de intervención en sí mismo. A continuación, se presenta una revisión de los trabajos empíricos sobre las intervenciones de amplificación, centrándonos en intervenciones que tienen como objetivo fomentar el engagement en el trabajo de los empleados. La investigación futura debe centrarse en probar los efectos de este tipo de intervenciones sobre los resultados a nivel de equipo y a nivel organizacional.

**Palabras clave:** Bienestar psicológico positivo, Intervenciones de amplificación, Proceso de intervención, Engagement.

Workforce sustainability is of vital utmost importance for the viability and competitive advantage of contemporary organizations. Therefore, and in parallel with the rise of positive organizational psychology, organizations have become increasingly interested in how to enhance their employees' positive psychological well being. In this paper, amplification interventions – i.e. interventions aimed at enhancing positive work-related well being - are presented as a valuable tool to increase workforce sustainability. In the past decade, some work-related interventions focused on amplification have been developed and tested for their effectiveness. In this paper, we will first outline some important preconditions for successful interventions and briefly discuss the intervention process itself. Next, we will give an overview of empirical work on amplification interventions, focusing on interventions that are aimed at enhancing employee work engagement. Future research should focus on testing the effects of these type of interventions on outcomes at the team and organizational level.

**Key words:** Positive psychological well-being, Amplification interventions, Intervention process, Engagement.

**C**ontemporary organizations are facing dynamic and changing environments that emphasize the importance of flexibility, adaptation, and (social) innovation. Because of this, over the past 20 years, we have seen an increase in business and academic interest in building sustainable organizations that have the capacity to endure and simultaneously satisfy a triple bottom line of environmental, economic, and human performance. Yet, in comparison to the environmental and economic dimension of sustainability, substantially less attention has been focused on its human dimension (Spreitzer, Porath & Gibson, 2012).

At the same time, in most industrialized countries, the retirement age is raised due to the proportional increase of the elderly. So, the majority of workers will have to work for a prolonged number

of years while the influx of young workers in the labour market is declining. Lifetime employment is no longer guaranteed, as the qualifications that are required for jobs are becoming increasingly complex while, simultaneously, the 'half-life' of these qualifications is becoming increasingly shorter (van der Heijden, 2005). For all these reasons, workforce sustainability nowadays is of vital economical importance, as it directly affects the viability and competitive advantage of organizations. Particularly, highly innovative sectors of industry - e.g., knowledge-intensive firms – that have to cope with frequent technological (and organizational) changes as well as fierce international competition - are in need of a sustainable workforce (De Grip, Van Loo & Sanders, 2004).

Early definitions of employee sustainability conceptualized it in terms of the prospects to keep on working while retaining health and well being (Van der Klink et al., 2010), or in terms of adaptability to the myriad of work-related changes occurring in today's economy (Fugate, Kinicki & Ashfort, 2004). However, we would like to propose that merely being

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healthy and able to keep on working is not enough in today's business; nowadays, employees have to be motivated to 'go the extra mile' and have to be pro-active in (co)creating change by taking personal initiative and demonstrating creative and innovative work behaviour. In other words: work engagement is the key to employee sustainability in contemporary organizations.

### WORK ENGAGEMENT

Work engagement is defined as "a positive, active psychological state that is characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p. 295). Vigorous employees experience high levels of energy at work and motivation to invest effort in work. They are dedicated in being strongly involved into work and experiencing feelings of pride and enthusiasm about their work. Finally, absorption entails immersion in and concentration on work, as well as the feeling that time is flying while working. Employee work engagement has become very popular in science and practice, particularly as a consequence of the positive psychology movement, i.e. the science of positive subjective experience, positive individual traits and positive institutions (Seligman & Csikszentmihalyi, 2000). This movement was the starting point for a shift in focus from 'fixing what is broken' to 'nurturing what is best'. Moreover, empirical evidence indicates that employee work engagement is predictive of many important organizational outcomes. Examples of these outcomes include increased creativity, better in-role performance, reduced company-registered sickness absenteeism, increased organizational citizenship behaviors, better financial results at the company level, and increased client satisfaction (see for an overview: Demerouti & Cropanzano, 2010).

Not surprisingly, organizations have become increasingly interested in interventions to develop and sustain employee work engagement. These fall within the category of positive psychology interventions, that can be characterized as any intentional activity or method that is based on (a) the cultivation of positive subjective experiences, (b) the building of positive individual traits, or (c) the building of civic virtue and positive institutions (Myers, van Woerkom & Bakker, 2013). Broadly speaking, a distinction can be made between interventions that are primarily targeted at the organization and interventions that are primarily targeted at individual employees. In this paper, the focus will be on the latter type of interventions. In the following paragraphs, we will outline three types of individual positive psychological interventions to enhance employee work engagement, i.e. PsyCap interventions, Strengths-based interventions, and Happiness interventions. Before turning to a more detailed description of each of these three types of interventions, we will first outline some important preconditions for interventions and briefly discuss the intervention process itself.

### INTERVENTIONS: PRECONDITIONS AND PROCESS

The success of an intervention is not only dependent on its content, but also on the quality of the implementation process. An important precondition for success is to assure commitment for the intervention from the organization's (top) management, which in this case means that management acknowledges employee well-being as a core organizational value, and is willing to invest the necessary (financial) resources to develop and sustain it. Moreover, employees themselves should also be convinced of the benefits of high work-related well being both for themselves and for their organization.

Kompier and Cooper (1999) analyzed eleven European workplace interventions aimed at reducing work stress and identified several process variables that contributed to the success of these interventions. Interventions were more successful in sustaining employee well-being when: a proper risk assessment was performed using adequate instruments; organizations used a stepwise and systematic approach; there was a clear structure (tasks, responsibilities); consultants or researchers used a participative approach; management and representatives of employees co-operated; employees were recognized as 'experts'; the responsibility of management was emphasized; and monitoring and intervention were combined.

Regarding the implementation of an intervention, Bakker, Oerlemans and Ten Brummelhuis (2013) recommend to follow Van Strien's (1997) regulative cycle. The first phase in this cycle is the formulation of the goal of the intervention (e.g., engaged employees). The second phase is the diagnosis. In this phase, an analysis is made of the situation: what is the current level of employee engagement and what are its most important drivers? This phase should result in a diagnosis of the most important organizational and personal causes of (lack of) engagement. The third phase in the regulative cycle is the design of the intervention – this is called the action plan (Van Strien, 1997). What will be done to influence the drivers of engagement? What are the means to realize this? Phase four is the implementation of the plan or the intervention itself. In this phase, the plans that were made in the previous step are implemented. There will be monitoring of the progress by conducting assessments. Regular employee surveys provide a means of monitoring engagement and its fluctuations across locations, departments, and teams. In the final, fifth phase, the project is evaluated as regards its effects on the targeted outcomes as well as the intervention process itself. This phase answers the question, "How well did our intervention accomplish the objectives that were planned? Was the intervention effective? How efficient was it?"

Now that we have taken a closer look at the preconditions for intervening and the intervention process itself, it is time to address the three types of individual positive psychology interventions that could be used to enhance employee work engagement in more detail.

## AMPLIFICATION INTERVENTIONS

### *PsyCap Intervention*

Luthans, Youssef & Avolio (2007, p. 3) define Psychological Capital (PsyCap) as “an individual’s positive psychological state of development characterized by: (1) having confidence (self efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success.”. Psychological capital makes individuals put extra effort in the task they have to accomplish, motivates them to do so by letting them expect positive results, enables them to generate various solutions if problems occur, and makes individuals cope well in case of eventual setbacks (Luthans, Avey, Avolio & Peterson, 2010).

Several diary studies have demonstrated that daily levels of PsyCap-aspects are positively related to work engagement. In a study among flight attendants, Xanthopoulou et al. (2008) found that daily self-efficacy predicted daily work engagement. Moreover, the results of a study among employees of a fast-food company showed that daily optimism was also related to daily work engagement (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). Ouweneel, Le Blanc, Schaufeli and van Wijhe (2012) performed a diary study among university employees that showed that positive emotions felt after a working day predicted how hopeful employees were regarding their work at the start of the next working day. Furthermore, the level of hope at the start of a working day appeared to have a positive effect on all three dimensions of work engagement at that same day. In a longitudinal questionnaire study among university employees, Ouweneel, Le Blanc & Schaufeli (2012) found that personal resources (i.e., hope, optimism and self-efficacy) were reciprocally related to positive emotions, and that personal resources predicted employees’ level of work engagement six months later. Though these studies demonstrate that the separate aspects of PsyCap are related to (dimensions of) work engagement, Sweetman and Luthans (2010) propose that the overall PsyCap factor will have greater predictive power for work engagement than each of the four psychological resources separately because of their synergistic power. Recently, Boamah and Laschinger (2015) showed that overall PsyCap is significantly related to new graduate nurses’ work engagement.

The important question then is whether PsyCap is malleable and can be increased in order to improve work engagement and other positive work outcomes. Several studies show that PsyCap can indeed be developed through targeted interventions (e.g., Luthans, Avey & Patera, 2008). Luthans, Avey, Avolio, and Peterson (2010) provide a detailed description of what such an intervention might look like. They assigned participants randomly to treatment ( $N = 153$ ) or control ( $N = 89$ ) groups. In the

intervention treatment, the facilitators used a series of writing, discussion, and reflective exercises specific to each of the four PsyCap constructs to impact PsyCap development. Examples of the exercises used included one that focused on broadening the hope-oriented self-regulating capacity and pathways thinking toward a specific goal. First, each participant was asked to consider and then write down personal goals. The facilitator led participants through a series of techniques to set and phrase goals to increase agentic capacity (Bandura, 2008). This included parceling large goals into manageable units, thereby also increasing efficacy over smaller subgoals. Next, participants were asked to consider multiple pathways to accomplishing each goal and to share those pathways in small discussion groups within the intervention session. In other words, the participants acted as models for each other. Thus, the capacity for pathway generation was expected to be increased through vicarious learning and in turn to enhance participants’ level of efficacy in utilizing the hope application of deriving multiple pathways to accomplish a given goal. In addition, by increasing their efficacy to accomplish the goal, the participants were expected to increase their positive expectations of goal accomplishment (i.e. their optimism). In a study on the effects of a ‘personal effectiveness training’, Demerouti, van Eeuwijk, Snelder and Wild (2010) demonstrated that by using methods like mastery and successful experiences, stepping, vicarious learning and social persuasion/positive feedback, a personal effectiveness training led to significant increases in both self-rated and other-rated PsyCap-levels. Finally, Hodges (2010) found that a PsyCap micro intervention among managers led to increases in PsyCap levels among their subordinates over a six-week period, which he interpreted as preliminary evidence for a contagion effect. Haar, Roche and Luthans (2014) found further evidence for a contagion effect, i.e. a reciprocal transfer over of leaders’ PsyCap and their follower teams’ collective PsyCap and work engagement. Moreover, their results showed that follower teams influenced their leaders’ PsyCap and engagement more strongly than vice-versa.

### *Strengths-based Interventions*

Strengths-based interventions are aimed at identifying and developing personal strengths to help a person to become more effective and more successful. Strength-based interventions work on the premise that people have abilities and internal resources that can be utilised to achieve remarkable outcomes, when understood and applied correctly. Individual strengths can be defined as positive traits reflected in thoughts, feelings, and behaviors (Park, Peterson & Seligman, 2004). Examples are curiosity, bravery, kindness, and gratitude. Strengths exist in degrees and can be measured as individual differences. Using strengths is intrinsically motivating, engaging, satisfying, enjoyable, energizing and favorable for the health of an individual (Linley & Harrington, 2006; Peterson & Park, 2006; Peterson & Seligman, 2004). Some studies empirically proved

the positive effects of employing strengths, such as enhanced well-being (Govindji & Linley, 2007; Quinlan et al, 2011), self efficacy (Govindji & Linley, 2007) and engagement in activities (Harzer & Ruch, 2012). Van Woerkom, Oerlemans, and Bakker (2015) showed that self-efficacy fluctuated significantly at the intrapersonal, daily level, as a function of strength use on a daily basis, which in turn positively related to daily work engagement among a sample of civil engineers. Several tools for assessing an individual's strengths have already been developed, such as the Virtues-in-Action Classification of Individual Strengths (VIA-IS; Peterson & Seligman, 2004). This test identifies 24 strengths that people may possess to various degrees such as leadership, love of learning, and creativity. Another often-used instrument to detect strengths is the Clifton Strengths Finder (CSF) developed by Gallup. This is a talent-based framework and contains 177 items designed to measure talent in 34 possible themes (Asplund, Lopez, Hodges & Harter, 2007).

Despite the benefits of using one's strengths, only one-third of all individuals are capable of identifying their own strengths (Hill, 2001). Moreover, many people note that they do not use their strengths very often at work (Buckingham, 2007). To stimulate people to identify and make more use of their strengths, organizations can implement strengths interventions. A strength intervention can be defined as 'a process designed to identify and develop strengths in an individual or a group. Interventions encourage individuals to develop and use their strengths, whatever they may be' (Quinlan et al., 2011, p. 1147). This definition includes three components (Verhulst, 2014): The first component, strengths identification, generally results in a list of most important strengths. The second component is strengths development, in which individuals are motivated to cultivate and refine their strengths (Van Woerkom & Meyers, 2015). According to Biswas-Diener, Kashdan and Minhas (2011), it is important that individuals learn how they can use their strengths in a wise way, depending on situational factors. The third component is the use of strengths, in which individuals are stimulated to specify how, how often, when, and in which situation they plan to use their strengths by making a concrete action plan (Van Woerkom & Myers, 2014). In this way, individuals are encouraged to use their most outstanding strengths more or in new ways (Seligman, Steen, Park & Peterson, 2005). Strength interventions thus combine two approaches towards the strengths of an individual: the 'identify and use' approach that views strengths more as constant traits, and the 'strengths development approach' that views strengths as personal capacities that can grow when individuals try to apply their strengths in the most effective way. Strengths-based interventions may focus on individual strengths, such as reflecting on times when a person was at his/her best and the strengths he/she used then; identifying signature strengths; or a combination of identifying and using strengths in a new way

(Seligman, Steen, Park, & Peterson, 2005). Another example is the reflected best self exercise that helps people learn more about their unique talents by asking others in their surroundings to provide examples of moments when they were at their best (Roberts, Dutton, Spreitzer, Heaphy, & Quinn, 2005). It has been argued that working with one's strengths is fulfilling and engaging, and induces a feeling of acting in an authentic manner and being true to oneself (Peterson & Seligman, 2004). For those reasons, using strengths may also contribute to enhanced work engagement. Based on a meta-analysis, Harter, Schmidt and Hayes (2002) concluded that strength based development is indeed linked to increases in employee engagement, which in turn has been meaningfully linked to business outcomes including profitability, turnover, safety, and customer satisfaction.

An example of a general strength-based intervention is described by Seligman et al (2005). Participants were asked to first identify their top individual strengths (with the VIA-IS). Subsequently, participants were encouraged to use one of their top character strengths in a new or different way every day for at least one week (Seligman et al., 2005). There may be various ways to 'translate' this type of strengths-based intervention to a workplace context (Bakker, Oerlemans & ten Brummelhuis, 2013). For instance, one option is to identify what kind of strengths are required for particular types of jobs and thereafter assess the degree to which employees fit the strengths needed to perform such specific job activities. Thus, a better match between job types and employee strengths should lead to higher employee engagement. Another way to go is to provide individual feedback to employees (e.g., through online modules) about their most important strengths. Thereafter, an option would be to give employees more insight with regard to the frequency with which they use their top character strengths on a daily basis while performing work-related activities (e.g., through keeping a work-related diary). If it turns out that employees are insufficiently using their strengths, a next step would be to provide employees with specific pathways that lead them to use their strengths within the work context in a new way. This may lead employees to (re)consider how to use their strengths in specific types of job-related activities, which, in turn, may enhance their level of work engagement. There already is some preliminary empirical evidence at the business unit level for the effects of strengths-based developmental interventions on the so-called employee engagement metric (Buckingham & Coffman, 1999). Clifton and Harter (2003) reviewed data from 65 organizations, all of which were involved in employee engagement interventions. The intervention group consisted of four companies who had used strengths-based development and the control group was made up of 61 organizations that had not. The intervention group exceeded the control group on employee engagement from year one to year two, and even more dramatically so from year one to year three.



### **Happiness Interventions**

A third avenue to enhancing work engagement may be to improve employee happiness. Various activity-based interventions developed within the field of positive psychology appear to have positive effects on happiness in general, and might thus also be considered as useful for increasing happiness at work. Conceptually speaking, work engagement is comparable to happiness. Happiness is defined as a positive affective-cognitive state (Diener, Suh, Lucas & Smith, 1999) that comprises of feeling good as well as thinking positively about your life. The same applies to work engagement; it entails both feeling good at work and evaluating your work positively. So, work engagement can be considered a domain-specific form of happiness.

Specific examples of activity-based happiness interventions are activities aimed at expressing gratitude, performing acts of kindness, optimistic thinking, engaging in sports/exercise, and spiritual activities such as yoga or mindfulness (for an overview, see Lyubomirsky, 2008). For example, Ouweneel, Le Blanc and Schaufeli (2014) studied the effect of two positive interventions: 'practicing random acts of kindness' (Study 1) and 'thoughts of gratitude' (Study 2). In Study 1, students were instructed to practice random acts of kindness, during a five-day period (Monday-Friday). This could be anything ranging from holding a door for someone at the university, greeting strangers in the hallway, helping other students with preparing for an exam etc. Compared to a control group (no treatment), the intervention group showed a significant increase in positive emotions and study (academic) engagement. In Study 2, students were asked to think of people or experiences they were grateful for during the same five-day period. Every day, they were asked to think of a different period of their life, and to write down a short note to whom they wanted to express their gratitude and why. Results indicated that students' level of daily positive emotions in the experimental condition increased significantly (relative to a control group). However, there was no significant effect on their level of study engagement. Ouweneel et al. (2014) explain the difference in effect of the two interventions by the fact that in the 'thoughts of gratitude' intervention students did not actually send or read out their gratitude letter loud to the person in question, and therefore did not receive any direct positive feedback from this activity. In contrast, acts of kindness often evoke immediate positive feedback from the recipient.

Importantly, the effectiveness of this type of happiness/engagement interventions is likely dependent on personal interests, values, and personality (Lyubomirsky, Sheldon & Schkade, 2005). For example, extraverts may benefit most from an activity that requires regular contact with others (e.g., acts of kindness towards others). As people have to invest considerable time and effort in performing a particular activity to yield sustained happiness/engagement change, it is important that they stay motivated to perform the intervention activities during a prolonged period of time. Therefore, it is recommended that persons first

identify what kind of activities will likely be inherently joyful, interesting, and thus 'autotelic' in nature (e.g., Deci & Ryan, 2000).

One way to identify the kind of activities that are joyful and interesting would be to let people systematically reflect on their (work) day by filling out a diary based on a Day Reconstruction methodology (Kahneman, Krueger, Schkade, Schwarz & Stone, 2004; Oerlemans, Bakker & Veenhoven, 2011). The DRM combines elements of experience sampling and time diaries, and is designed specifically to facilitate accurate emotional recall. Respondents are first asked to fill out a time diary summarizing episodes that occurred in the preceding day. In particular, respondents describe each episode of the day by indicating when the episode began and ended, what they were doing, where they were, and with whom they were interacting. To ascertain how employees feel, participants are asked to report the pleasure and intensity of their feelings in accordance with the circumplex model of affect (Russell, 2003). For instance, through a DRM approach, employees can receive specific feedback on a) what kind of work-related activities they spend most of their time, and b) what kind of work-related activities are most joyful and interesting to perform. This kind of information may help employees planning their workday such that most time is spent on work-related activities that are most joyful, interesting, and rewarding for them. Giving people accurate and daily feedback on what kind of (work) activities they find most interesting and joyful may be a vital aspect in improving employee work engagement.

As an example, teachers who participated in a day reconstruction study rated the degree to which they considered their work activities to be self-concordant (i.e. in line with their personal values and personal choice rather than external). Engaging in highly self-concordant activities buffered the negative relationships between momentary work demands and momentary happiness during work activities (Tadic, Bakker & Oerlemans, 2013). Moreover, teachers who identified their daily work-related activities as challenging rather than hindering (Tadic, Bakker & Oerlemans, 2015) reported higher levels of positive affect and work-engagement. Similar findings are also reported in the literature on recovery from work. Employee enjoyment during off-job activities positively moderates the relationship between the time employees spend on such off-job activities and the degree to which they are able to recover from their daily work-related efforts (Oerlemans, Bakker & Demerouti, 2014).

### **CONCLUSION**

In this paper, we discussed three types of individual positive psychological interventions that have the potential to develop and sustain employee engagement in organizational settings, i.e. interventions aimed at increasing employees' Psychological capital (efficacy, hope, optimism, and resilience), Strength-based interventions and Happiness interventions. Although



research on the effects of these types of interventions on work-related outcomes is still in its infancy, existing empirical evidence suggests that these interventions are promising tools to enhance employee work engagement and thus to strengthen workforce sustainability. An important avenue for future research is to examine the effects of this type of interventions on outcome measures at higher organizational levels (i.e., team, department and/or organization).

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## ASSESSING THE QUALITY OF TESTS IN SPAIN: REVISION OF THE SPANISH TEST REVIEW MODEL

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*Para usar adecuadamente los tests, es necesario que los profesionales cuenten con información rigurosa de su calidad. Es por ello que, desde hace unos años, se viene aplicando el modelo español de evaluación de la calidad de los tests (Prieto y Muñiz, 2000). El objetivo de este trabajo es actualizar y revisar dicho modelo, con el fin de incorporar las recomendaciones hechas en sus aplicaciones, y para incorporar los avances psicométricos y tecnológicos que se han producido durante los últimos años. El modelo original fue revisado en varias fases, y la revisión originalmente propuesta fue revisada por un conjunto de expertos, lo que dio lugar a la versión final que se describe en este trabajo. Se espera que la aplicación del modelo revisado y la publicación de los resultados correspondientes, contribuya a seguir mejorando el uso de los tests y, con ello, la práctica profesional de la Psicología.*

**Palabras clave:** *Uso de tests, Modelos de evaluación, Calidad de los tests.*

*In order for practitioners to be able to use tests appropriately, they must have rigorous information on the quality of the tests. This is why the Spanish test review model (Prieto & Muñiz, 2000) has been applied for a number of years. The goal of this paper is to update and revise this model in order to incorporate the recommendations that have been provided since the original model was applied and to incorporate the latest psychometric and technological innovations. The original model was revised following a series of steps, and the revised proposal was reviewed by a number of experts. After incorporating their suggestions, we have arrived at the final version, which is described in this paper. With the application of the revised model, and the publication of the corresponding results, we hope to continue to improve the use of tests, and consequently, the professional practice of psychology.*

**Key words:** *Test use, Review models, Test quality.*

It is a well-known fact that tests are a basic tool for the professional practice of psychology and they can be useful regardless of the area of professional expertise: social, educational, clinical, sports, legal, organizational, etc. In Spain, we find data that confirms that psychologists use the tests as a basic tool in their daily lives, when we use the survey designed by the EFPA (European Federation of Psychological Associations) to obtain the views of psychologists on the use of tests. When Spanish collegiate psychologists were asked about the frequency with which they used tests in their professional work, the means obtained in the different areas (clinical, organizational, educational psychology and others), were close to 4 on a 5 - point scale (Muñiz & Fernández-Hermida, 2010). Even higher scores were obtained in the items in which it is recognized that the tests are an excellent source of information when combined with other data, and which, when properly used, are a great help to the psychologist.

However, it is also known that for the tests to be a truly useful tool, they must have demonstrated quality and rigour. Moreover, psychologists, as the users of the tests must be

competent and have proven information to help them choose tests with psychometric rigour for their purpose. In this sense, Spanish psychologists, in the aforementioned survey, reported needing more information (independent reviews, investigations, documentation, etc.) on the quality of the tests published in Spain.

It is in this context that the models for assessing the quality of tests and, in particular, the Spanish test review model (Prieto & Muñiz, 2000) arise. These models have in common that they define a set of criteria of theoretical, practical and / or psychometric quality, and they are evaluated following a standardized procedure in order to publicize the results of the evaluation subsequently. The ultimate goal is clear: to provide test users with accurate and accessible information on the quality of the tests available. Among the proposed models, and their application processes, we highlight the one followed by the American Burros Center for Testing and that proposed by the European Federation of Psychology Associations (EFPA), along with local models such as the Dutch, the British, and, of course, the Spanish model.

The Spanish model was driven by the Association of Psychologists (COP), and culminated in the publication of the CET (Test Assessment Questionnaire) in 2000 (Prieto & Muñiz, 2000). However, the CET was not implemented until years later, with the first test assessment process, which ended in 2011,

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promoted by the COP and its test commission (see Muñiz, Fernández-Hermida, Fonseca-Pedrero, Campillo-Álvarez & Peña-Suarez, 2011). Since then, with some minor modifications, the model has been applied systematically, always by independent reviewers. The results were published on the COP's website. Summaries of the four evaluation processes carried out to date, and their main results have been collected in the work of Muñiz et al. (2011), Ponsoda and Hontangas (2013), Hernández, Tomás, Ferreres and Lloret (2014), and Elosua and Geisinger (2016).

As a result of these evaluations, and thanks to the experience gained in applying the model, a series of recommendations have been proposed and implemented to improve both the test assessment process and the model itself (see Elosua & Geisinger, 2016; Hernández et al., 2014; Muñiz et al., 2011; and Ponsoda & Hontangas, 2013). As regards the model, some of these recommendations have to do with the need to incorporate the psychometric and technological advances that have occurred in recent years. In fact, the European model of the EFPA has recently been revised and updated (Evers et al., 2013) in order to incorporate these advances. The goal is to bring them to the professional practice of psychologists and thereby help reduce the gap that frequently exists between research and professional practice (Elosua, 2012).

Given these considerations, the objective of this paper is to present the review and update of the CET. For this review, together with the recommendations made in the various evaluation processes where the CET was applied, the recently revised and updated EFPA model (Evers et al., 2013) was taken into account.

With the application of this revised model (CET-R), we hope to increase the clarity and wealth of information provided in the evaluation process. The subsequent publication of the results obtained with the revised model will help to disseminate more comprehensive and rigorous information on the quality of the tests and their weaknesses. With this we hope to continue contributing to the informative strategy initiated by the COP years ago, in order to improve the use of tests and, consequently, to improve the professional practice of psychology.

Firstly, we briefly present the main international test review models and, secondly, the original CET model is presented. Thirdly, the process followed in revising the model is described and the main innovations of the revised model (CET-R) are highlighted. Finally we close with some brief conclusions.

### SOME INTERNATIONAL TEST REVIEW MODELS

The pioneers in systematically presenting information on the quality of tests were Americans through Buros, which is a testing institute associated with the University of Nebraska. In 1938 the first edition of the Buros Mental Measurements Yearbooks series was published with the results of the evaluations conducted. This series continues to be published regularly today (Buros, 1938; Carlson, Geisinger, & Jonson, 2014). Notably, for some years, and given the increase of Spanish speakers in the United States, Buros has special publications devoted to tests published in

Spanish (see, for example, Carlson & González, 2015). The process and the characteristics of the Buros evaluation as well as the similarities and differences between the evaluation carried out by Buros and that which has been carried out so far in implementing the CET can be consulted in Elosua and Geisinger (2016).

Focusing on Europe, progress in this area has been mainly driven by the corresponding psychology associations, through their test commissions. The Dutch were the first to carry out systematic evaluations of the tests and publish the results of these evaluations. Specifically, the first publication was in 1969 (NIP, 1969). The model that was used then has been revised five times, the latest revision being carried out in 2009 (Evers, Braak, Frima, & Van Vliet-Mulder, 2009). A more detailed description of the history, process and results of the assessments carried out by the Dutch can be consulted in the article by Evers, Sijsma, Lucassen and Meijer (2010). The Netherlands was followed by the British Psychological Society, albeit many years later. Although they began applying their own model in the 90s (see Bartram, 1996; Bartram, Lindley & Foster, 1990; Bartram, Lindley, & Marshall, 1992; Bartram, Anderson, Kellett, Lindley & Robertson, 1995; Bartram, Burke, Kandola, Lindley, Marshall, & Rasch, 1997), in recent years they have adopted the EFPA model, proposed in 2002 (see Bartram, 2002), which was based on local models proposed by the Dutch, British and Spanish. In addition to the British (e.g., Lindley, 2009), the EFPA model has been applied in recent years by Norwegians and Germans (see, for example, Nielsen, 2009 and Moosbrugger et al., 2009, respectively).

However, as mentioned above, the new developments in the field of psychological and educational evaluation have led to the EFPA model being thoroughly reviewed recently (see Evers et al., 2013). This revised version allows the comprehensive evaluation of tests. Similar to CET, firstly the test is described exhaustively, and secondly a quantitative assessment is performed of the psychometric characteristics of the test. In both parts, the descriptive and quantitative information is complemented with qualitative comments that enrich the evaluation. However, unlike the CET, the revised EFPA model includes sections to assess in detail aspects of the latest technological and psychometric advances: online test administration, the development of automated reports, and the application of Item Response Theory (IRT) among others.

The revised CET model, the CET-R, includes some of these new aspects, but not all of them. Only those considered most suitable for the Spanish context have been included, while attempts have also been made to maintain the parsimony of the CET model and facilitate the comparability between the new assessments and those carried out to date using the original model.

### THE TEST EVALUATION QUESTIONNAIRE (CET): THE ORIGINAL MODEL AND THE APPLICATION PROCESS

The CET was designed primarily to evaluate tests constructed from classical test theory, and is structured in three sections. The first section, focused on the technical description of the test, contains 31 items referring to test name, author, construct



measured, application area, etc. The second section deals with the technical evaluation of the instrument characteristics. Items related to the quality of materials and the documentation, the instructions and items, the theoretical foundation, the adaptation/translation (if the test was originally constructed in another country), the analysis of the items, the study of the validity (differentiating the content, construct, and predictive validity and differential item functioning analysis (DIF)), the study of reliability (differentiating parallel forms, internal consistency and test retest), and the test norms. In total this section includes 32 closed items that are mostly answered by a response scale with five categories ranked according to the quality of the assessed characteristics. It also has several open items which request a reasoned justification of the responses to the closed items for each of the main characteristics evaluated (validity, reliability and test norms), as well as the description of the selection procedures of the samples used to evaluate the psychometric quality of the test, and the criteria used when evaluating the predictive validity. Finally, in the third and final section, an overall assessment of the test is requested and a summary of the first two assessment sections, which is presented in a data sheet.

The test evaluation process using the CET starts with the selection, by the COP's test commission, of both the tests to be evaluated and the coordinator who will manage the evaluation process. For each selected test, the coordinator chooses two reviewers, who work independently: one, an expert in psychometrics and the other an expert in the professional field of assessment on which the test is focused. The reviewers must not have a direct relationship with the authors of the tests, or express a conflict of interest that would call into question the objectivity of the assessment. The coordinator is responsible for integrating the evaluations of both reviewers into one final report. If there is no substantial agreement between the reviewers, a third one could be asked. The report generated is sent to the author and/or publisher of the test so they can make any observations and clarifications and provide additional information. Finally, after the appropriate modifications, the report is made public through the website of the COP.

In the first application of the model, Muñoz et al., (2011) highlighted the need to improve the instructions for completing the model, since not all of the evaluators seemed to follow the same criteria in responding to some of the items and some of them were not interpreted correctly. This need was confirmed by Ponsoda and Hontangas (2013) in the second evaluation. Therefore, and taking into account the suggestions made, from the third evaluation onwards additional instructions were provided to clarify in more detail what was expected from reviewers in responding to the questionnaire, in order to reduce ambiguities and standardize the process further (see Hernández et al., 2014).

Regarding the questionnaire itself, in the first two evaluation processes, recommendations on the inclusion of certain issues were noted. While many of the suggestions were not included in the following evaluations pending a more thorough review of the model which would take into account the revised and

updated EFPA model –which we address in this work– clarifications were however included for some items and some new issues concerning construct validity, measurement precision using IRT and updating the test norms, among others (see details in Hernández et al., 2014). The additional instructions and minor changes to the CET were maintained in the fourth test evaluation (Elosua & Geisinger, 2016), which again highlighted the need for a more in depth review of the model.

#### **THE NEW TEST EVALUATION QUESTIONNAIRE (CET-R): A DESCRIPTION OF THE MAIN CHANGES**

Starting with the original CET with the small modifications applied by Hernandez et al. (2014), the first two authors worked on an initial proposal for CET-R which, on the one hand, would solve the problems of interpretation still observed in the assessments performed and, on the other, would incorporate some of the psychometric and technological advances made in recent years. We proceeded in four phases. First, we reviewed the suggestions made by the coordinators of the various test evaluation editions carried out by introducing the corresponding amendments and instructions. Second, we reviewed the updated model of the EFPA (Evers et al., 2013), adding the issues we considered most appropriate for the Spanish context, plus some others that we considered particularly relevant. Thus, in the initial proposal evaluation, assessment criteria were included on certain validation strategies, other ways of evaluating the reliability, and the interpretation of criterion-referenced test scores. However, we have left out the comprehensive assessment of issues such as the computerized administration of tests, remote evaluation via the Internet, or the quality of automated reports, although on the latter question an open item has been added to assess the quality of the report, in addition to maintaining the item that already existed describing the type of report. We have also left out a comprehensive assessment of the implementation of IRT (there are only two evaluative items related to the accuracy and adequacy of the sample size when IRT is applied), and continuous norming (although there is one question on this too). These aspects were excluded, or not evaluated thoroughly, for several reasons. First, at least for now, most of the tests published in Spain do not require consideration of these issues. Second, we wanted to avoid a drastic change from the original CET, in order to facilitate comparability with the results of previous evaluations, and in order to maintain a reasonable number of items to facilitate the reviewers' task.

It should be noted that all changes were made whilst generally keeping the structure, the sections and the way of scoring of the original CET (although in some cases further clarifications were made regarding the criterion of excellence and therefore the maximum score).

The initial proposal was reviewed in depth by the other authors of this paper and a new version of the CET-R was generated. This new version was reviewed by eleven qualified experts familiar with the CET, who are listed in Table 1. One of the most commonly suggested changes was to abandon the traditional classification of the types of validity that CET kept (and also the first version of CET-R) and to adopt the validity terminology of



the new standards of AERA, APA and NCME (2014). Therefore, it is this validity section which has undergone the biggest change compared with the original CET and the new EFPA model. In the terminology of the standards of the APA, AERA and NCME (1999, 2014) it is not the test that is validated but rather the interpretations or specific uses made of its scores. Therefore, instead of following the traditional classification of validity types of the APA from 1985 (AERA, APA, NCME, 1985), and differentiating between content, construct, and predictive validity, in CET-R, three sources of validity evidence are collected: evidence based on the content, evidence based on relationships with other variables (with another test that measures the same or a related construct, with a criterion that seeks to predict, etc.), and evidence based on the internal structure of the test (for example, evaluating the factor structure). In fact, the important thing is that evidence is gathered in the documentation and test manual to support the validity of using scores, regardless of whether talking about construct validity, or evidence of validity based on the internal structure of the test (formerly considered "construct validity"), for example. In fact, the updated EFPA model still uses the traditional classification. However, we believe that the update of the CET should incorporate the recommendations of the current international standards.

After making the relevant adjustments and modifications based on the suggestions of the experts, this new version was presented to the COP Test Commission, leading to the final version. This version, along with the completion instructions included in the questionnaire in order to increase clarity and standardization in the evaluation process, can be downloaded from the website of the Spanish Psychological Association (<http://www.cop.es>), in the test commission section (or directly from <http://cop.es/n>).

Like the original model, the CET-R is divided into three sections. The first, focused on the technical description of the test, now has 28 items. It is virtually identical to the original except that some items include additional explanations and/or some answer options have been modified or added. In addition, two of the items of the original CET, items 1.20 and 1.21, referring to the scales used and transformed scores, respectively, are merged into one, and other items, such as the one concerning the presentation of the basic literature provided, have been eliminated.

The second section deals with the technical evaluation of the characteristics of the instrument. It includes 55 items, nine on general issues, one on item analysis, 20 on validity, 15 on reliability and 10 on scales and the interpretation of scores. Added to the initial items of the CET, concerning the quality of materials and documentation, the theoretical foundation, etc., is an item referring to the development of the items (when it is an original test, not an adapted one). It is also differentiated between the quality of the instructions for those who have to respond to the test, and for those who have to administer it and correct it, and an item is added that evaluates the quality of the references provided. The section on validity is the one with the most changes, as stated above. Along with the evidence based

on the content, evidence based on the relationships with other variables is evaluated, differentiating between evidence based on relationships between test scores and other variables (convergent evidence, discriminant evidence, evidence based on differences between groups, etc.), and evidence based on relationships between test scores and a criterion (which would be the predictive validity in the original CET model). In addition, evidence is evaluated based on the internal structure, including at this point both the factor analysis and DIF analysis. Finally, an item is introduced which includes whether the manual reports the possible adaptations to be made in the administration of the test for the correct assessment of people with functional limitations or diversity. As for the section on reliability, in the evaluation of the coefficients of equivalence (parallel forms) an item is added on the evaluation of compliance with the assumptions of parallelism, and considering the coefficients of internal consistency, coefficients are added based on the factor analysis. Three questions are also included (two evaluative and one purely descriptive) concerning the quantification of the score precision using IRT, as well as two questions regarding the assessment of the inter-rater reliability. As for the section of norms and interpretation of scores, the norm-referenced interpretation includes one question on continuous norming, which allows us to obtain more accurate norms with smaller groups (e.g., Evers et al., 2010), and another question on updating the norms. In addition, four questions are included on the criterion-referenced interpretation of test scores specifically applicable to certain types of tests (e.g., educational or clinical). It should be noted that, for all sections in some items, clarifications are added about how to respond or the meaning of compliance with the criterion of excellence. Moreover, as in the original CET, open questions are included that enable us to justify the scores assigned to the closed items as well as other descriptive and evaluative questions that may be relevant.

Finally, in the third and final CET-R section, an overall assessment of the test is requested, as well as a summary of the first two sections which is reflected in a data sheet.

**TABLE 1**  
**LIST OF EXPERTS WHO PARTICIPATED IN THE REVIEW**  
**OF THE FIRST VERSION OF THE CET-R**

Name	Affiliation
Constantino Arce	Universidad de Santiago de Compostela
Rosario Martínez-Arias	Universidad Complutense de Madrid
Roberto Colom	Universidad Autónoma de Madrid
Ana Delgado	Universidad de Salamanca
Eduardo Fonseca	Universidad de La Rioja
María Dolores Hidalgo	Universidad de Murcia
María José Navas	UNED
Julio Olea	Universidad Autónoma de Madrid
José Luis Padilla	Universidad de Granada
Pablo Santamaría	TEA Ediciones
Carme Viladrich	Universidad Autónoma de Barcelona



## CONCLUSIONS

We believe that implementation of the CET model proposed by Prieto and Muñiz (2000) has had a positive impact in many areas in recent years. Firstly, it has provided test users with technical information about the quality of some of the tests available (almost 50 to date), to help them in their decision. But also, secondly, the application of the CET has helped to improve the processes of construction and publishing the tests. Over the various assessments that have been carried out, we have observed that, increasingly, the test manuals explicitly include most of the CET evaluation criteria, and they include detailed information on the processes of construction and standardization of the test, the psychometric quality of its scores and the appropriate and inappropriate uses of the test. Finally, we are aware that the CET is having an impact on the training of future psychologists, since teachers of psychometrics often use this model in their classes, guiding students in a practical way in the basics of evaluating the psychometric and technical quality of tests.

Recognizing this is not contradictory to accepting that, after more than 15 years since the publication of the CET, the concepts of reliability and validity have been enriched, and the scientific and professional requirements of the test have been adapted to new needs (De Boeck & Elosua, in press). Therefore, a review of the CET model that would incorporate the progress made was necessary in order to incorporate improvements in the use of tests by psychologists and educators, and indirectly, to further improve the processes of constructing and publishing tests in our country. This review has materialized in the CET-R, to be used in the fifth edition of test evaluations, driven by the COP, which has been launched recently.

The publication of the results of the test evaluations is one of the informative strategies the COP follows in order to improve the use of tests and thus the professional practice of psychologists. But it is not the only one. The COP, along with the EFPA and the ITC (International Test Commission), of which it is a member, carries out varied activities and projects in order to improve the use of tests. The various activities and projects are part of two complementary strategies: one which is more restrictive and the other informative (for more detailed information see Muñiz & Bartram, 2007; Muñiz & Fernández-Hermida, 2010, and Muñiz, 2012). The restrictive strategy comprises the totality of activities carried out to limit the use of tests to professionals who are actually qualified to do so. The informative strategy brings together initiatives to disseminate information on the practice of tests in order to reduce the likelihood of misuse of tests. In this regard, ethical and professional codes have been developed (e.g., EFPA, 2005; Fernández-Ballesteros et al, 2001) and guidelines on the use of tests, including the technical standards of the AERA, APA and NCME (2014) as well as numerous guidelines developed by the ITC, have been proposed: the general guidelines for the use of tests, (ITC, 2001), the guidelines for the translation and adaptation of tests from one culture to another (Hambleton, Merenda & Spielberger, 2005; Muñiz, Elosua & Hambleton, 2013), the guidelines on the use of computerized tests, the

professional guidelines on the selection of tests and how to proceed when tests become obsolete, the guidelines on the security of tests, on the quality control of tests, and the use of tests in research. The most important of the last three is reflected in the work of Muñiz, Hernández and Ponsoda (2015). All are available on the website of the ITC and many of them have been translated into Spanish and are accessible through the website of the Spanish Psychological Association (<http://www.cop.es>) in the section of the test commission. One final informative strategy that deserves attention is the ISO-10667 standard, which regulates the whole process of assessing people in work contexts. For a more detailed review of all of the actions taken in Spain to improve the use of tests, please see Elosua and Muñiz (2013).

The evaluation of the tests published in Spain is one of many actions. But, as Elosua and Geisinger (2016) indicated, for this action to be really useful, it requires continuous improvement work, both procedural as well as formal and substantive. And the CET-R is proposed with this improvement objective in mind. The ultimate goal is clear: for psychologists to have proven and reliable information that will help them make a better selection and use of the available tests. All of this will impact on improving professional practice and its prestige.

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# PSYCHOPATHOLOGICAL CONSEQUENCES OF TERRORIST ATTACKS IN ADULT VICTIMS AND THEIR TREATMENT: STATE OF QUESTION

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*El objetivo de este trabajo es describir el estado actual de la investigación sobre las consecuencias psicopatológicas de los atentados terroristas en las víctimas adultas y su tratamiento. A partir de los resultados de revisiones narrativas y metaanalíticas de dicha investigación y de los estudios empíricos más recientes, especialmente, de los realizados con víctimas en España, se extraen once conclusiones sobre cuántas víctimas adultas desarrollarán trastornos psicológicos, qué trastornos psicológicos serán los más frecuentes, cuál será el curso de esos trastornos, qué tipos de víctimas se verán más afectadas y cuál será el tratamiento más adecuado para sus trastornos. Las conclusiones convergen en sugerir que, tras un atentado terrorista, tanto las víctimas directas como indirectas (y entre estas últimas, especialmente los familiares directos de los fallecidos y heridos en el atentado), necesitarán un seguimiento psicológico y una atención psicológica a corto, medio, largo y muy largo plazo.*

**Palabras clave:** Terrorismo, Víctimas, Trauma, Trastornos mentales, Tratamiento.

*The aim of this paper is to describe the current state of the research on the psychopathological consequences of terrorist attacks in adult victims and their treatment. From the results of narrative and meta-analytic reviews of this research and the most recent empirical studies, especially those carried out with victims in Spain, eleven conclusions are extracted on the number of adult victims that develop psychological disorders, the psychological disorders that are most common, the course of these psychological disorders, the types of victims that are most affected, and the most appropriate treatment for their disorders. These conclusions converge to suggest that, after a terrorist attack, both direct and indirect victims (and among the latter, especially the relatives of those killed and wounded in the attack), will need psychological follow-up and care in the short, medium, long and very long term.*

**Key words:** Terrorism, Crime Victims, Trauma, Mental disorders, Treatment.

**A**t the time of writing, the media are reporting on the terrorist attack in Ankara on March 13 2016, which resulted in at least 37 dead and 125 wounded, and the echoes can still be heard of the attack in the same city on October 10 2015 which caused 95 fatalities and 246 people injured, and those committed in Paris on 13 November 2015, in which 129 people died and over 350 were injured (El Mundo, 2015; Mourenza, 2015, 2016). Unfortunately, these attacks are not isolated events. In 2014, there were a total of 13,463 terrorist attacks in the world that killed more than 32,700 and wounded 34,700, and 9,400 people were abducted or taken hostage (National Consortium for the Study of Terrorism and Responses to Terrorism, 2015). These figures underline the fact that terrorism is a serious global problem

today that affects a very large number of people each year in all regions of the world, and Spain is no exception. Over the past 48 years, in our country terrorism has killed at least 1,225 people and injured thousands (García-Vera et al., 2015). In fact, although no one has died in Spain in a terrorist attack since 2009, in 2015 at least seven Spaniards were killed in attacks abroad: two in the attack on March 18 at the National Museum of Bardo in the city of Tunis (Blanco, 2015), three in the Paris attacks (El Mundo, 2015) and two in the attack on December 11 at the Spanish Embassy in Kabul (González & Junquera, 2015).

## RESEARCH ON THE PSYCHOPATHOLOGICAL CONSEQUENCES OF TERRORIST ATTACKS IN ADULT VICTIMS AND THEIR TREATMENT

In the past 15-20 years, the scientific literature on the psychopathological consequences of a terrorist attack on the people affected and their treatment has grown rapidly and prolifically, especially since the attacks of 11 September 2001 in New York and Washington DC (known as 9/11), which marked a turning point in the investigation, with a dramatic increase in the scientific publications on the subject. A search of the bibliographic database PsycINFO recovered, for the period 1990-2001, 32 publications (a range of 1-5 publications per year), while 513 were identified for the

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period 2002-2013 (a range of 26-71 per year)<sup>1</sup>. Moreover, this search only found 2, 3 and 5 publications in 1999, 2000 and 2001, respectively, while it located 26, 27 and 54 in 2002, 2003 and 2004. Although not all of these publications dealt with the 9/11 attacks, at least 39% did, so the studies of these attacks, together with those carried out on the attacks in other developed countries, especially those that occurred in the last 15 years in Israel, Europe (Spain, France, Ireland and the United Kingdom) and in the US; and in particular those that led to a high number of fatalities and injuries, such as, for example, the attack on 19 April 1995 in Oklahoma City, those of 11 March 2004 in Madrid (known as the attacks of 11-M), those of 7 July 2005 in London and, of course, those of 9/11 constitute the most solid empirical knowledge currently available on the psychopathological consequences of terrorism and its treatment. Thus, at the beginning of this century, a great deal of knowledge on both subjects came from the broader scientific literature on traumatic events (e.g., rape, physical abuse, sexual abuse, car accidents), including that dedicated to all types of disasters (e.g., wars, serious train, plane or boat accidents, fires, and earthquakes). Today, however, the corpus of empirical knowledge on the mental health problems in adults specifically caused by terrorism and on their treatment has allowed the realization of various narrative and meta-analytic reviews on the subject, such as, for example, those by DiMaggio and Galea (2006), García-Vera and Sanz (2016), García-Vera, Sanz y Gutiérrez (2016) and Gutiérrez Camacho (2015) on post-traumatic stress disorder (PTSD), the one by DiMaggio, Galea and Li (2009) on substance abuse, those by García-Vera and Sanz (2010) and Gutiérrez Camacho (2015) on depressive and anxiety disorders, the one by Salguero, Fernández-Berrocal, Iruarrizaga, Cano-Vindel and Galea (2011) on major depressive disorder (MDD) and the one by García-Vera et al. (2015) on the treatment of these psychological disorders.

In addition, all of these reviews have focused primarily on studies that have evaluated the presence and treatment of diagnosable psychological disorders, rather than the mere presence or treatment of psychological symptoms, since without proper assessment of their severity, frequency, covariation and degree of interference, these may represent only the intense emotional responses that are part of the normal recovery process of people when faced with a traumatic event (Vázquez, Pérez-Sales & Matt, 2006). Therefore, the results of these studies largely confirm that the psychological alterations that are detected in people who have suffered a terrorist attack are clinically significant, and that the treatments that have been proven effective or useful, are so for alterations that are causing a significant deterioration in important areas of the person's activity (social, work, etc.).

The results of all of these reviews, together with the results of more recent empirical studies, coincide reasonably in indicating 11 conclusions on: (1) the number of adult victims who develop psychological disorders; (2) the most common types of psychological disorder; (3) the types of victims that will be most affected; (4) the most likely course of these disorders, and (5) the most appropriate treatment for these disorders, all of which will be detailed in the following sections.

### HOW MANY VICTIMS OF TERRORIST ATTACKS DEVELOP PSYCHOLOGICAL DISORDERS?

1) *Most adults affected by terrorism do not develop psychological disorders and manage to recover normally without problems.*

The reviews agree that, even among the direct victims, who have the most psychological disorders, and taking into account the most common disorder, i.e., PTSD, the percentage of victims who do not have the disorder is greater than that of those who do, such that we can estimate that 60-80% of direct victims will not develop PTSD after a terrorist attack (DiMaggio & Galea, 2006; García-Vera & Sanz, 2016; García-Vera et al., 2016; Gutiérrez Camacho, 2015).

2) *However, a significant percentage of adult victims develop psychological disorders, a percentage that is well above their prevalence in the general population, even multiplying this prevalence by 20 or 40, in the case of PTSD.*

Focusing again on the direct victims and PTSD, the reviews indicate that 18-40% of them will develop the disorder (DiMaggio & Galea, 2006; García-Vera & Sanz, 2016; García-Vera et al., 2016; Gutiérrez Camacho, 2015). These percentages far exceed the prevalence of PTSD in the general population, which is estimated annually at 0.5%, 3.5% and 0.9% in Spain, the US and Europe, respectively (Haro et al., 2006; Kessler, Chiu, Demler & Walters, 2005; the ESEMeD /MHEDEA 2000 Investigators, 2004), so the prevalence of PTSD in direct victims would multiply by 36-80 its annual prevalence in the Spanish general population, by 5-11 in the US and by 20-44 in Europe.

### WHAT KIND OF PSYCHOLOGICAL DISORDER IS MOST COMMON IN VICTIMS OF TERRORISM?

3) *The most common psychological disorder after a terrorist attack is PTSD, but victims may present a variety of diagnosable psychological disorders. The most frequent are the following, in this order: MDD, anxiety disorders, especially generalized anxiety disorder and panic disorder with agoraphobia, and substance abuse or dependence disorders.*

4) *The percentages of victims who have these other disorders are well above their prevalence in the general population, even multiplying this prevalence by 5 or 10.*

The reviews estimate that among direct victims, the average

<sup>1</sup> The search was conducted with the combination of the terms ("terrorist attack" or terrorism) and ("posttraumatic stress" or "post-traumatic stress" or "acute stress" or depression, depressive, anxiety, panic, alcohol or drug) in the summary and publication title fields.



prevalence of MDD is approximately 20-30% (García-Vera & Sanz, 2010; Gutiérrez Camacho, 2015; Salguero et al., 2011), that of generalized anxiety disorder is 7% and that of panic disorder is 6% (García-Vera & Sanz, 2010), while the prevalence of alcohol abuse in all types of victim would be 7.3% (DiMaggio et al., 2009). These figures far exceed those of the general population. For example, in Spain the annual prevalence of MDD, generalized anxiety disorder, panic disorder and disorders related to alcohol consumption is estimated at approximately 4%, 0.5%, 0.6% and 0.7% respectively (Haro et al., 2006), so the prevalence of these disorders in direct victims multiplies their prevalence in the Spanish general population by 5-7, 14, 10 and 10, respectively.

5) *There is a high psychopathological comorbidity among the victims of terrorist attacks who have psychological disorders; for example, the simultaneous presence of PTSD and MDD is very common.*

In the study by Miguel-Tobal, Cano Vindel, Iruarrizaga, González Ordi and Galea (2004) on 117 direct victims and relatives of those killed and injured in the attacks of March 11, it was found, 1 to 3 months after the attacks, that PTSD and MDD affected 36% and 31%, respectively, of the victims, but nearly 19% had both disorders simultaneously, so more than half of the victims who had PTSD also suffered from MDD.

The finding of this high comorbidity is important for prognosis and treatment, as comorbidity, especially that of PTSD with MDD, is associated with greater symptomatic severity, higher deterioration in the daily functioning and a more chronic course of symptoms and impairment (Kessler et al., 2005; Shalev et al., 1979).

#### WHAT TYPES OF VICTIMS PRESENT THE MOST PSYCHOLOGICAL DISORDERS?

6) *Psychological disorders may appear in all types of victim, both direct (the wounded and survivors) and indirect (the relatives of those killed or injured in attacks, emergency, rescue and recovery personnel, and residents of the areas or cities affected by the attacks).*

7) *In all victims the prevalence of the disorders is above their prevalence in the general population.*

8) *The prevalence is higher among the direct victims and relatives of those killed and wounded than among emergency, rescue and recovery personnel or among people in the affected areas or cities.*

If the average prevalence of PTSD among direct victims is 18-40%, the prevalence is about 17-29% among the relatives of the dead and wounded, 3-11% among residents of areas or cities affected and 5-12% among emergency, rescue and recovery personnel (García-Vera y Sanz, 2016; García-Vera et al., 2016; Gutiérrez Camacho, 2015), all much higher than the prevalence of PTSD of 0.5%, 3.5% and 0.9% found in the general population in Spain, the US and Europe, respectively.

#### WHAT IS THE COURSE OF THE PSYCHOLOGICAL DISORDERS IN THE VICTIMS?

9) *A year after the attacks, their psychopathological consequences will have diminished considerably among the residents of the areas or cities affected and emergency, rescue and recovery personnel, but not much in those wounded by the attacks or the relatives of those injured or killed.*

According to the meta-analysis by DiMaggio and Galea (2006), based on 18 studies, the majority cross-sectional, two months after the attacks an average prevalence of PTSD of 16% is observed among direct and indirect victims, which drops significantly to 14% after 6 months and again to 12% after a year.

However, these data must be clarified bearing in mind the types of victim and prioritizing the analysis of the results of longitudinal studies, which enable us to gain a better appreciation the course of a disorder. In this sense, the results of the review by García-Vera and Sanz (2016; see also García-Vera et al., 2016) indicate that 6-9 months after the attacks of 11-M, both among the residents of Madrid and the emergency and assistance personnel, a significant reduction was found in the frequency of PTSD (from 2.3% to 0.4% and from 1.2% to 0%, respectively), such that 6-9 months after the attacks, the percentage of people with PTSD in these two groups of victims was similar to its prevalence in the Spanish general population. In contrast, among the family members of those killed and injured in 11-M, the results are contradictory. In one study, the reduction in the frequency of PTSD was confirmed (from 28.2% to 15.4%), while in another no significant reduction was observed in the frequency of PTSD (from 34% to 31.3%) (García-Vera & Sanz, 2016). As for the direct victims of the 11-M attacks, the only longitudinal study published to date did not find, in the short or medium term, that over time a significant reduction occurred in the number of injured people who suffered PTSD; in fact, the percentage of injured people suffering this disorder 6 months after 11-M (34.1%) was almost equal to the percentage who were suffering after a month (35.7%), and only after a year could a significant reduction be seen in the prevalence of PTSD, which stood at 29%. However, despite these reductions, both among the relatives of the injured or deceased and among the direct victims, the prevalence of PTSD 6-9 months or a year after the attacks was still found to be well above its prevalence in the Spanish general population.

A similar pattern occurs in relation to the course of depressive and anxiety disorders in victims of terrorism. For example, longitudinal studies with direct and indirect victims of the attacks of 11-M have revealed that, 6-9 months after the attacks, there had been a significant reduction in the frequency of MDD among Madrid residents (from 8% to 2.5%) and emergency and assistance personnel (from 2% to 0%), while this reduction was lower among the families of those killed and injured (from 31.2% to 15.2%) and even lower among the injured victims (28.6% to 22.7%) (García-Vera & Sanz, 2010). Moreover, while among the residents of the affected city and emergency and rescue personnel these reductions meant that the prevalence



of MDD was similar to (or even lower than) the prevalence in the general population, these reductions did not mean that in the direct victims or the relatives the prevalence of MDD was similar to that of the Spanish general population, rather that, on the contrary, the frequency of the disorder in these two groups was still much higher (García-Vera & Sanz, 2010; Salguero et al., 2011).

*10) Even in the very long term (5, 10 or 20 years after the attacks), there will be a very significant percentage of direct victims and relatives of the injured or deceased who continue to present psychological disorders.*

A review of the studies of direct victims between 1 and 10 years after having suffered terrorist attacks has found that nearly 28% of those victims suffered from PTSD and 10% suffered from MDD (Gutiérrez Camacho, 2015; see also García-Vera et al., 2016), percentages which, although lower than those found between one month and one year after the attacks (41% and 24%, respectively), are much higher than those of the general population of Spain (0.5% for PTSD and almost 4% for MDD; Haro et al, 2006) and Europe (0.9% for PTSD and 3.9% for MDD; the ESEMeD/MHEDEA 2000 Investigators, 2004).

In fact, very long term psychological disorders may be more frequent depending on the circumstances in which the terrorist attacks occurred, the circumstances surrounding the victims after the attacks and the psychological care they may have received. For example, a recent study, in collaboration with the Association of Victims of Terrorism (AVT), with 507 direct and indirect victims (family members of those killed and injured) of all kinds of attacks in Spain, found that, an average of 21 years after the attack, 27% of victims suffered from PTSD, 18% MDD and 37% an anxiety disorder (Gutiérrez Camacho, 2015). The reasons why the victims of terrorism in Spain have such a high percentage of psychological disorders in the very long term (an average of 21 years after the attacks) may be varied, but we could offer a number of explanations, which are not mutually exclusive or exclusive of others, and presumably interact with each other to account for the high prevalence and have to do with historical factors related to the characteristics of terrorism in Spain, the support given to the victims of terrorism from Spanish society and the psychological attention they have received. Specifically, this high prevalence could be because Spanish victims have had: 1) an intense and repeated exposure to the attacks and major life stress behind them, in the form of direct or close exposure to other attacks, to news about attacks in the media, to street violence related to terrorism, to continued personal threats from terrorists or their environment, etc.; 2) little support from society, at least until very recently, and 3) inadequate psychological care, also at least until very recently.

According to López-Romo (2015), from 1991-2013 there were 5,113 *kale borroka* (street violence) attacks on companies in the Basque Country, in 2002 there were 963 people (politicians, judges, prosecutors, journalists, teachers, etc.) escorted due to having their lives threatened by ETA (not counting police officers, all of whom are targets of ETA), and

from 1995-2000, there was an average of 804 terrorist attacks each year between actions of ETA and street violence. Moreover, during the “years of lead” of terrorism in Spain (1978-1988) there were more than 65 deaths per year due to attacks, more than one per week. Furthermore, according to data from a study by Martín Peña (2013), the psychological violence experienced by victims and those threatened by terrorism in the Basque Country was very high: 69% suffered social isolation, 68% experienced control and surveillance from people close to the terrorist environment, 74% received threats, 79% suffered scorn, humiliation and rejection, and 90% felt stigmatized. All of these data indicate, therefore, that the victims of terrorism in Spain, compared to victims of the attacks, for example, in the US, have experienced intense and repeated exposure to attacks and have subsequently suffered many stressful events related to them, which has probably aggravated their psychopathological consequences, since a greater exposure to trauma and a higher level of life stress afterwards are variables that have solid empirical support as risk factors for PTSD, for example (Brewin, Andrews & Valentine, 2000).

On the other hand, in Spain, during the 1970s, 80s and 90s, there was a lack of empathy, sensitivity and social support towards victims from society, such that there were times when they even had to “hide” and be almost ashamed of their status as victims, especially in the Basque Country and when direct victims belonged to the army or security forces (Calleja, 2006; López Romo, 2015; Rodríguez Uribes, 2013). For example, a study has revealed that for 76% of murders carried out by ETA during the years of transition (1978-1981) and 82% of those carried out during the years of democratic consolidation (1982-1995) there were no mobilizations of social support for the victims in the Basque Country, whereas, on the other hand, 100% of the murders of members of ETA were responded with demonstrations or strikes in support of the dead terrorists (López Romo, 2015). The lack of social support is precisely one of the risk factors strongly associated with PTSD (Brewin et al., 2000). Fortunately, with the founding in 1986 of *Gesto Por La Paz* [Gesture for Peace], an organization of civil society aimed to raise awareness and advocate an active social commitment of solidarity with the victims of terrorism, a systematic social response was initiated in support of the victims and in condemnation of terrorism, which became multitudinous after the murder of Miguel Ángel Blanco, PP councillor in Ermua, in 1997 (Rodríguez Uribes, 2013).

Finally, knowledge about the treatment of the mental disorders caused by terrorism was scarce in the 1970s to 1990s, and even when such knowledge was already available to the scientific and professional community (e.g., in the first decade of the 21<sup>st</sup> century), it was not properly put into practice by the health authorities. For example, according to the report by its director (Ferre Navarrete, 2007), the special plan for mental healthcare for those affected by the attacks of 11-M that was launched in Madrid between 2004 and 2006 hired twice the number of psychiatrists as psychologists, when currently the



treatment of choice for PTSD is psychological and not pharmacological (Australian Centre for Post-traumatic Mental Health [ACPMH], 2013; García-Vera et al, 2015; National Institute for Health and Clinical Excellence [NICE], 2005). In addition, this plan carried out, until December 2006, 3,243 first consultations and 14,497 monthly or bimonthly review consultations for the 3,234 patients treated, which represents an average of 4.5 monthly or bimonthly visits per patient and questions that such consultations could implement the psychological treatments that have currently been proven effective and useful for PTSD which involve a greater number of sessions and must be weekly (ACPMH, 2013; García-Vera et al, 2015; NICE, 2005). In fact, a recent study, in collaboration with the AVT, with a sample of 125 direct victims and relatives of those killed and wounded in the attacks of 11-M, found that an average of 8.6 years after the attacks, 33.6% of victims suffered from PTSD, 22.4% from MDD and almost 50% from an anxiety disorder, even though 70.4% of the victims had received some form of psychiatric or psychological treatment following the attacks, and 27.4% were receiving treatment at the time of participation in the study, the majority (58.4%) only psychiatric (Gutiérrez Camacho, 2016).

#### WHICH TREATMENT IS MOST APPROPRIATE FOR PSYCHOLOGICAL DISORDERS IN VICTIMS OF TERRORISM?

11) *There are psychological therapies, particularly trauma-focused cognitive behavioural therapy (TF-CBT), that have been effective and useful in clinical practice for the treatment of PTSD and depressive and anxiety disorders from which victims of terrorist attacks may suffer, including those who suffer from such disorders in the very long term (15-25 years after the attacks).*

As recently as 12 years ago, there were virtually no empirical studies published on the specific treatment of PTSD (or any other mental disorder) caused by terrorist acts, meaning that the recommendations on which treatments should be applied for the victims of terrorism were based on the literature on the efficacy and clinical utility of treatments for PTSD in people who had experienced other traumatic events, including war veterans, victims of physical violence or rape, refugees or survivors of accidents. Fortunately, this empirical literature is very copious and has allowed numerous revisions of experimental studies with control groups which offer solid conclusions about the treatments that have greater empirical support in terms of their efficacy for PTSD (e.g., ACPMH, 2013; Bisson et al, 2007; NICE, 2005) and on which clinical practice guidelines have been developed that are quite consistent in their treatment recommendations (e.g., ACPMH, 2013; NICE, 2005):

a) The treatments with the most empirical support are currently trauma-focused psychological therapies, in particular, exposure therapy, TF-CBT (which includes cognitive restructuring techniques together with exposure techniques), anxiety management training (or stress inoculation training) and EMDR (eye movement desensitization and reprocessing).

b) These therapies should be considered the treatments of choice for PTSD over other psychological therapies with some popularity (e.g., psychological debriefing) or drug therapies.

c) The pharmacological therapies should not be used as a routine first-line treatment for PTSD instead of trauma-focused psychological therapy, but they should be used when a patient does not want the psychological treatment or when, after application of the treatment in at least 12 sessions (usually lasting 50-90 minutes each), there has been no therapeutic benefits or they have been scarce.

Today, these recommendations can be clarified based on the scientific literature that has been specifically developed to assess the efficacy and clinical utility of different treatments in victims of terrorism. A recent review of this literature (García-Vera et al., 2015) indicates that, of the therapies of choice for PTSD that were named earlier, just TF-CBT and exposure therapy have been subjected to empirical study regarding their efficacy or clinical utility in adult victims of terrorist attacks suffering from such a disorder. The first of these is by far the most analysed (four efficacy studies, including three experimental ones, and three studies of clinical utility), and shows clearly positive and consistent results of efficacy and clinical utility. By contrast, exposure therapy has only had one single efficacy study and had lower results than those found for TF-CBT. For example, at post-treatment, only 17% of victims of terrorism with PTSD who received exposure therapy with a placebo drug improved clinically, and the percentage rose to 42% when this therapy was combined with paroxetine, but even so it was lower than the rates of clinical improvement that were found among the victims with PTSD who had received TF-CBT and ranged between 33% and 69%, with an average of 57.4%.

In summary, the results of the review by García-Vera et al. (2015) suggest that TF-CBT would be the therapeutic option of choice for the victims of terrorism who suffer from PTSD, at least until more studies and more favourable results on the efficacy of exposure therapy are published, until there are studies on the specific efficacy in victims of terrorism of other psychological therapies that have been proved effective for PTSD derived from other traumatic events (anxiety management training and EMDR), and, of course, above other psychological or pharmacological therapies that have not only never been tested with victims of terrorism but also lack adequate empirical support in terms of their efficacy for PTSD caused by other traumatic situations or they are less efficacious for it.

Corroborating the efficacy and clinical utility of TF-CBT for PTSD that the victims of terrorism may suffer, the results of three empirical studies recently conducted by the Complutense University of Madrid and the AVT with victims of all types of terrorist attacks in Spain (Cobos Redondo, 2016; Gesteira Santos, 2015; Moreno et al, 2016) and in which the efficacy and clinical utility was evaluated of a TF-CBT program with 16 sessions based on prolonged exposure therapy for PTSD by Foa, Hembree and Rothbaum (2007), but to which cognitive techniques were added for PTSD as well as other cognitive and



behavioural techniques for the treatment of other anxiety or depressive disorders that victims of terrorism may suffer alone or concurrently, indicate that:

- a) TF-CBT is efficacious and clinically useful not only in victims of terrorist attacks who suffer PTSD, but also in victims who, in comorbidity with this disorder or alone, suffer MDD or anxiety disorders.
- b) TF-CBT is also efficacious and clinically useful for victims of terrorism who suffer very long term PTSD, MDD and/or anxiety disorders, specifically an average of 18-20 years after suffering the attack.
- c) TF-CBT is efficacious and clinically useful not only in the short-term (post-treatment and follow-up after one month) and medium term (follow-up after 3 and 6 months), but also long-term (follow-up after one year), such that keeps its therapeutic benefits at least until one year after application. For example, in the study by Cobos Redondo (2016) with 65 direct victims and relatives of those killed and wounded in terrorist attacks, if before receiving such therapy there were 65% of those victims suffering from PTSD and 46% suffering MDD, a year after completion of the therapy none of them suffered PTSD and only 3.5% had MDD.

## CONCLUSIONS

The aim of this work was to present and analyse the most important conclusions that can be drawn from the scientific research published to date on the psychopathological consequences of terrorist attacks in adults and their treatment. From the results of different narrative and meta-analytic reviews of such research and the most recent studies, especially those carried out with victims in Spain, eleven conclusions can be drawn, which with a sufficient level of certainty, converge in affirming that, after a terrorist attack, both the direct and indirect victims (and among the latter, especially the relatives of those killed and wounded in attacks), need psychological monitoring and care in the short, medium, long and very long term. Although some aspects of these findings are still to be clarified, as well as many other aspects that were not included, these findings allow us to estimate after a terrorist attack how many adult victims will develop psychological disorders, which disorders are most frequent and what their course will be, what types of victims are most affected and what are the most appropriate treatment for their disorders, so this knowledge should inform the procedures of assessment, intervention and treatment that are implemented with the victims of terrorism.

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## THE FORENSIC INTERVIEW: OBTAINING COGNITIVE INDICIA IN CHILDREN WHO ARE THE ALLEGED VICTIMS OF SEXUAL ABUSE

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*Las características que rodean a los delitos de abuso sexual infantil (ASI), puesto que muchos se cometen en la clandestinidad, sin testigos, y sin evidencias físicas que los corroboren, dificultan el enjuiciamiento de los mismos. El análisis y valoración del indicio cognitivo (huella de memoria) se convierte así en el principal medio de prueba con el que cuenta el juez. La entrevista forense es el instrumento mediante el cual el perito psicólogo obtiene este indicio cognitivo para su posterior análisis y valoración en términos de credibilidad. En el presente artículo se alerta sobre los posibles sesgos en el entrevistador y errores procedimentales que pueden contaminar la obtención del relato del menor, y se propone un diseño del proceso de entrevista forense con el objetivo de facilitar la labor pericial y minimizar esos posibles sesgos. Se hace hincapié en la necesidad de que el evaluador cuente con formación y entrenamiento especializado en esta técnica.*

**Palabras clave:** Entrevista forense, Abuso sexual infantil, Memoria de testigos, Evaluación de credibilidad.

*The characteristics surrounding child sexual abuse (CSA), which is committed in secret without witnesses or corroborating physical evidence, make it difficult to prosecute. The analysis and assessment of the cognitive indicia (memory trace) thus becomes the primary documentary evidence on which the judge relies. The forensic interview is the instrument by which the forensic psychologist obtains the cognitive indicia for further analysis and assessment with regards to credibility. The present article warns of the potential interviewer biases and procedural errors that can contaminate the child's narrative production, and proposes a design for the forensic interview process that aims to facilitate the evaluator's task and minimize the potential biases. The need is emphasized for the evaluator to have knowledge and specialized training in this technique.*

**Key words:** Forensic interview, Child sexual abuse, Eyewitness testimony, Credibility assessment.

**I**t seems that the greater social awareness, the legal framework, both nationally and internationally, and the development of prevention and detection programs in the field of the protection of minors are not enough to stop child sexual abuse (CSA). A recent meta-analysis on the prevalence of this casuistry internationally noted a huge variability in the data presented, ranging between 4/1000 and 127/1000, depending on the research methodology used (Stoltenborgh, Van IJzendoorn, Euser & Bakermans-Kranenburg, 2011). One fact that is repeated in all the research is the over-representation of females among the victims (180/1000) in comparison with males (76/1000). In Spain most of the studies to determine the extent of this phenomenon are carried out based on the data obtained from the child protection services of various autonomous regions, which severely limits the results as only the more serious cases are recorded (De Paúl, Arruabarrena & Indias, 2015; Pereda, Guilera & Abad, 2014). Not all cases of

CSA reach the judicial system. Many of these cases may remain unreported, usually due to the young age of the child and the limitations that this involves in the access of the protection systems, due to shame (sex remains a taboo in our society), for fear of the consequences (reprisals from the aggressor, court trial, family breakdown, etc.), or simply because the children are unaware that they have suffered victimization. Sometimes when the victims communicate with the adults in their environment, especially in the case of domestic sexual abuse, their reaction is to hide the revelation (González, 2011). Barriers from the judicial system have also been identified as reasons for not reporting among victims of CSA, including the fear of not being believed, the lack of the immediate arrest of the offender or having to face a long and difficult judicial process (Hattem, 2000; Lievore, 2003). A study conducted in Australia, through in-depth interviews with 63 children who had gone through a legal process after filing a complaint for CSA, revealed that less than half would go through this process again. Only in one of the states was there a majority of children who were motivated to repeat the judicial experience, a fact that the author associated with the existence of more protective measures for children in that state (Eastwood & Patton, 2002). Overall, the study indicated that the victims of sexual offences are often less satisfied with the judicial process than other kinds of victim (Felson & Pare, 2008).

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*Dedicamos el presente trabajo a nuestra compañera Odette Terol, fallecida durante el proceso de publicación del mismo, por lo mucho que nos enseñó en el campo de la Psicología Forense.*



Furthermore, in cases where a complaint is filed, the judicial investigation usually comes up against significant limitations due to the absence of physical or biological evidence proving the incident, and the lack of witnesses corroborating the versions of the parties involved (Echeburúa & Subijama, 2008), so the scientific expert evidence is of particular relevance (Vázquez-Rojas, 2014; González, 2015). A recent study of judgments in cases of sexual victimization of children indicates the difficulty that the judicial system has in minor intra-family cases, suggesting the need to improve the functioning of the means of evidence (Tamarit, Guardiola, Hernández-Hidalgo & Padró-Solanet, 2014).

Normally, in the absence of physical or objective indicia, the judge will have two other types of more subjective evidence to assess the occurrence of the events being reported: the testimony of the child (memory trace), and the possible associated psychological damage (psychopathological imprint). The latter is not the subject of this paper; we only point out that there is no single psychopathological profile associated with CSA, which makes it risky to accredit an alleged experience of sexual victimization based on clinical indicators (Scott, Manzanero, Muñoz, & Köhnken, 2014).

The memory trace, meanwhile, is extremely fragile and sensitive to the methods used to obtain it, especially in the case of minors of a young age (González, Muñoz, Sotoca & Manzanero, 2013). Today, modern proceedings in the criminal investigation pay close attention to good practices in forensics or criminology, attaching great importance to the processes carried out at the physical crime scene: the scene is preserved with a fence, objects are handled with gloves, agents are clothed in overalls to prevent contamination, access to non-specialist personnel is restricted, and special instruments and equipment are used, etc. As regards the *mental* scene, such a strict tradition does not yet exist with regards to how important it is to correctly process the indicia or traces of every mental scene of the crime (one for each person involved), in the same way as it is done with the physical scene. We must therefore emphasize again the existence of these mental scenarios; where the same physical scene is related to as many mental scenes as there are victims, witnesses, suspects, perpetrators and people involved; and in that prior to delimiting these, it is also essential to recognize, preserve, collect, store and analyse the subjective evidence appropriately: the testimonies (González, 2015).

Although the Criminal Procedure Law indicates the way one must question the witness (Arts. 435 et seq.) and the questions that should not be asked (trick questions and leading questions, Arts. 439 and 709), the reality is that there is a serious oversight when handling these psychological indicia (Manzanero, 2015), unlike physical evidence which has protocols for preparation and submission to forensics teams in order to avoid alterations, substitutions, contamination or destruction (González et al, 2013; González, 2015). However, in Spain, recent legal initiatives have focused attention on the need to protect the memory trace of particularly vulnerable victims, as well as trying to avoid secondary victimization (Circular 3/2009 of the Attorney General or the reform of Art. 433 of the Criminal

Procedure Act of October 6, 2015). Thus, the new Art. 433 of the Criminal Procedure Act says: *In the case of child witnesses or persons with modified judicial capacity, the examining magistrate may decide, when in view of the lack of maturity of the victim it is necessary to avoid causing them serious damage, that their declaration is taken by experts and with the intervention of the prosecution. To this end, it may also be agreed that the victim is asked the questions directly by the experts or even excluding or limiting the presence of the parties at the site of the examination of the victim. In these cases, the judge will arrange to provide the parties with the possibility to ask questions or seek clarification from the victim, whenever this is possible. The judge will order the recording of the statement by audio-visual media.*

In this paper we will focus on the forensic interview as the main technique for obtaining information relevant to the case, and for obtaining the child's version of the events, under the holistic approach to the assessment of testimony (HELPT) (Manzanero & González, 2013, 2015) and then, depending on the quality and extent of the testimony obtained, analyse it in order to assist the judge in the assessment of its credibility (Köhnken, Manzanero & Scott, 2015). These guidelines will be especially useful in cases of school-age children, because adolescents have a cognitive development and life experiences similar to those of an adult, and preschool children have cognitive limitations, especially in the area of understanding and linguistic expression.

#### COMMON ERRORS IN OBTAINING TESTIMONY

If the psychologists who evaluate cases of CSA have not received specialized training, it can generate starting biases (anchoring values) that will affect the entire interview process, and obtain incomplete or incorrect information, which will in turn vitiate any subsequent analysis of the testimony that is obtained. This can be explained, according to the model developed by Kahneman (2011), by the preponderance of the evaluator in processing the information and making decisions based on intuition rather than reasoning based on evidence. These biases can be divided into two closely-related groups: a) cognitive biases, and b) procedural biases. Understanding the potential biases of the interviewer is the first step in minimizing the probability of their occurrence.

#### Cognitive biases

The lack of specialist knowledge regarding CSA leaves the assessor exposed to the beliefs of the social moment in time. On this note, particular attention and sensitivity towards some victim phenomena has been observed (Pereda, 2013), especially those affecting children, with feelings of outrage being developed at these cases (Masip & Garrido, 2007). This facilitates the appearance of bias in the evaluator, if they have not had specialized training, leading them to accept any allegation of CSA uncritically, designing an interview process conditioned by the sole hypothesis of the occurrence of the alleged facts (a self-fulfilling prophecy or Pygmalion effect). This tendency to prove a hypothesis rather than to test it means in practice that the only thing that is done is to seek the "proof" to confirm this hypothesis



(the occurrence of the alleged sexual abuse). In short, one can only see what one is looking for. Thus, it is easy for illusory correlations and other *post hoc ergo propter hoc* type fallacies to occur. This Latin expression meaning “after this, therefore, as a result of this” is sometimes simplified as “post hoc” and referred to the false causality that assumes that if one event happens after another, the second is a consequence of the first, leading to a conclusion based only on the order of events (for example, if a child is sad and quiet after being with their father, it is assumed that the origin of their state of mind can be found within what happened during that meeting, without regard to other possible variables at the time of the evaluation).

Linked with the above is the bias that results from being sensitized to signs of emotional distress in the child without contemplating the etiological alternatives (ambiguous clinical indicators of sexual abuse) or from being sensitized to information appearing in the court file (e.g., if the accused has a criminal history of crimes of the same type, ambiguous clinical reports, etc.), assuming preconceived beliefs as valid (if the defendant was sexually abused as a child, they are probably repeating the abusive pattern), which again jeopardizes the scientific process of testing alternative hypotheses, focusing solely on the hypothesis of the occurrence of the acts. This bias is more likely when the roles of expert and therapist are carried out by the same person. This duality is inadvisable in the practice of forensic psychology (American Psychological Association, 2013). Key in the psychotherapeutic process, the “therapeutic alliance” is incompatible with the evaluating distance or objectivity that is required in forensic activity. Furthermore, the therapist’s information usually comes exclusively from the patient (whose reality is the only one that interests the psychotherapeutic process), without having been checked across various sources or having integrated all of the data in the testimony, tasks that the expert however must perform.

Neither is it uncommon to see the trap of the “availability heuristic”, a name proposed by Tversky and Kahneman (1974) to describe the tendency of the human mind to use the most prominent information and experience in our memory, which is therefore more easy to recover. Heuristic rules are those cognitive rules that, unconsciously, every human being applies when processing information received from outside, and that reduce the complex tasks of assigning probability and predicting values to simpler judgment operations by simplification procedures. Heuristics explains how new information tends to be associated with existing patterns or thoughts rather than creating new patterns for each new experience. Thus, there is a tendency to overestimate the frequency of events coinciding with what is more available in the memory and daily practice, and this bias may influence decision-making regarding the event to be evaluated. As an ancient Chinese proverb explains: “Two-thirds of what we see is behind our eyes,” or put another way the anticipation of what we expect to see influences what we actually see, constituting an authentic form of selective perception. A study by Herman, Leiblum, Cohen and Melendez (1998), showed that professionals working as specialists in cases of sexual abuse

tended to interpret some sexual behaviour observed in children as more “abnormal” than it was interpreted by others healthcare professionals.

The above example enables us to illustrate the availability heuristic and also to introduce another important source of error: misinformation on child sexual development, its manifestations and determinants, which increases the likelihood of inappropriately interpreting the expression of sexualized behaviours in the child, assigning too much significance to them. Children of three or four years old may be curious about exploring their own bodies and may start to self-stimulate as a standard expression of their psychosexual development (Gómez, 2013; Scott et al, 2014).

### **Procedural bias**

The lack of knowledge and experience in managing protocols for obtaining and assessing witness evidence increases the likelihood of its improper use, in particular the lack of a rigorous hypothesis approach regarding the origin of the memory of the child, which should be the starting point for these investigations (Köhnken et al., 2015). Ignorance may make the evaluator conceive the statements dichotomously, as if their only source were experience (true declaration) or intentional falsehood (false declaration), which prevents the contemplation and testing of other hypotheses on the origin of the declaration, such as unintentional errors (limitations in the competence of the witness, alterations in the coding phase or the withholding of information or suggestive procedures; Köhnken et al, 2015.) For this reason, it is essential to have specific training on the functioning of memory in order to carry out these expert activities (Manzanero, 2010).

This lack of training is also the basis of using strategies that can contaminate the memory of the child and invalidate the cognitive indicia (Hritz, Royer, Helm, Burd, Ojeda & Ceci, 2015). For example, the use of an authoritative style of interview, carrying out tendentious, captious, or leading questions, ones of forced choice or yes/no answers, repetition of the same question, the symbolic interpretation of real elements, the misuse of projective tests or the use of anatomical dolls. The use of specific interview protocols has shown benefits in obtaining statements that are free of bias, minimizing the negative impact of variables such as conducting repeat interviews (La Rooy, Katz, Malloy & Lamb, 2010).

In short, specialized training is essential for the forensic psychologists responsible for addressing cases of CSA (Manzanero & Muñoz, 2011). The consequences of malpractice in these cases can have serious consequences for the parties involved (the complainant and defendant), given the central role that the psychological test has in making judicial decisions. A recent study from the European Union Agency for Fundamental Rights (FRA) has found a high disparity in the educational level of the forensic technicians responsible for interviewing children. Johnson et al (2015) have recently shown the widespread application of forensic interview malpractices in cases of CSA. On the scientific level a lack of evidence-based practice has also been detected in dealing with cases of CSA (Pelisoli, Herman & Dell’Aglia, 2015).



## DESIGN OF THE FORENSIC INTERVIEW PROCESS WITH MINORS

### *Preliminary basics*

First, it must be borne in mind that, in general, a forensic examination can be a stressful situation for a child, since it is an unusual experience in an overly formalistic context (Caso, Arch, Jarne & Molina, 2011). This stress will be higher or lower depending on the child's cognitive development, since this determines the strategies that the child can implement in order to deal with it, and the stress will also vary depending on the child's emotional state. Therefore, the forensic psychologist must prepare the interview meticulously to avoid oversights that may require a repeat interview with the child, or to prevent the interview from being prolonged excessively. It is not recommended to last more than an hour, even under ideal circumstances. In any case, it is important to be alert to signs of fatigue and loss of concentration, because if the child shows these signs, it is better to end the interview (Carrasco, 2012). If it is necessary to interview the child once more (to check information, or due to a lack of time, etc.), at the end of the session the reasons for having to interview them again, when the next interview will be, and what will be covered will all be explained to the child, and they will be advised not to think about it much in the meantime (Caso et al., 2011).

The waiting time until the child's examination should be minimized as much as possible, since it has been consistently demonstrated that delay impairs the memory in general (Manzanero & Álvarez, 2015) and especially that of witnesses, which will have an important impact on the accuracy of the statements of the minors and the success of the forensic interviews (Andrews & Lamb, 2014). All too often it is seen that once there is knowledge of CSA, whether in the family, school or healthcare environment, and regardless of whether it is reported to the police or judicial authorities, the child is submitted to repeated interviews (if not actual interrogation) about what happened, by family, police, prosecutors, doctors, which although they may be well-intentioned still decisively influence the memory trace, usually distorting it, if it is not carried out appropriately. It cannot be reiterated enough that this process must be avoided in the case of such events, and that it should be a duly qualified professional who deals with the first interviews with the children from the outset, recording their intervention and submitting it to the judicial procedure for subsequent assessment. It is desirable, in order to gain as reliable a testimony as possible, that when the judge knows of the existence of alleged CSA that they immediately delegate the obtaining of the child's statement to specialized professionals accredited for this (criminal psychologists belonging to the police and security forces, psychologists in specialized CSA teams, and forensic psychologists, both those working for the parties and court-appointed ones). Only then, can the subsequent valuation of the testimony be carried out with maximum guarantees. In any case, in the court of law the court-assigned forensic psychologist is in charge, if deemed by the judge, of conducting the expert assessment of the case. If other professionals have intervened previously, a recording of the interview should be supplied so they can work with it, thus

avoiding a further examination of the child, and therefore a possible secondary victimization.

Despite all the above regarding the importance of minimizing the time from the revealing of the alleged abuses to the interview with the child, it should also be noted that under certain circumstances (i.e., illness, exhaustion, situation of shock, etc.), the child may not be able to provide an account in a forensic interview in moments that are close to the alleged victimizing experience (American Professional Society on the Abuse of Children, 2012; Myers, 2005).

Once in court, it is also important not to delay the waiting time for children because often there are no spaces that are appropriate for them and they may be exposed to inappropriate situations that may increase their anxiety (police presence, legal workers in their robes, arguments, etc.) (Caso et al., 2011).

### *Collection and analysis of all of the information available on the case: hypothesis generation*

There is agreement in considering that the interview process should begin with the collection and analysis of all of the information available on the case. In the forensic context this means the study of the case file (Muñoz & Echeburúa, 2013). Once this information has been analysed we will begin to gather information to generate and test the hypotheses about the origin of the memory for the specific case to be evaluated (Scott & Manzanero, 2015).

During the prior study of the case and development of the interview, the expert psychologist will always work with a hypothesis and its opposite, i.e.: H<sub>1</sub>: the account provided by the minor comes from an event they have experienced; H<sub>2</sub>: the account provided by the minor has its origin in different source other than the direct experience (Köhnken et al, 2015). The problem in these cases is to define the data adequately to support or rule out each of the hypotheses, and the method of obtaining and weighting these data (Scott & Manzanero, 2015).

Once these two hypotheses have been tested, one or the other will have more weight in the initial assessment of the expert. Sometimes although the set of analysed data indicate that the account of the child corresponds to an event they have experienced (H<sub>1</sub>), we may find conflicting information. In this case, the evaluator must provide explanatory theories regarding the factors that may be affecting the accuracy of the memory, analysing at least three sources of influence: the cognitive abilities of the child to testify (for example, lack of episodic memory due to their young age), alterations in the processes of encoding, storing and retrieving information (requiring special attention are the number and type of discussions that the child has had on the subject since the revelation of the alleged abuses), and finally, the type of victimization situation reported, whether it is a single episode, or a chronic situation over time. Sometimes the explanation given for the contradictory data is that it is due to *the complex interaction of various factors influencing the memory*.

In the event that testing the hypothesis suggests that the child's story is not due to a directly experienced event (H<sub>2</sub>), the expert psychologist will propose alternative hypotheses to the origin of



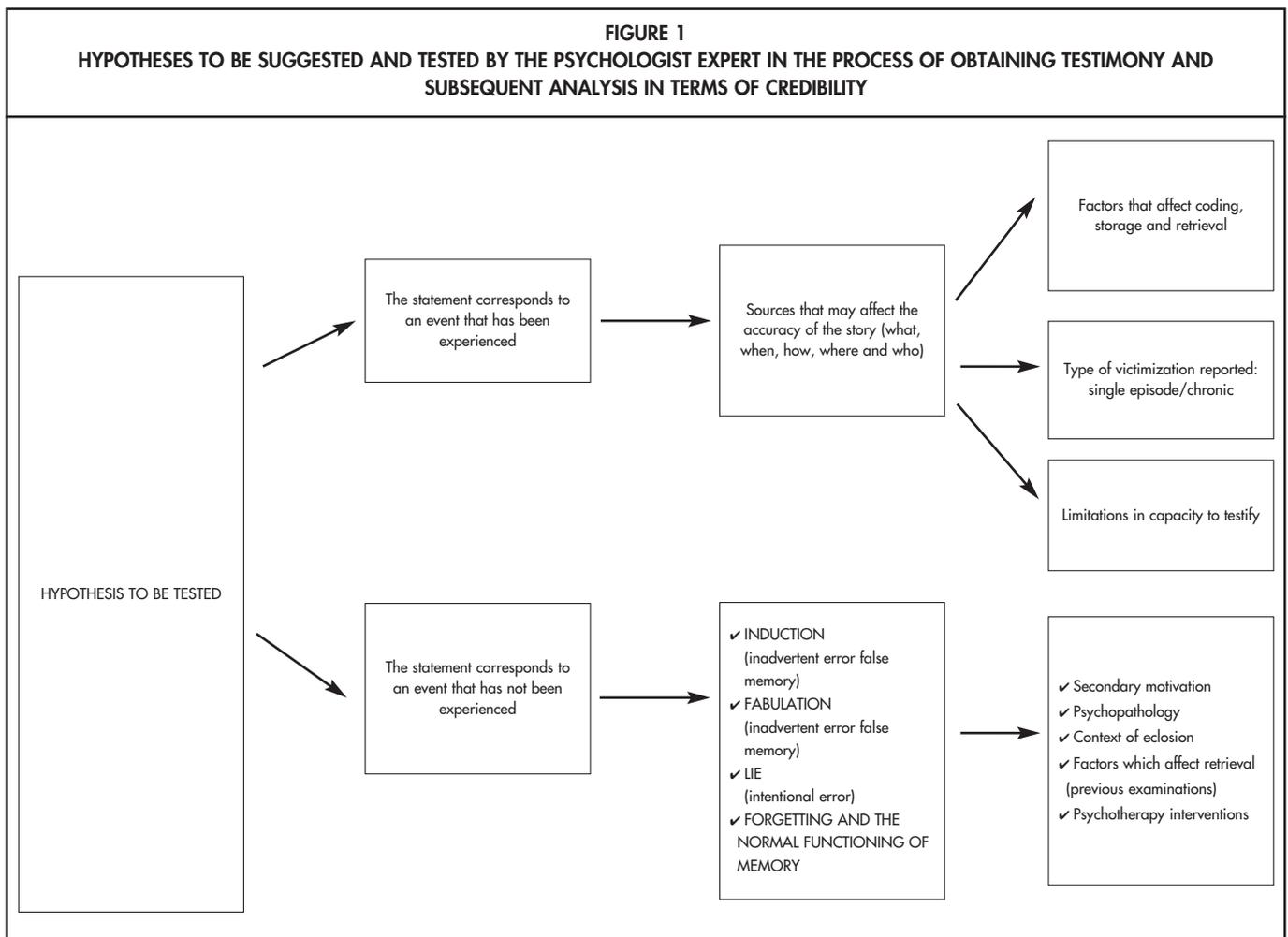
that memory, seeking to compare them with the analysis of all of the rest of the information and, necessarily, throughout the interview. At least four possibilities are suggested. In the first, H<sub>2.1</sub>: the memory has been *induced* in the child, who is not aware of its inaccuracy, whereby the degree of precision and certainty that will manifest is full (*suggested memory*). This mnemonic manipulation of the child may be intentional (an adult who wishes to harm the accused, for example, in divorce cases), or it may be due to an interpretive error (the child describes a recreational activity or hygienic handling and the adult perceives a non-existent sexual intentionality initiating a path of incorrect discussions with the child - suggestive interviews-), or a professional negligence (inadequate psychological evaluations and interventions). These forms are not mutually exclusive and may occur simultaneously. As a second possibility, H<sub>2.2</sub>: the memory can be the result of a *fabulation*, in which case the child's conviction concerning the reality of the events described will also be high. Psychopathological conditions such as psychotic symptoms, impaired consciousness due to consumption of toxic substances or drugs, or incipient abnormal personality conformations could be the basis of these cases. Unfortunately, when the source is a suggested memory it is

difficult to establish the differential diagnosis from a memory whose origin is an event that was actually experienced, because both are experienced as real (Köhnken et al, 2015; Volbert & Steller, 2014). The third possibility H<sub>2.3</sub>: the story is intentionally false (*lie*), and is guided by a secondary motivation (animosity toward the accused, parental interference, feelings of resentment and revenge, protection of a third party, etc.) Finally H<sub>2.4</sub>, where the story is false because of distortions due to forgetfulness and the normal functioning of memory (*erroneous memory*).

With the analysis of the file, the forensic psychologist will also be able to evaluate the presence of factors that would limit the subsequent analysis of the testimony in terms of credibility. If these factors are present, the judge should be informed in order to be able to consider the claim, since any subsequent issue regarding the testimony would be seriously compromised, lacking scientific validity. Thus procedural diligence for the child is avoided, contributing to minimize the secondary victimization. These factors include the following:

- ✓ The cognitive capacity of the child to provide an account of the alleged facts of sufficient length and quality. Thus, although there is inter-subject variability, children of preschool age (3 to

**FIGURE 1**  
**HYPOTHESES TO BE SUGGESTED AND TESTED BY THE PSYCHOLOGIST EXPERT IN THE PROCESS OF OBTAINING TESTIMONY AND SUBSEQUENT ANALYSIS IN TERMS OF CREDIBILITY**



5 years old) are developing the capacity of episodic memory, so their memories are fundamentally semantic (decontextualized, based on knowledge and without the phenomenological feeling that they were the protagonist of those events). Therefore, children of this age lack the spatiotemporal anchor and cannot establish when or where the alleged incidents occurred. They are not able to individualize facts so they confuse general patterns with episodes (Roberts & Powell, 2001) and they are not able to provide information on how many times the alleged events occurred. They have difficulty in establishing the origin of the memory, which together with their vulnerability to suggestion, increases the possibility of generating false memories if they have been interrogated successively or inappropriately. If leading questions are used, their answers come from the (semantic) knowledge that they may have gained from comments, suggestions, movies or other sources and not from their real experience (Manzanero & Barón, 2014). In this case, stereotypes may play a significant role in the generation of false statements (Leichtman & Ceci, 1995).

- ✓ The exposure of the child to sexual information either due to having had previous sexual experiences, having/sharing sexual material or having been exposed to sexual relations between adults. Some studies show that 80% of boys and almost 50% of girls have had contact with sexual material during childhood (Reynolds, Herbenick & Bancroft, 2003). Also of interest is the degree of intimacy between the adults in the house (i.e., overcrowding in shared housing) that may guide us on the likelihood of the children being exposed to the sexual practices of the adults with whom they live.
- ✓ The relationship between the complexity of the allegations and the cognitive ability of the child. When the events are so simple that the child's cognitive ability is such that they could easily generate them with realistic characteristics, we must not apply the assessment of testimony protocols (Köhnken et al., 2015).
- ✓ Previous discussions with the child regarding the alleged events: number and forms. This is to determine the existence or otherwise of false memories, especially in preschool children. Sometimes the viewing of the judicial examination of the child, or previous examinations recorded by other professionals (police, health workers, family, etc.) is sufficient to inform the judge about the impossibility of analysing the child's testimony due to the possible contamination or re-processing of the original memory.
- ✓ The time elapsed between the experience and the disclosure. Here we pay attention to the factors affecting the storage of the information.
- ✓ The time elapsed between the disclosure and the forensic examination. This should take into account the context and form of the disclosure (spontaneous/questions, playful/hygiene context, domestic/outside the family, etc.), the reaction of the adults in the child's environment (in cases of pre-schoolers, this will be the reference from which the child interprets the situation, either in a neutral or negative tone, which will affect the encoding of the event) and discussions prior to the forensic assessment (number and forms) that can give us an idea of the factors affecting the retrieval of the information.

Keeping these areas in mind will avoid important information being forgotten, which will minimize the number of examinations of the child and facilitate the testing of the different explanatory hypotheses about the origin of the memory that the child provides, so we will have more control over the appearance of possible biases on the part of the evaluator.

The following table presents a possible protocol to guide the analysis of the court record (the same information can be used to test different hypotheses):

It will also be important to consider the various statements of the child or adult who filed the complaint to guide, if necessary, the questions for checking the information during the interview.

It is necessary to record the interview because this is a prerequisite for the subsequent application of the methods of analysis of testimony (Wakefield, 2006). This is because it enables the assessment by two experts independently (review and criticism of the considerations of the other and compiling the findings of the two experts), it enables the review by different legal operators (transparency of the process of expert evaluation) and it facilitates the exercise of the principle of contradiction by the parties (Manzanero & Muñoz, 2011). In addition, recording the interview leaves us more time to listen, as we do not have to take notes, so we can address possible signs of discomfort, anxiety, etc. in the child. Furthermore, it is the only way to ensure, after viewing, that we have not inadvertently asked inappropriate questions. Our own recollection of the interview is very unreliable in this respect.

#### ***Prior information collected through contact with the adult context of the child***

The interview of the adults in the socializing context of the child has three main objectives: a) to continue to obtain data for testing the hypothesis; b) to have information on the child (hobbies, tastes, preferences, relevant personality characteristics, possible separation anxiety, information the child has been told regarding the forensic examination, etc.) to facilitate the establishment of the rapport (warm and trusted atmosphere) on the day of the examination, as well as other important information for the child's interview, for example, the degree of fluency in the case of foreigners or terms the child uses to name the genitals; c) obtaining an account of an event they have experienced close in time to the alleged acts which will subsequently allow us to appreciate the child's narrative style.

On the first point, the interview with the significant adults can help us to gather data for testing our hypothesis in relation to:

- ✓ The child's cognitive capacity (they may be able to provide data on academic performance in relation to the peer group, psycho-educational examinations, etc.)
- ✓ The child's tendency to confabulation or fantasy
- ✓ Clinical mental health diagnoses
- ✓ Psychological treatments before or after the alleged events
- ✓ The context and form of the disclosure
- ✓ The reaction of the adult context at the disclosure
- ✓ Related discussions with the child by the adults in the environment (number and forms)
- ✓ The psychological state of the minor pre- and post-complaint (significant internalizing and externalizing changes)



- ✓ Handling of sexual information (degree of supervision of Internet access that the child has, access to pornographic material at home, possible exposure to sexual relations between adults at home, possible overcrowding in housing conditions, etc.)
- ✓ Family relationships (relational dynamics between the different members of the family, inter-parental relationship, management of the rupture process in the event of family separation). In the case of accusing a parent within a context of family separation, it is important to inquire about the child's relationship with that parent prior to the rupture. Based on forensic practice a number of indicators have been identified of the instrumentalizing of CSA complaints in cases of conflictive separations. However these still lack empirical evidence, so they should be used as a guideline and with caution (Ruiz-Tejedor, 2004, Pereda & Arch, 2009).
- ✓ Defendant-family relationship (when it is not a case of abuse within the family)
- ✓ Possible previous situations of sexual victimization in the child or other family members, especially in the event that the complaint has been filed by an adult, the presence of sexual victimization from that person will be examined (possible hypervigilance to the risk of sexual abuse in the child and unwittingly influencing the child with inappropriate and repeated questions to confirm the absence/presence of the situation)

The interview with the child's adult environment will also serve to seek consent to examine the child in the absence of their legal guardians, and to make a video recording of the interview with the child. They will be informed that is a requirement of the technique being used and also a way to minimize the number of interviews with the child within the judicial context.

Finally, it is often the case that the adults request guidelines from the forensic psychologist with regards to how to deal with the child. The following are guidelines that may be transmitted: to avoid discussing the alleged acts with the child, although he or she may have to testify again in court; to act normally if the child talks spontaneously about what happened, without attempting to gather more information and protecting the child from the feelings that the information causes us; to avoid blaming the child for what happened, or asking why they did not act in a different way or tell what happened before.

**Physical environment and attitudes and behaviours of the expert psychologist**

We mentioned within the section of preliminary basics, that the framework of the interview should convey comfort and calm to the child. Insisting on this aspect, it is important that it is carried out in a private space with sufficient lighting, adequate ventilation and a pleasant temperature, with furniture adapted to the size of the child and free from disturbances and objects that may distract their attention. On this note, we must ensure that we will not be interrupted by third parties or by other elements

**TABLE 1  
PROTOCOL TO GUIDE THE EXAMINING OF THE FILE**

FACTORS THAT WOULD LIMIT / IMPEDE SUBSEQUENT ANALYSIS OF THE TESTIMONY	FACTORS WHICH WOULD EXPLAIN THE TELLING OF A STORY ABOUT A SITUATION THAT WAS NOT EXPERIENCED	FACTORS THAT MAY AFFECT THE ACCURACY OF AN ACCOUNT OF A SITUATION THAT WAS EXPERIENCED
<ul style="list-style-type: none"> <li>✓ Child's age (cognitive ability).</li> <li>✓ Number of discussions with the child from disclosure to the forensic evaluation.</li> <li>✓ Questioning strategies carried out.</li> <li>✓ Complexity of the alleged events.</li> <li>✓ Previous sexual experience and knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Victim-victimizer relationship prior to the formal complaint. In very young children, the relationship between the family and the accused. Important if disclosure arises in a separated family or one in the process of separating (analysis of the management of the rupture process)</li> <li>✓ Presence of clinical reports that could include a psychopathological condition prior to the child's complaint or a disability.</li> <li>✓ Number and type of previous discussions with the child.</li> <li>✓ If the child is receiving psychotherapy it is necessary to enquire what types of interventions are underway (therapeutic model).</li> <li>✓ Context and form of disclosure (spontaneous/directed). Important if it was directed, if it was due to behavioural indicators of suspected abuse or after visits with the other parent in the case of separated families. If it was spontaneous, it is important to address the context in which it "eclosed" or emerged (i.e., in a context of sexual content –e.g., in a class on sexuality-, play, neutral context, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Factors of the event and the victim:</b></li> <li>✓ Perceptual conditions, (lighting, noise, etc.)</li> <li>✓ Duration of the event</li> <li>✓ Attentional level and consciousness (i.e., consumption of toxic substances)</li> <li>✓ Degree of violence exercised in the crime</li> <li>✓ Emotional state of the alleged victim (i.e., traumatic experience)</li> <li>✓ Victimization - a single episode or chronic</li> <li>✓ <b>Retention Factors:</b></li> <li>✓ Delay (time elapsed since the alleged victimization and disclosure)</li> <li>✓ Number of times that the child has had to recall the alleged facts</li> <li>✓ Revictimization</li> <li>✓ Reaction of the context of the child to the disclosure</li> <li>✓ Therapeutic interventions that involve re-telling what happened</li> <li>✓ <b>Retrieval factors:-</b> Previous discussions with the minor (number and type of questions used). If any of these discussions have been recorded, the expert will request the recording (i.e., court examination).</li> <li>✓ Type of victimization reported (single episode / chronic over time)</li> <li>✓ Psychological state of the child in relation to the ability to testify (clinical reports existing on file, disability reports, etc.)</li> </ul>



(telephone, etc.) during the course of the interview. Anything that might intimidate the child must be avoided as it would hinder the establishment of rapport (González et al, 2013; Lamb, Orbach, Hershkowitz, Esplin & Horowitz, 2007). The literature agrees in suggesting that, with younger children, it may be useful to provide paper and crayons during the forensic interview (Poole & Dickinson, 2014), while the use of elements that encourage playing games or fantasy are contraindicated (Wakefield, 2006). We must devote sufficient time to the creation of this rapport and not underestimate its importance, since much of the interview process will depend on it.

The basic rule for approaching an interview with a minor is that the expert must adapt the intervention to the developmental stage of the child, as this will delimit their skills (cognitive, motor, language, social, emotional, etc.) Addressing this aspect will make it possible to adapt the interview so that: a) it is understandable to the child; b) it facilitates spontaneity and fluidity; c) the data obtained can be interpreted in a manner befitting the child's developmental age. For this reason, in many cases, a prior assessment of the child's cognitive skills is essential in order to testify (Contreras, Silva & Manzanero, 2015).

Continuing with the importance of adapting the interview to the child, it is appropriate for the interviewer to dress informally but neatly, to avoid marking the asymmetry of the relationship, but not so overly casual as to make the child believe they are in a situation of play (Fernández-Zuñiga, 2014). With regards to non-verbal communication, the interviewer's eye-level should be at the same height as the child's to stimulate their treatment as equals, to encourage communication and to perceive the nonverbal signs that reflect their emotional state. Direct eye contact is avoided when the alleged allegations are addressed. The correct body posture for the expert expresses receptiveness to the discourse of the child, leaning slightly forward and without folding the arms. When speaking, it will in a warm and mellow tone, and with a rather slow pace, expressly avoiding childish language. It is necessary to avoid being overly warm and friendly, as this can cause an excessive desire to please, which facilitates the provision of more extensive information but can compromise the reliability. The interview style should be flexible, as children react poorly to rigid contexts and interviewing methods (Lamb et al., 2007).

### Phases of the interview

Although when describing the interview process, it is useful to distinguish a series of phases with their objectives and appropriate tasks, we must not see the structure presented here as a series of closed phases that are carried out in a certain order. On the contrary, it should be understood as a flexible process that we must continue to adapt according to the circumstances as they arise at any moment during the interview. The expert must always bear in mind the goals of the forensic interview: to obtain the most extensive and accurate account possible regarding the alleged incidents in the formal complaint (González et al, 2013), seeking to control and minimize any possible interference (cognitive or procedural) that could affect the testimony.

All of the different models of forensic interview that have been published (American Professional Society on the Abuse of Children, 2012; American Psychological Association, 2013; González et al, 2013; Lamb et al, 2007; Powell & Snow, 2007; Wakefield, 2006) include three phases: 1) the phase of rapport-building and instructions, 2) the substantive phase or obtaining the statement, and 3) the closing phase of the interview. Following on from the previous studies, we propose a division of the interview process into four phases (González et al, 2013):

#### a) Introductory phase

This is the initial contact with the child, and from this the child will develop their first impressions of the situation and the expert. The main objectives of this phase are to establish rapport and to set the stage for the interview. This phase is also important to encourage attention and a sense of security (Ezpeleta, 2001), so the child will be encouraged to express any doubts or concerns they may have. They will be informed where their family members (or the caregivers who have accompanied them) will be for the duration of the interview. It is important to personalize the intervention, using the child's name when we talk to them, to reassure them and reduce their stress and the feeling of being evaluated. These are all elements that can achieve a good atmosphere.

Tasks of this phase:

- ✓ To receive the child and present the interviewer; the aim is to establish a personal relationship. The expert will explain who they are (name) and what their professional role is, taking the opportunity, in simple terms, to explain what the examination will consist of (i.e., *I am a psychologist and part of my job is to ask children how they are, how things are at school, with the family, with friends and, if they have had a problem, if they want to, they can tell me to see if I can help*). This presentation will later facilitate the start of the interview with neutral topics in order to reach the child's alleged legal problem gradually.
- ✓ In young children it may be useful to explain the legal context they are in, in terms such that they can understand it. Who we are (forensic psychologists), who we help (describing the different legal operators) and why (to protect them in case they have a problem).
- ✓ The child will be asked whether they know the purpose of the examination and who has explained it to them. As well as testing our hypothesis, this can also serve to re-structure with the child any inappropriate expectations regarding the examination (Caso et al., 2011).
- ✓ Clarification of the interview process. This is so that the children understand the rules that will govern the interaction, which will make them have more control over the situation, minimize their anxiety and facilitate cooperation with the expert. For example, recent research indicates that children are less likely to give false testimony if they have promised to tell the truth before the substantive phase of the interview (Lyon & Evans, 2014). The basic rules are shown in Table 2.
- ✓ The need to listen carefully to the questions and not be in a hurry to answer.- The importance of telling the truth. Their



understanding of the concepts of truth and falsehood will be evaluated as we progress.- There are no right or wrong answers.- The child just has to tell the things that really have happened to them.- If the child does not know the answer to a question, they must answer "I do not know".- If the child does not remember something, they must answer "I do not remember".- If the child does not know or remember the answer to a question, saying "I do not know or I do not remember" is fine. - It is not obligatory to answer all of the questions. If the child does not want to answer a question, they can say "I do not want to answer".- The child can rectify when they realize that they made a mistake in any answer. - The child can correct the interviewer if the latter makes a mistake when recalling any information they may have about what happened. Table 2. Basic rules of the interview

- ✓ Clarification of the limitations of confidentiality. We need to clarify to the child that we will transmit what he/she tell us, to the judge, who is in charge of protecting him/her.
- ✓ We explain to the child that the interview will be recorded, as well as the reasons and the importance of this. A test recording can even be made that serves as a game for establishing rapport.

b) Transition phase

The objectives of this phase are the examination of the cognitive and social skills of the children that affect their ability to testify, training them in the art of free narrative that we will use in the next phase (emphasising the requirement that they describe their experience in as much detail as possible) and evaluating their memory style.

For the assessment of the capacity to testify, it may be useful to use the CAPALIST protocol (Contreras et al., 2015), which was created to assess these skills in children and people with intellectual disabilities. On this point we must take into account the child's clinical history or whether psychopathological indicators are detected during the interview, in which case the psychologist must conduct a thorough psychopathological examination.

**TABLE 2  
BASIC RULES OF THE INTERVIEW**

- ✓ The need to listen carefully to the questions and not be in a hurry to answer.
- ✓ The importance of telling the truth. Their understanding of the concepts of truth and falsehood will be evaluated as we progress.
- ✓ There are no right or wrong answers.
- ✓ The child just has to tell the things that really have happened to them.
- ✓ If the child does not know the answer to a question, they must answer "I do not know".
- ✓ If the child does not remember something, they must answer "I do not remember".
- ✓ If the child does not know or remember the answer to a question, saying "I do not know or I do not remember" is fine.
- ✓ It is not obligatory to answer all of the questions. If the child does not want to answer a question, they can say "I do not want to answer".
- ✓ The child can rectify when they realize that they made a mistake in any answer.
- ✓ The child can correct the interviewer if the latter makes a mistake when recalling any information they may have about what happened.

Table 3 presents the primary and secondary cognitive skills that affect the ability to testify.

To help in the weighting of each of these skills, the expert psychologist can use an *ad hoc* drawing by criminal psychologists of the *Guardia Civil*, which is currently in the process of being validated (Manzanero & Gonzalez, 2013). Besides serving to assess the skills, this procedure is also used to evaluate the moral judgment of the child, observing whether they are aware of the consequences of their actions and their position with regards to the truth and lies. Content-neutral leading questions can also be introduced to assess the child's degree of resistance to suggestibility.

The examination of the level of adaptation of the child in the different areas of their life, personal, social, school and family, may also be relevant in determining the child's cognitive and social skills.

To train the child in the art of free narration the interviewer will ask the child to describe a neutral event that he/she has previously experienced, which the adult informants have already described to us (i.e., a recent family event) or alternatively, the description of the previous day or performing an activity of interest to the child (asking them to tell us about it from the beginning to the end, with all of the possible details). It is also of interest to request a description of an event experienced at the same time as the alleged abuses. This

**TABLE 3  
SKILLS FOR TESTIFYING. BASED ON CONTRERAS, SILVA AND MANZANERO (2015)**

PRIMARY COGNITIVE SKILLS	SECONDARY COGNITIVE AND SOCIAL SKILLS
<ul style="list-style-type: none"> <li>✓ <u>Memory:</u> Autobiographical Episodic Semantic</li> <li>✓ <u>Perception:</u> VisualAuditory</li> <li>✓ <u>Attention:</u> SelectiveSustained</li> </ul>	<ul style="list-style-type: none"> <li>✓ <u>Cognitive:</u> SpaceTime Descriptions QuantityAction-consequences</li> <li>✓ <u>Communication</u> Verbal language Non-verbal language</li> <li>✓ <u>Social interaction</u> Empathy Assertiveness Sociability Acquiescence Social desirability</li> <li>✓ <u>Identification of emotional states</u> Own Others'</li> <li>✓ <u>Moral capacity</u> Distinguishing between right and wrong</li> <li>✓ <u>Representation ability</u> Distinguishing reality/fantasy Capacity for imagination Reproducing scenes Reproducing conversations Assigning roles (I/you/he)</li> <li>✓ <u>Sexual knowledge</u> Body parts Sexual relationship Previous experiences</li> </ul>



examination will also serve to define their memory style and afterwards to compare it with the descriptions provided regarding the allegations.

c) Substantive phase or obtaining the account

The objective of this phase is to obtain a good quality account of the alleged allegations, i.e., as extensive and accurate an account as possible. The expert psychologist, at this stage, will take a secondary role, transferring to the child the protagonism for the flow of information. However, the expert psychologist will maintain an attitude and behaviour that encourage communication but are never judging, using expressions such as "I understand", "Go on", "What else?"

To enter this phase, the expert can repeat the information they provided to the child about their role and ask an open question, for example, "As I said earlier, part of my job is to ask children how they are, how is it going at school, with family, with friends and if they have had a problem, if they want, they can tell me, to see if I can help. We have already talked about school, you, your family. Now I want you to tell me everything that happened about why you have come to talk to me today." To go into more detail, once the initial account has finished, a second attempt can be encouraged: "You were there, not me, so you're the one with all the information about what happened and I'd like you to tell me everything you remember about that situation."

These types of communicative resources are very detailed in protocols that have already been tested, such as that of the NICHD, by Lamb et al. (2007), and the Revised Cognitive Interview (Fisher & Geiselman, 1992; Geiselman & Fisher, 1994).

In this regard, as well as information related to the contextualization of the alleged facts (who, when, how, where and how often), it is essential to gather as much information as possible regarding the alleged sexual interaction (before, during and after the alleged facts reported) with the behavioural descriptions of the child and the accused.

At this stage we can introduce a new interview rule: "What you tell us is important for us to be able to understand you better, so you have to tell us everything you remember, even if you think it is not important, but only what you're sure about, without making anything up." It will be important to clarify that if we ask the same question several times, it is not because their answer is incorrect, but because of our need to understand exactly, with the greatest possible clarity, how things happened.

The style of questioning should go from the most open to the most closed, being especially cautious not to use questions that contaminate the child's memory (Powell & Snow, 2007). Table 4 shows different types of questions and their usefulness in obtaining a quality account (González et al., 2013).

Just as there are types of questions that facilitate the interview process and the quality of the testimony obtained, there are also other issues that threaten the quality of the child's memory (see Table 5).

Tendentious questions (the child's attention is directed to something that has not been previously mentioned) Trick questions (the child's attention is directed to something he or she has not said before which is false) Leading questions (the question is asked in a way that the answer is already suggested) Forced-choice questions Yes/no questions Focused and directed questions (these combine the identity of the perpetrator with the alleged abusive action) Table 5. Inappropriate questions that may contaminate the child's memory.

d) Closing phase

Given the tension the child may have been under, in the closing stage of the interview the aim is to restore a positive emotional tone. To do this, the focus will once again turn to their strengths and interests, or even a few minutes could be spent doing an unrelated leisure activity. The child will be given clear information about what the next steps in the judicial process are, and caution must be taken not to make promises that cannot be met. Finally, we thank the child for their cooperation in the examination, not for having disclosed the criminal acts (González et al., 2013).

CONCLUSIONS

The usual lack of physical and biological evidence in crimes of

TYPE OF QUESTIONS	OBJECTIVE
1. Open questions	1. To obtain information without pressure or without directing the responses
2. Specific non-suggestive questions	2. To clarify further the information provided by the child
3. Closed questions	3. To clarify further the information provided by the child
4. Confrontational questions	4. To be used in cases where the victim has given contradictory information during the interview or with respect to other examinations, with the aim of clarifying the information provided by the child

1. Tendentious questions (the child's attention is directed to something that has not been previously mentioned)
2. Trick questions (the child's attention is directed to something he or she has not said before which is false)
3. Leading questions (the question is asked in a way that the answer is already suggested)
4. Forced-choice questions
5. Yes/no questions
6. Focused and directed questions (these combine the identity of the perpetrator with the alleged abusive action)



CSA greatly hinder their judicial investigation. Thus the testimony of the child takes centre stage as a means of evidence. The fragility of the memory footprint and an inappropriate technique for obtaining it can shut off potential ways of solving the crime.

In this article we have addressed the phase of obtaining testimony through the technique of the forensic interview. Depending on their developmental stage and personality characteristics, each child will describe their experiences with a particular style, which will affect the length, detail and clarity of the testimony obtained.

It is for this reason that an appropriate forensic interview must be adapted to the idiosyncrasies of the evaluated child and some flexibility must be allowed in its structure, but without neglecting any of the phases (introductory, transitional, substantive and closing) or the aspects described throughout this article. The scientific literature on the psychology of testimony, child development and cognitive processes is consistent in demonstrating the fragility of the cognitive indicia (testimony) and the ease of distorting it during the retrieval process, mainly due to the lack of professional qualification of those concerned, resulting in the use of improper interviewing techniques or adopting starting biases that influence the process of testing the hypotheses.

The forensic interview design proposed in this paper aims to facilitate the obtaining of a quality testimony from children, as extensive and accurate as possible, minimizing the different sources of error. However it is undoubtedly not enough to cling to this design or other protocols; psychologists who undertake these expert interviews must have specialised forensic psychology training, and specific training in interview techniques for cases of CSA, which also includes a period of supervised practice. However, although it is widely accepted that there is a need for this, there is no standardization of the psychological expert action in this area. A possible explanation for this situation is the existence of different protocols, which although they often coincide on many points, also display differences that give rise to discrepancies among researchers and practitioners.

However, knowledge of best practices in the evaluation of CSA and specialized training would contribute to a professional practice of quality and to control the sources of error.

It is important to continue to progress towards a consensual practice of action based on evidence and updated scientific research. The relevance of the correct conducting of a forensic interview in the case investigation is more than enough to justify that the professionals who carry it out must have accreditation or training to back up their intervention. The legal system should also always be aware of the consequences of bad practice on the psychological state of the child complainant, as it is a form of secondary victimization.

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## CHILD PORNOGRAPHY ON THE INTERNET

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*La descarga, intercambio y producción de pornografía infantil es una conducta delictiva de importancia creciente. La explotación cruel de menores y su vínculo con otros problemas como el abuso sexual despiertan preocupación social y académica. El presente trabajo aborda la naturaleza del fenómeno, las características de los materiales que se etiquetan como pornografía infantil, los rasgos psicológicos de los usuarios y los programas de tratamiento existentes.*

**Palabras clave:** Pornografía, Niños, Víctimas, Internet.

*Downloading, exchanging and producing child pornography is a criminal behaviour of growing relevance. The cruel exploitation of minors and its link with child sexual abuse raise great social and academic concern. The current paper approaches the nature of the phenomenon, the characteristics of the materials labelled as "child pornography", the psychological traits of the users and the existing treatment programs.*

**Key words:** Pornography, Children, Victims, Internet.

In recent years we have witnessed the emergence of a new criminal phenomenon: the consumption of child pornography on the Internet. Thousands of people have been detained for possessing on their personal computers huge amounts of files containing audio-visual material that includes images of varying seriousness, which can reach the severity of the sexual abuse of a minor. Some figures report an average of a thousand images of child pornography per consumer (Wolak, Finkelhor & Mitchell, 2011), while other studies increase the figure to more than 24,000 images (Long, Alison & Mcnamus, 2012).

The consumption of pornographic images of children is not new. In the 1970s there was a great explosion of child pornography produced, mainly in Denmark, the Netherlands and Sweden, which had liberal laws concerning sexuality. In these countries movies, magazines and books containing pornographic images of minors were sold legally (Morales, 2002). At the end of the decade, the media began to draw attention to the impact that the production of these materials had on children –in 1977 more than 2 million young Americans had been victims of child pornography– and the economic benefits it generated: over 5 billion dollars per year. Public opinion demanded a legislative change, so in 1978 the first specific laws against child pornography were approved. Over the following years, access to pornographic material was significantly reduced, forcing those interested in these types of materials to produce them themselves or to contact distributors through classified adverts in pornographic magazines for adults (Jenkins, 2001; Seto, 2013).

The emergence of the Internet in the late 1990s and its

remarkable development throughout the decade of the 2000s changed this criminal phenomenon drastically. The Internet has opened up unimagined possibilities for the development of communications and access to information, but it has also added a new dimension to the problem of sexual interest in children. The Internet, in fact, is not merely a means for the transmission of images and videos, but rather it is a key element in the phenomenon of child pornography, facilitating its production, distribution and consumption. Specifically, the Internet allows easy access to pornographic material, the availability of a wide variety of materials free of charge and the obtaining and use of images with total anonymity (more perceived than real) (Seto, 2013). The increasing child pornography on the Internet is a reality that is difficult to control. According to the United States Department of Justice (2010), more than 20 million IP addresses have been identified dedicated to the peer-to-peer (P2P) distribution of files containing child pornography.

In short, it is a problem with a media and social impact of the first order which is especially troubling due to the involvement of minors, the cruelty of the materials produced and exchanged, and the diversity of the social profiles of those involved.

The aim of this article is to review the most relevant aspects of this phenomenon which, as it will be shown throughout this work, is multi-causal, complex, and is full of angles and question marks. We summarize the most important aspects of the legal regulation of the problem, the nature of the materials categorized as child pornography, the psychological characteristics of the users and the existing treatment programs.

### LEGISLATIVE EVOLUTION

The fight against this type of crime, as joint action by different states, has its origin in the United Nations Convention on the Rights of the Child, where child pornography was described as a genuine violation of children's rights, and member nations were

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demanding to adopt precise measures to prevent the exploitation of children in pornographic materials (Article 34 of the UNCNC, 1989).

Currently Directive 2011/93/EU of the European Parliament and of the Council of 13 December 2011, on combating the sexual abuse and sexual exploitation of children and child pornography, sets out the European actions in this area. This directive, together with the Budapest Convention (Convention on Cybercrime of 23 November 2001) and the Lanzarote Convention (Convention of the Council of Europe for the protection of children against sexual exploitation and abuse, Oct. 25 2007) have been the basis of the recent reforms implemented in Spanish criminal law in combating this type of crime.

In Spanish law, there have been several amendments to the Criminal Code that have defined and detailed this criminal phenomenon. The reform of the Penal Code by Organic Law 11/1999 of 30 April, was the first punitive approach to this offence, covering behaviour that had been non-criminal until that time, such as the possession of pornographic material of minors for the production, sale, distribution, exhibition or facilitation of these activities. The reform of 2003 went a step further, and was the first time that the mere possession of child pornography was criminalized. In 2010, the new criminal law involved the punishment of a broad spectrum of behaviours related to child pornography, regulated exhaustively from the possession of such material to the production, sale, distribution, exhibition or facilitating of any of the above behaviours.

The current Criminal Code, recently approved by Organic Law 1/2015, of March 30, aggravates the punitive response and increases the number of criminal conducts related to child pornography<sup>1</sup>. As highlighted in Circular 2/2015 of the Public Prosecutor's Office on charges of child pornography, the new legislation extends the concept of child pornography, to include not only material made with real children but also *virtual pornography* (where the image of the child is an artificial but realistic creation, developed by computer or other means) and *technical pornography* (images in which people presented as minors appear in a sexual context).

The inclusion of virtual pornography responds to the need to punish conducts relating to pornographic material in which real children have not been used, but which consists of virtually produced images that represent children in a realistic way. Images of children that do not seek to resemble reality (for example, manga drawings), will not be considered child pornography. In addition, the high number of cases where it is impossible to determine the actual age of the person that appears in the abusive images has led to the inclusion of the concept of technical pornography, such that if the people in the pictures are presented as minors, the material will be considered child pornography.

Pseudo-child pornography or *morphing* –pornographic material in which minors or people with disabilities have not been used directly but their voice or image has been used or altered– was punished in the previous Penal Code through article 189.7. The current regulation has removed this type of pseudo-child pornography but now it can be punished as virtual or technical child pornography.

Another important change in the current Criminal Code is the inclusion of new punishable offences related to child pornography. Maintained as criminal behaviours are the use of children for pornographic purposes, the production and dissemination of child pornography and the possession of child pornography, with three new behaviours being added: *acquiring* child pornography, *knowingly accessing* child pornography and *attendance at* (exhibitionist or pornographic) *shows* involving minors. The inclusion of knowingly accessing child pornography is especially relevant. In the previous Penal Code only possession was penalized, which necessarily meant that the user had downloaded the material on the PC. And therefore, the simple display of this material, for example, via *streaming* remained unpunished. Knowingly accessing this material is incorporated by the current Penal Code in the same article that penalizes acquisition and possession, with the same punitive response being applied to the three behaviours.

#### STATISTICAL DATA

As a result of this progressive toughening of the Penal Code, a large number of people have been arrested and convicted for these types of crime in recent years in Spain. According to the Ministry of Interior in Spain around 400 arrests are made and charges brought per year for crimes related to child pornography.

These actions of the Forces of State Security often translate into concrete convictions. Specifically, The Alternative Sentences and Measures units of the General State Administration have received, from 2011 to the present, more than 200 cases of people who have to fulfil an alternative penal measure for this type of crime. Most of those convicted have to carry out a psychoeducational program in the community, as part of their sentence. It is estimated that this figure will increase exponentially over the coming years.

#### IMAGE TYPES

When describing this criminal phenomenon one of the key elements is the nature of the images that are consumed. What images can be considered criminal? Where is the boundary between an image that is allowed and one that is considered illegal?

The legal definitions of what is considered child pornography vary between countries and jurisdictions. Specifically, in Spain for material to be considered child pornography it must meet a number of premises. On the one hand, audio material is

<sup>1</sup> The current Penal Code, in its articles concerning crimes of child pornography, always refers to *child pornography or pornographic material with individuals with disabilities in need of special protection*. For simplicity, and because the majority are cases involving minors, including those who have a disability in need of special protection, the term “child pornography” is used generically.



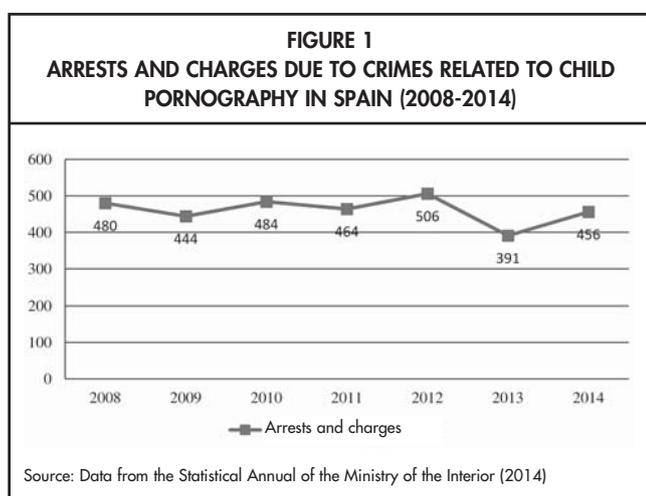
excluded because child pornography must necessarily include visual representations. On the other hand, simple images featuring naked children are not considered child pornography, as the requirement must be met that the images represent the minor engaging in a real or simulated sexually explicit conduct; or the images show the sexual organs of the child for primarily sexual purposes<sup>2</sup>.

The use of the term child pornography has been questioned by several authors, since it implies a parallel with adult pornography. Although the use of other definitions such as “abusive images” is more suited to the reality of the contents, the term “child pornography” is still used, especially in the legal context (Quayle, Erooga, Wright, Taylor & Harbinson, 2006).

In addition to criminal criteria, the correct classification of child pornography images serves therapeutic and research purposes. The type of images preferred by a consumer of child pornography is relevant information for their psychological profile and ultimate treatment. While the *legal classifications* are objective and distinguish the material that is allowed and that which is forbidden, based solely on its content, the *psychological classifications* analyse not only the content and severity of the images but also take into account the relationship between the user and the audio-visual material, the amount of images stored and how these images are used and organized.

Table 1 shows the COPINE<sup>3</sup> classification created in Ireland and used in the UK to categorize the severity of child pornography images.

According to the empirical data, the tendency to consume more serious images (classified as levels of 5 to 10) is high. Long *et al.* (2012) found that 56.64% of the images consumed by a sample of individuals convicted of possession of such material were Level 5, and 20.19% were Level 9, while the data from Aslan and Edelmann (2014) indicated that 52% of their sample had images of level 10.



The analysis of the images stored by users of child pornography may not only be indicative of their paedophile interests but it also sometimes provides information about a compulsive component in the accessing, storage and collecting of such images. The size and organization of a collection of child pornography materials indicates the level of user involvement in the criminal behaviour.

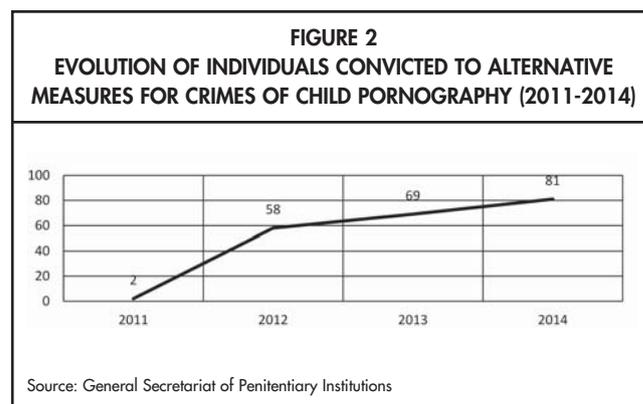
Consumers may organize their files based on the theme (oral sex, sex between children, for example) or in terms of the narrative (images spread over a continuum of severity, from simple naked pictures to involvement in sexual behaviour). Both dimensions are relevant to the user, to maintain and generate fantasies as well as to personalize the victim and to become psychologically involved with him/her. They are also important in facilitating the sharing of files with other users on the Internet. In the collections of these offenders separate files are often also found where the newest or private materials is stored (Taylor & Quayle, 2003).

### CHARACTERISTICS OF THE PHENOMENON

The crime of child pornography is complex because it involves a chain of behaviours and a variety of actors.

*The producers.* The first link in the chain is the creation of the images. Both new images and old images from photographs and magazines circulate on the Internet. There are several criminal profiles. There are professional criminals who create the images for financial gain and have no sexual interest in children. There are other criminals who carry out abuse because they are paedophiles and feel sexually stimulated by children. Normally they record the images themselves or take photographs for their own personal consumption. Often such types of abuse are carried out in the context of what is known as “sexual tourism” (Sotoca, 2010; Wortley & Smallbone, 2006).

*The victims.* The minors who are victims of sexual abuse that occurs within the production of pornographic material are usually from countries where there is lax or nonexistent



<sup>2</sup> Criteria established in Circular 2/2015 of the State Attorney General.

<sup>3</sup> Project COPINE (Combating Paedophile Information Networks in Europe) was founded in 1997 in the Department of Applied Psychology of University College Cork in Ireland.



legislation in this area. They are also countries with high rates of poverty, which facilitates the access to the victims, which is often facilitated by the parents themselves. Russia, Ukraine, countries of the former Soviet Union, Southeast Asia and countries of Central and South America are usually the most frequent targets. However, domestic production can occur in any country (Sotoca, 2010).

*The distributors.* The images can be stored on servers located practically anywhere in the world. The distributors may be professionalized criminals who belong to organized criminal groups and who benefit financially from this activity. They may also be individuals who share the information without seeking profit, but they can use the images in exchange for images that are difficult to find or to improve their social status in the virtual communities that exist on the Internet. Child pornography may be located on web pages, exchanged by email or in e-groups, shared in real time via webcam, distributed through newsgroups where users talk about their shared interests and upload audiovisual materials, or it can be exchanged in chat rooms and through P2P networks (Wortley & Smallbone, 2006).

*The consumers.* The last link in the chain are the consumers of this type of material, most of whom are from Europe and North America.

As is the case with other sex offenders, heterogeneity is a defining characteristic of this population. Although there are a number of psychological and social vulnerabilities that appear frequently in this population, it cannot be established that there is a single profile of the child pornography user, in the same way that one cannot speak of a profile of a sex offender or child molester. This heterogeneity in terms of the characteristics of the aggressors and the reasons for their behaviour has resulted in

theoretical models that explicitly recognize it as the *pathways model* (Ward & Siegert, 2002). This model suggests that the etiological pathways that can lead to sexual crime are deficits in intimacy and social skills, deviant sexual scripts, emotional dysregulation and antisocial cognition. Middleton, Beech and Mandeville-Norden (2005) classified a sample of 194 users of child pornography in each of these etiological pathways. Of all participants, 77% could be assigned to one of these pathways. Most of those who could be classified fit the paths of intimacy deficit (35%) and emotional dysregulation (33%). The proportion of participants assigned to the other groups was lower (5% to distorted sexual scripts and 2% to antisocial cognition). Although there are two groups of factors that appear to be the most common, the sample seems to be distributed among all the categories that define the model, and in fact 33% of the individuals could not be classified.

Thus, the various aspects that are described in this section may appear in varying degrees in an individual case, they may be combined in different ways, or they may not appear at all.

The specialized literature on sexual assault has traditionally focused on the autobiography, or the *personal learning history*, but recently it has been placed within attachment theory. From this perspective, the negative life events during childhood result in a failure to establish normal emotional ties (Craissati, 2009). This starting disadvantage marks the development of the child, who fails in his/her subsequent socialization and begins to develop negative coping strategies (such as alcohol, drugs, deviant sexual fantasies) to deal with his/her daily frustrations (Maniglio, 2012). In the case of users of child pornography there is evidence of the presence of negative or even traumatic life events during childhood. Webb, Craissati and Keen (2007)

TABLE 1  
TAXONOMÍA DE DISTINTOS TIPOS DE PORNOGRAFÍA INFANTIL (ESCALA COPINE; TAYLOR, HOLLAND Y QUAYLE, 2001)

Level	Name	Characteristics of the images
1	Indicative	Non-erotic and non-sexualised pictures showing children in their underwear, swimming costumes from either commercial sources or family albums. Pictures of children playing in normal settings, in which the context or organisation of pictures by the collector indicates inappropriateness.
2	Nudist	Pictures of naked or semi-naked children in appropriate nudist settings, and from legitimate sources.
3	Ero	Surreptitiously taken photographs of children in play areas or other safe environments showing either underwear or varying degrees of nakedness.
4	Posing	Deliberately posed pictures of children fully clothed, partially clothed or naked (where the amount, context and organisation suggests sexual interest).
5	Erotic Posing	Deliberately posed pictures of fully, partially clothed or naked children in sexualised or provocative poses.
6	Explicit Erotic Posing	Pictures emphasising genital areas, where the child is either naked, partially clothed or fully clothed.
7	Explicit Sexual Activity	Pictures that depict touching, mutual and self-masturbation, oral sex and intercourse by a child, not involving an adult.
8	Assault	Pictures of children being subject to a sexual assault, involving digital touching, involving an adult.
9	Gross Assault	Grossly obscene pictures of sexual assault, involving penetrative sex, masturbation or oral sex, involving an adult.
10	Sadistic/Bestiality	Grossly obscene pictures of sexual assault, involving penetrative sex, masturbation or oral sex, involving an adult.



studied two samples of individuals convicted of crimes relating to child pornography and child abusers. In the group of child pornography, 18% reported a history of neglectful parenting practices in childhood, 12% claimed to have suffered physical abuse and 26% sexual abuse. Babchishim, Hanson and Hermann (2011) conducted a meta-analysis of studies examining the psychological characteristics of users of child pornography. Compared with the general population, they had higher rates of physical and sexual abuse.

An *early initiation of sexual activity* is also detected in this population. Elliott and Beech (2009) point out that the users of child pornography are more likely to have been involved in heterosexual sexual conduct with other children before puberty compared with samples of child molesters. The authors hypothesize that this early exposure to sexual behaviours can result in the development of distorted expectations about sexuality.

In the field of emotions, users of child pornography tend to *cope with their negative emotional states through behaviours such as using abusive material on the Internet and masturbation* (Quayle, Vaughn & Taylor, 2006). In a qualitative study, Quayle and Taylor (2002) found that aggressors admitted taking more risks when experiencing negative emotional states. Moreover, they were more likely to convince themselves that the images they were looking at had nothing to do with the actual abuse of children.

In the field of cognition, child pornography users develop *thoughts that exclude them from responsibility* and that allow them to establish a complex psychological relationship with the children portrayed in the images. On the one hand, they reduce the severity of these materials to simple pictures or videos for which they are not responsible. The signals of distress that may appear in the children are suppressed or distorted (Quayle & Taylor, 2002). For example, Babchishin et al. (2011) note in their meta-analysis of the characteristics of this population that they tend to show greater empathy than child molesters. But at the same time, the users of pornography seem to generate a fantasy of pseudo-intimacy with the minors in the images, which allows them to develop a fictitious emotional relationship with them. Elliott, Beech, Mandeville-Norden and Hayes (2009) compared two samples of users of child pornography and child molesters with respect to different psychological variables. Abusers tend to be less empathic on three of the four subscales of the Interpersonal Reactivity Index (IRI), a self-report on empathy. Users of pornography however obtained higher scores on the scale of Fantasy, which assesses the ability to identify with fictional characters. Middleton, Mandeville-Norden and Hayes (2009) found that a sample of users of pornography was unchanged on the Fantasy subscale after completing a specific treatment program. They did however find changes on other subscales of the IRI and a scale regarding distortions associated with empathy with the victim.

This links to difficulties in the field of social relations. Within the heterogeneity that characterizes this population, at least one segment of users of child pornography on the Internet has *difficulty creating intimate relationships*, which encourages the use of abusive material on the Internet as a substitute for unsatisfying social relationships (Seto, Reeves & Jung, 2010).

A controversial issue is the existence of a *deviant sexual interest* in these people. The research has analysed whether consumers have higher levels of sexual arousal to children than those who commit sexual abuse. The meta-analysis by Babchishin et al. (2011) included three studies examining this issue. A total of 435 offenders were assessed, including consumers of pornography, child molesters, sex offenders and adult patients with paraphiliac problems but no criminal behaviour. The authors found that as a group, online consumers of child pornography showed a significantly higher pattern of sexual arousal towards children than other groups. In these three studies, the methodology used to assess sexual interest was penis plethysmography (Seto, Cantor & Blanchard, 2006), the Questionnaire of Sexual Fantasies by Wilson (Sheldon & Howitt, 2008) and a clinical estimate of sexual deviance (Wood Seto, Flynn, Wilson-Cotton & Dedmon, 2009). Therefore, these data are from different sources and are inevitably subject to limitations (see Kalmus & Beech, 2005, for a thorough review of these techniques). These results have psychological coherence *a priori*. Child molesters are a heterogeneous population and only some of them have a paraphilic interest in children. Other abusers are individuals with antisocial tendencies or serious psychosocial problems (such as an alcohol use disorder) who abuse a minor opportunistically (Seto, 2008). However, as Seto (2013) states, collecting child pornography, looking at it numerous times and using it with masturbatory purposes is, at least, indicative of a sexual interest in children. However, this issue is still under heated academic discussion.

#### TREATMENT PROGRAMS

What can psychology offer in the treatment of this population? Concern about this phenomenon together with its legal repercussions have led to various institutions involved in the treatment of offenders developing specific intervention programs. Table 2 summarizes the main features of such programs.

#### *Fuera de la Red [Off the Internet] (SGIP, Herrero, Negredo, Lila, García, Pedrón & Terreros, 2015)*

*Fuera de la Red* is a program of cognitive behavioural intervention implemented in the Alternative Sentences and Measures units dependent on the Spanish General Secretariat of Penitentiary Institutions. From a theoretical point of view, the program is based on the model of relapse prevention and the good lives model. It includes a phase of motivation to change developed in collaboration with the University of Valencia which is developed transversally throughout the program. The treatment phase includes thirty-two group sessions.

The intervention attempts to adapt to the heterogeneity of the population to be treated. Although it is a standardized treatment package, the motivation-to-change phase seeks to link the personal interests and goals of each user. Additionally, during the program each user develops a personal functional analysis of their improper conduct on the Internet. Finally, the manual offers the professionals dynamic and optional exercises that may or may not be used depending on the characteristics of the users.



**Internet Sex Offender Treatment Program (i-SOTP; Middleton & Hayes, 2010)**

The British National Offender Management Service carries out in its probation services a group treatment program for people convicted of offences relating to the distribution of child pornography. The program objectives are to reduce both the probability of future Internet-related crimes and the likelihood of real sexual abuse occurring. The i-SOTP is essentially a cognitive behavioural program aimed at modifying the risk factors. From a theoretical point of view it is also influenced by the Good Lives Model (Ward & Stewart, 2003). The treatment process includes a pre-program meeting as an introduction, six modules (35 sessions of two hours) and a review meeting.

**Berlin Dissexuality Therapy (Institute for Sexology and Sexual Medicine, 2013)**

The BEDIT program is aimed at the group treatment of men with a sexual interest in prepubescent or pubescent children. It is based on cognitive behavioural intervention, sex education and pharmacological support. The program was developed

within the *Dunkelfeld* Prevention Project, which seeks the community prevention of child abuse and child pornography use. The treatment is aimed at people living in the community who are (a) worried about their sexual interest in or behaviour toward minors and who seek help to deal with their sexuality and/or (b) they fear they may have sexual contact with a child (or do so again), and (c) they are not currently involved in legal proceedings for the sexual abuse of minors.

**Only Pictures? (Quayle, Erooga, Wright, Taylor & Harbinson, 2006).**

In their book *Only Pictures?*, Quayle et al. (2006) propose a number of areas of intervention, largely derived from the explanatory model of problematic Internet use by Taylor and Quayle (2003). For each area they review the existing literature at the time and propose a series of therapeutic exercises to work through with the users.

In parallel with this project, the same team has developed a web resource, the website [www.croga.org](http://www.croga.org). This site adapts the contents and exercises of *Only Pictures?* to a self-help format. Each unit includes a brief psychoeducational reflection and a series of exercises. One can also register as a professional and provide feedback to the project managers. The page is available in Spanish.

**TABLE 2  
INTERVENTION PROGRAMS FOR USERS OF CHILD PORNOGRAPHY**

Program	Institution Responsible	Modules
i-SOTP	NOMS	<ul style="list-style-type: none"> <li>✓ Motivation to change.</li> <li>✓ What needs does the criminal conduct cover?</li> <li>✓ Victim awareness and assuming responsibility.</li> <li>✓ Emotional self-regulation.</li> <li>✓ Community, collection and compulsivity.</li> <li>✓ Prevention of relapse and new life goals.</li> </ul>
BEDIT	Institute for Sexology and Sexual medicine	<ul style="list-style-type: none"> <li>✓ Psychoeducation.</li> <li>✓ Acceptance and motivation.</li> <li>✓ Perception.</li> <li>✓ Emotions.</li> <li>✓ Sexual conduct and fantasy.</li> <li>✓ Empathy and perspective taking.</li> <li>✓ Curriculum and plans.</li> <li>✓ Coping and problem-solving.</li> <li>✓ Social relationships.</li> <li>✓ Intimacy and trust.</li> <li>✓ Planning for the future.</li> <li>✓ Protective measures.</li> </ul>
Fuera de la Red [Off the Internet]	SGIP	<ul style="list-style-type: none"> <li>✓ My personal history.</li> <li>✓ Positive emotions.</li> <li>✓ Understanding my behaviour.</li> <li>✓ My relationship with images.</li> <li>✓ The images are real children.</li> <li>✓ A new intimacy.</li> <li>✓ Positive sexuality.</li> <li>✓ Off the Internet</li> </ul>
<i>Only Pictures?</i>	Project COPINE	<ul style="list-style-type: none"> <li>✓ The process of committing crimes on the Internet.</li> <li>✓ Victim awareness.</li> <li>✓ Fantasy and its escalation.</li> <li>✓ Emotional avoidance.</li> <li>✓ Social activity and images on the Internet.</li> <li>✓ The process of collecting.</li> <li>✓ Maintaining the changes.</li> </ul>

**CONCLUSIONS**

The problem of child pornography is novel, complex and changing. It has grown hand-in-hand with the technological revolution of recent years, which as we see daily is in a constant state of change. The people involved in its use are heterogeneous in their personal characteristics and in the nature of their motivations. There is a clear need for further research in this field. Despite the many questions that remain, the professionals involved in legal and penitentiary psychology must evaluate these offenders, treat them and report on them to the administrative and legal authorities. The urgency to provide practical answers exceeds the speed of the research and the profound reflection on the phenomenon. The police action, and the development and implementation of specific treatment programs seek to put a stop to a problem which, apart from other issues, raises worrying questions about the nature of human beings and our tolerance for cruelty.

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## MEMORY AND LANGUAGE IN TESTIMONIES OF 3- TO 6- YEAR OLD CHILDREN

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*La prueba testifical de menores de corta edad es, en muchos casos, la principal y única prueba indiciaria en los procesos penales. La memoria y el lenguaje son dos de los principales componentes en la declaración del menor que requieren un especial análisis, no sólo por el importante papel que juegan, sino también por la relación existente entre ambas capacidades. La vulnerabilidad de la memoria y su posibilidad de ser alterada mediante sugerencias, así como la variabilidad del desarrollo del lenguaje en el menor de 3 a 6 años edad, son dos factores de influencia en la recogida del testimonio. Estos factores, junto con la pericia del entrevistador en la adaptación de la entrevista al menor a la que va dirigida podrán conseguir una recogida de información fiable y libre de subjetividades que facilitarán la investigación de los hechos denunciados. El presente artículo presenta una visión conjunta de ambas capacidades desde la perspectiva del testimonio infantil en el proceso penal.*

**Palabras clave:** Memoria autobiográfica, Lenguaje, Testimonio, Niños preescolares.

*The testimony of pre-school children is, in many cases, the main and only evidence in criminal proceedings. Memory and language are two main components in the statement of the child and they require special analysis, not only because of the important role they play, but also because of the relationship between the two capacities. The vulnerability of memory and its ability to be altered by suggestions, as well as the variability of language development in the 3- to 6-year-old child, are two factors that influence the collection of testimony. These factors, together with the interviewer's skill in adapting the interview to the child, may obtain reliable information that is free of subjectivity and that will facilitate the investigation of the allegations. This article presents an overview of both capabilities, language and memory, from the perspective of child witness testimony as evidence in criminal proceedings.*

**Key words:** Autobiographical memory, Language, Testimony, Preschool children.

**T**his article aims to analyse two of the main capacities when interviewing minors involved as victims or witnesses of a crime: memory and language. When we refer to minors, we are talking about a broad and heterogeneous group whose evolutionary development changes with age. This article will focus on the characteristics of the testimony of children in the age range of 3 to 6 years.

Children in this age group that are the victims of crime or witnesses in criminal cases share several characteristics. Firstly, their vulnerability and fragility, which is doubly exacerbated, directly, as the subject of the crime under investigation, and indirectly, in reliving the events over and over again through the testimony, during the criminal proceedings following the crime. Secondly, the characteristics of the group must be borne in mind, since although the evolutionary stages have been clearly defined, they follow certain continuity that must be evaluated based on the individual characteristics. In addition, one must take into account the peculiarities of the police and criminal

justice process itself, which can negatively influence the testimony. Among these, we highlight the time elapsed between the events reported, the first revelation of the victim and the criminal proceedings, and the number of interviews or examinations which the victim and witnesses must go through. And finally, the peculiar characteristics of memory and language skills, as well as the relationship between the two, which we shall come back to later.

In legal texts such as Circular 3/2009 of the State Attorney General on the protection of child victims and witnesses, it is stated that according to the contributions of the psychology of testimony "an age limit for child testimony" is established, "situated around the age of three, a stage in which there exists greatly reduced cognitive-lexical ability and the psychological expert and the hearsay witness evidence acquire an indisputable role." In other words, from the point of view of this article, the testimony of the child who is a victim or witness of a crime will be influenced significantly by their language development, highly variable in this age range both at the level of lexicon or the number of words the child is capable of using, and at the semantic level, the meaning, sense and interpretation of the words learned, as well as the accuracy of the memories revealed.

In the following sections we will detail the particularities of child testimony in relation to criminal proceedings and we will

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go into greater detail regarding the above-mentioned capabilities.

### **Interviewing minors.**

Here we will highlight two of the biggest challenges that we face in the examination<sup>1</sup> of the child victim or witness aged between three and six years. The first difficulty is determining whether he or she is sufficiently capable of testifying (Köhnken, Manzanero & Scott, 2015; Manzanero & González, 2015) and, if so, whether he or she has any characteristic that must be taken into account in the interview, both when carrying it out and in the subsequent analysis of the information collected (González, Muñoz, Sotoca & Manzanero, 2013; Muñoz et al, 2016.) The second difficulty is in determining whether what the victim reported is their neutral memory, without interference or suggestions or, on the contrary, due to the number of times they have reported the facts to different people, there are errors in the testimony that may skew the information about what happened (Manzanero, 2010). These interviews must be meticulously prepared, understanding what has been learned so far, conducting various interviews with the hearsay witnesses, including the most relevant people from the child's environment, family members and professionals, as well as the person the child first told about what happened (Muñoz et al., 2016).

Next, and before addressing the capabilities of the minors, we will cover the basic characteristics all interviews must have, specifying the relevant information with regard to minors of a very young age. In addition, we will also identify the characteristics that the interviewer must have.

### **Characteristics of the information obtained**

Here we highlight some of the most important characteristics that every interview must have, particularly ones with the objective of gathering information about a crime.

As Márquez (2006) points out, the scientific guarantees of reliability, validity and accuracy indicate the quality of the data obtained by interview. Therefore, we have to answer certain questions relating to the information obtained during the interview, which must enable us to assess the following aspects:

- ✓ Reliability: the information that was obtained in the statement corresponds to that which was intended to be obtained.
- ✓ Accuracy: the information reported accurately represents what happened.
- ✓ Validity: the information obtained represents what happened.

Any forensic interview (police or judicial) must comply with these characteristics. Therefore, the training of interviewers is essential for managing the information obtained during the interactive process between the interviewer and the interviewee, and there must be no preconceived expectations, potential bias or prejudice. Moreover, the interviewer must conduct the interview while also facilitating the free account. Also an

appropriate level of motivation must be attained, because an excess of motivation on the part of the interviewee/victim can be negative because it could provide answers of high social desirability, just as a low motivation can lead to negativism, acquiescence or a lack of precision in the responses. Thus, during the interview, as complete and accurate a testimony as possible must be obtained, facilitating both the respondent's memory and their story, avoiding re-victimization as the events experienced are relived over and over again.

### **Forensic vs clinical interview**

The interview is one of the most used instruments for obtaining information. There are different types of interviews related to the scope of this work, including the clinical and forensic interview (police and/or judicial), and the various subtypes that are included in each one. Despite the fact that all of these interviews are aimed at obtaining the account of the interviewee, they will be different from each other, both in the format in which they are carried out and in the subsequent analysis (Echeburúa, Muñoz & Loinaz, 2011).

At one extreme is the clinical interview in which it is assumed that what the patient describes is true, and treatment is sought for the symptoms presented. Based on the information provided by the interviewee, the assessment by the clinical psychologist is begun. At the opposite pole is the forensic interview, which focuses on obtaining the most complete statement possible about the facts under investigation, which serves as indicia or evidence for the imputation and resolution of the case. In this type of interview there are many factors involved in both the quality and quantity of the information in the testimony.

### **WHY IT IS NECESSARY TO UNDERSTAND THE ABILITY TO TESTIFY OF CHILDREN BETWEEN THE AGES OF 3 AND 6**

The psychology of testimony refers to the understanding of the basic psychological processes that are involved when collecting and assessing the witness evidence (Manzanero, 2008). In the case of minors and very young children we have to take into account these basic psychological processes and how they are in relation to the evolutionary development of the child in question.

In relation to the analysis of the intellectual abilities and capabilities of children, the various studies and investigations refer to a general intelligence factor (g). However, "when reviewing the wide variety of theories on the structure of capabilities it became clear that none of them by itself was totally valid or universally accepted among the professionals of theory and practice" (Elliot, Smith & McCulloch, 2011, p. 40). Therefore, there is no commonly accepted theory by all of the psychological currents, although there is a common theoretical and empirical core that emphasizes that human capabilities cannot be expressed by a single cognitive factor, and that "these

<sup>1</sup> The term "examining the minor" refers to the interview carried out with minors that are the victims or witnesses in police or court proceedings.



human aptitudes make up multiple dimensions in which individuals show observable and solid differences (...) they are interrelated, but not completely overlapping; consequently many of them are differentiable" (Carroll, 1993). On the other hand, some studies have shown little relationship between intelligence quotient (IQ) as a general measure of intelligence and the ability to make a statement or identify a suspect (Kebbell & Hatton, 1999; Manzanero, Contreras, Recio, Alemany & Martorell, 2012).

All of this serves to highlight how difficult it would be to establish a single criterion both of the factors that must be evaluated to determine human aptitudes, and regarding which instruments should be used. However, it is essential to assess the capabilities for testifying with two objectives: to adapt interview protocols to the capabilities of the witnesses and then to evaluate appropriately the information collected. Therefore, a few years ago (Contreras, Silva & Manzanero, 2015; Manzanero & González, 2013; Silva, 2013), we began to develop a specific instrument to facilitate this evaluation, beyond the existing standard tests which have proven to be of very limited usefulness, as it has already been pointed out. As such, two instruments have been developed and are currently under validation: a) *The Moral Drawing* (Manzanero & González, 2013) and b) *the Instrument for Evaluating Capabilities or CAPALIST* (Contreras et al, 2015; Silva, 2013). The latter considers a number of capabilities to bear in mind when assessing the testimony given by minors:

- a) Cognitive.
  - a. Space.- Where? Are they capable of locating themselves in the present space?
  - b. Time. - When? Can they distinguish between different moments?
    - i. Present.- Are they capable of identifying the day/month/year of the moment of the interview?
    - ii. Past.- Are they capable of identifying the day/month/year of the events reported or another event in the recent past?
  - c. Descriptions.- Who? What? How?
    - i. People.- Are they capable of distinguishing between people they know and strangers?
    - ii. Places.- Are they capable of describing the place where they are?
    - iii. Things.- Are they capable of identifying certain animate or inanimate objects?
    - iv. Chains of actions.- Are they capable of describing a series of actions adequately?
  - d. Quantity.- How many? Are they capable of distinguishing between many and a few?
  - e. Action consequences. Can they describe the consequences of a certain action?
- b) Communication.
  - a. Verbal Language
    - i. Oral Expression
    - ii. Oral Comprehension

- b. Non Verbal Language
  - i. Expressivity
- c) Social Interaction
  - a. Empathy (They recognize their own feelings, acknowledge their feelings and those of others, and finally they acknowledge their own feelings, those of others and they identify with the latter.)
  - b. Assertiveness (the person is assertive, passive or aggressive)
  - c. Extraversion
  - d. Acquiescence (referring to the tendency to answer yes or show conformity)
  - e. Social desirability (the tendency to give answers that are considered socially acceptable)
- d) Identifying Mental States / Emotions
  - a. Their own
  - b. Others'
- e) Moral Capacity
  - a. Distinguish between good and bad, truth and lies
- f) Capacity for representation
  - a. Distinguishing reality/fantasy
  - b. Capacity for imagination
  - c. Reproducing scenes
  - d. Reproducing conversations
  - e. Assigning roles (I/you/he)

In these cases, the personnel specialized in conducting interviews with minors must answer all of these questions in order to establish the starting point for the proper investigation of facts that may be characteristic of a crime. This starting point will not only guide how the questions are asked in the examination, but also later it will serve to evaluate the testimony provided by the child.

However, this is not the only thing to consider. In the case of the testimony and especially with very young children one must take into account the following, among other variables: the number of times they have given an account of the facts, the time elapsed between the occurrence of the events and the moment of the interview, the interviewer characteristics and the way of conducting the interview. It is equally important to evaluate the influence that may have arisen from listening to their reference group (parents, teachers, etc.) and the interpretation of the story in relation to their own beliefs.

In short, we can see that there are multiple factors that can affect the testimony, so in this review we will address only two of the basic psychological processes, the development of the memory and language processes in the infant stage.

#### PROMINENT ROLE OF MEMORY AND LANGUAGE IN THE TESTIMONY

Memory and language play an important role in the testimony, so we are going to focus on developing the following issues in relation to statements of children between 3 and 6 years of age:

- ✓ What are the characteristics of their memory processes?
- ✓ What is the evolutionary development of language?



- ✓ What is the relationship between memory and language at this age?
  - ✓ What is the reliability and validity of their memories?
- In the following points, all of these issues will be addressed in relation to the testimony.

### **Memory processes in the statements of minors**

There are many types of memory (Baddeley, Eysenck & Anderson, 2010; Manzanero & Álvarez, 2015). Here we are primarily interested in obtaining a deeper understanding of autobiographical memories. This is a special type of episodic memory, since the task required of witnesses and victims is to retell an event they have experienced. Anyway, when talking about memory we refer to the ability to record, store, process and, subsequently, retrieve information. Precisely because of the ability of our mind to develop the information obtained through our sensory system, we must highlight the vulnerability of memory to be altered from both an internal and external perspective of the individual. So, in the case of minors in general, and even more so in those aged between 3 and 6, it is important to note the suggestibility to which they may be victims. Various investigations on child suggestibility (Ceci, Ross & Toglia, 1987; Hritz et al, 2015) indicate the existence of several factors that increase suggestibility in children, among which are: their age, the distance in time between the event experienced and the moment when the child is being asked about it, the type of questions used and the child's characteristics from both a cognitive and sociocultural point of view.

Beyond the theoretical point of view, the aforementioned Circular 3/2009 of the State Attorney General on the protection of victims and witnesses indicates the general guidelines in the interrogation of children. This circular includes factors such as those seen so far, but in this case applied to a more practical and real context: the courtroom. Among the aforementioned guidelines, delays in the proceedings in which the minors are involved are taken into account, indicating that this factor is "one of the primary stress-inducing agents in the child witness, the delay between the events and the moment of the testimony" (p. 53). Also indicated are the characteristics of interviews highlighting the need to instil confidence, to use language appropriate to their level of understanding as well as the type of questions that are asked. In these questions free recall must be facilitated and suggestion avoided, noting on this latter issue that "the degree of suggestion a question may have depends not only on its grammatical and semantic structure but also on the tone and authority of the interrogator" (p. 55).

Another point to highlight, in relation to the memory processes in the statements of minors, is what is known as infantile amnesia, which is the inability to remember events from the first five years of life. Regarding this point there are several different areas of theory that explain this phenomenon. On one hand there is the inaccessibility, according to which the information is found but cannot be accessed due to contextual changes, understood as the context changes produced over time, due

both to changes in our environment and to changes in our own life cycle. Infantile amnesia could be linked in part to changes in the environmental, cognitive and perhaps emotional context (Anderson, 2010). The second area of theory that explains this phenomenon refers to the specific neurological immaturity of preschool children (Manzanero & Álvarez, 2015).

Moreover, despite setting this age limit there are also other points of view in which the relationship of the consistency of these autobiographical memories stems from the relationship between consolidation of the child's cognitive self, the sociocultural environment surrounding them as well as the appearance and use of language, as indicated in theories developed by Nelson and Fivush (2004) or Howe and Courage (1997), which will see in the next point.

In any case, childhood memories mainly stem from the development of information through different sources (photographs, stories of family members, etc.), thus diverting from the actual experience of these events and becoming fabricated or constructed memories.

### **Language development**

The comprehensive and detailed study of language development and its features exceed the scope of this article. However, it is easy to imagine the important role that language plays in the psychology of testimony. Throughout its development, the language ability of a child aged between three and six years old will either allow or limit both the understanding of the questions asked and the ability to describe and indicate the answers in relation to the events experienced.

"Language is an essential element for human thought and it provides unexpected possibilities. It is essential in referring to the past or the future, in considering hypotheses or conditional situations, but also without it communication would be extremely limited and laborious" (Delval, 2008, p. 262).

One of the issues that concerns us, within the scope of this article, is whether language development precedes conceptual development or whether in fact the opposite occurs. Several studies have explored this relationship. The starting point and classic *par excellence* (Piaget, 1990) stated that conceptual development occurred first, and after that came language development. However, this classical conception has had as many followers as it has detractors, such as for example Chomsky's linguistics (Chomsky, 1987), which contrary to the Piagetian line of thought emphasizes the nativist and creative role of language development.

This area of study, which aims to determine the relationship between language development and the development of cognitive abilities (like children's theories of mind), authors such as Bermúdez-Jaimes and Sastre-Gómez (2010) draw from studies conducted by Gopnik and Melzoff (1999) among others, which indicate "the existence of a bidirectional relationship between language development and cognitive development and suggest that these skills may be important for understanding false belief" (p. 852). These skills indicated by Gopnik and



Melzoff refer to the construct of social cognition which refers to the individual's ability to put him- or herself in the position of another person in various aspects, including the epistemic, understood as the ability of the human being to understand the knowledge of another. Moll and Meltzoff (2011) indicate three different levels of adoption of perspective, which go from the simplicity (unique to humans) of sharing attention with the other to the complexity of the recursive mental inference known as third order or third level intentionality and which refers to the Theory of Mind (Premack & Woodruff, 1978; Wimmer & Perner, 1983). However, the empirical results of this research indicate that "the hypothesis that holds that the development of comprehension of children's theories of mind is subsidiary to semantic language development in children between 3 and 4 years of age (...) in the sense of the primacy of linguistic development over socio-cognitive development" (Bermúdez-Jaimes & Sastre-Gómez, 2010, p. 859).

Therefore, despite the existence of different theoretical aspects in relation to conceptual and linguistic development, a clear relationship between the development of the theory of mind and language development is established, and around approximately four years of age there is an important conceptual change in the child which develops alongside their language development (Gómez, 2007).

Now, everything stated so far indicates that in addition to the important role of language development in children between 3 and 6 years of age, both in relation to their development phase and their personal, family and environment characteristics, one must take into account their ability not only to understand their own experiential perspective, but also to understand different perspectives to their own, in other words, it is necessary to understand the development of intentionality in the child.

### ***The relationship between memory and language***

According to the theory of Social and Cultural Development by Nelson and Fivush (2004), autobiographical memory varies greatly from one individual to another. The memory you have of yourself is not isolated, but instead is immersed in a social culture, in which the contents of these memories are valued and shared. To demonstrate this point of view, the authors point out that their theory is based on three distinct arguments: a) autobiographical memory appears gradually in the preschool years; b) language is a fundamental socio-cultural tool in the development of autobiographical memory; c) there are individual cultural and gender differences throughout the development which must be checked.

Despite various studies on evolutionary development in children in the first five years of life, there is no irrefutable proof to determine the importance of language in the consolidation of memories. However, various studies such as those mentioned above as well as those carried out by Wang (2013) have indicated that autobiographical memory varies from one culture to another. In her research, Wang finds notable differences between cultures (the samples were from Western and Eastern

cultures) and she points out, among other components that determine and influence the formation of these autobiographical memories, how the speech of parents toward their children is copied as well as how children listen to their parents. Although there is no specific test to determine that language is essential for autobiographical memory, there is clear evidence that it is an important contribution. As Nelson (2014, p.17) points out, "episodic memories (ones that make up autobiographical memory) appear to exist as fragments retained from an experience in early childhood, but they are usually not retained as complete events or for large periods of time until after three years of age. These timescales suggest that language acquisition may be an important contribution to the establishment of autobiographical memory; but if so, how does it happen and when?"

In the different contributions of the aforementioned writer, it is noted that despite the existence of a large body of research on language acquisition, it has always been carried out in isolation without interrelating this development with various developmental milestones throughout this first period of childhood.

### ***Children as witnesses: The reliability and validity of memories in children of this age***

Addressing the issue of the validity and reliability of childhood memories means talking about the credibility of child testimony. Throughout history the child witness has been categorized in different ways, being essentially labelled as unreliable, even more so if there is a lack of other evidence to support the facts related by the minors. From the 1980s and 1990s this view changed, going to the opposite pole, in certain cases child testimony is even seen as more credible than the testimony of adults (Manzanero, 2010). However, at present this credibility is questioned, especially in cases where the child is the victim of a crime against sexual freedom and integrity, in which the analysis and assessment of the credibility of the child's testimony is the main evidence to refute the presumption of innocence of an accused, since it is difficult to diagnose sexual abuse from clinical indicators (Scott, Manzanero, Muñoz, & Köhnken, 2014). *The incriminating statement of a minor, even one affected by mental retardation, is perfectly suited to be assessed by the judges and, where appropriate, to rebut the presumption of innocence of the person who is incriminated therein.* (STS No. 175/2008 of 14 May).

For the assessment of the credibility of the child, the court requests an expert report on the credibility or veracity of the testimony such that the circular 3/2009 states in relation to the assessment of the child witness "The expert opinion on the credibility of the statement of a minor, contrasting the child's statements with empirical data produced by this science, can help the Court to establish whether or not there are elements to doubt their reliability" (STSS No. 715/2003 of May 16 and others). However due to the characteristics surrounding the testimony of a minor, the aforementioned Circular anticipates that the findings will not pertain to the exact sciences, but rather they will be specific to the testimony quality "The findings of these psychological reports of technical assessment of the



*testimony of a minor and analysis of the veracity of the statement can never achieve absolute precision. Declarations such as that the story is "very probably credible" make up "the top category of all possible outcomes, since it is not permitted to establish scientifically, of course, a statement in terms of mathematical accuracy, but only an orderly qualitative assessment (vid. STS No. 1769/2001 of October 5).*

Now, after raising the judicial point of view on the credibility of the testimony of a minor of a very young age, we must evaluate the instruments used to date in psychology for producing reports on the credibility of testimony.

At present, the technique most commonly used in the Spanish forensic context to assess the credibility of the testimony of children that are the alleged victims of sexual abuse is the Statement Validity Assessment system (SVA; Steller & Köhnken, 1989; Raskin & Esplín, 1991). This technique consists of three main elements: an interview with the child aimed at obtaining as comprehensive and accurate a testimony as possible; analysis of the child's account according to the Criteria-Based Content Analysis (CBCA); and implementation of the Validity Checklist that weights the external factors (for a current review, see Köhnken et al., 2015).

However, this method is not without its critics (Manzanero & Muñoz, 2011), often supported by malpractice in its application, as well as by the weaknesses of the method itself. The aforementioned criticisms include the lack of scientific validity of this method based on the content of the testimonies of victims or witnesses.

An alternative proposal to the SVA system is the evaluation of the testimony from a general perspective. An example is the holistic protocol for the evaluation of the testimony HELPT; (Manzanero & González, 2013, 2015). The HELPT protocol is based on the examination of the case file analytically and controlling for the potential biases that may arise in carrying out this task, to develop specific hypotheses subsequently about the case in question and the preparation of the later interrogation (Scott & Manzanero, 2015).

## CONCLUSIONS

This article has presented the current state of research on the credibility of testimony, which attempts to provide an analysis protocol from a more holistic perspective, such as the aforementioned HELPT, extracting the maximum unbiased information, and thus to begin with different hypotheses and assess the possible factors of influence. Nevertheless, it is still necessary to advance in this research, so that the result of the forensic practice of evaluation of the testimony obtains what Rassin (1999) asserted: For a judicial system to function properly, it should not tolerate more than 0.4% of false positives resulting in an innocent person being found guilty.

Therefore, despite all the work that remains to be done, new lines of research have been launched, such as the development of the CAPALIST instrument (Contreras et al., 2015). Research with this instrument uses as a source the analysis of the

capabilities of the victim at the time the charges were brought. This way one can provide the investigation and the subsequent collection of the account of the criminal acts with an appropriate baseline which supports the forensic psychologist responsible for the analysis of the credibility of the testimony. Also, inappropriate generalizations can be avoided about the child's ability to testify on the particular events suffered by the victim of a crime. Contreras et al (2015) applied the questionnaire in actual cases of sexual abuse victims with intellectual disability and the results showed high inter-rater agreement. Therefore, CAPALIST could be useful in assessing the ability to testify of victims with intellectual disability. In parallel, currently its applicability is being analysed in children aged between 3 and 5 years old, since both groups, highly vulnerable, are sometimes distanced from the process due to the erroneous belief that their accounts may be unreliable or because it is assumed that the minors lack sufficient capabilities to give an account with significant details for the investigation.

From this review, we have found that different studies indicate the relationship that exists between language and memory in children of a very young age, however, this relationship is not exclusive but rather it is interrelated with other capabilities (as can be seen in the capabilities evaluated in the CAPALIST questionnaire, mentioned above in this article). Hence the need for research investigations in order to equip the professionals with valid tools to assess these capabilities as broadly and accurately as possible, assumed necessary for the collection of testimony on events that are of a criminal nature. The investigations mentioned are examples that demonstrate the feasibility of the analysis of these capabilities prior to investigating the facts and serve as a reliable method for assessing the credibility of the testimony (Contreras et al, 2015; Manzanero & González, 2013, 2015; Scott & Manzanero, 2015).

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# CONCEPTUAL AND METHODOLOGICAL MISTAKES IN PSYCHOLOGY AND HEALTH: A CASE STUDY ON THE USE AND ABUSE OF STRUCTURAL EQUATION MODELLING

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*Se analiza un trabajo de investigación que se justificó en la teoría del desarrollo psicopatológico, los factores protectores, la autorregulación, la resiliencia y la calidad de vida en una muestra de personas que vivían con diabetes tipo 2 e hipertensión; para el análisis de los datos se utilizó el modelamiento con ecuaciones estructurales (MEE). Aun cuando los autores concluyen sobre la pertinencia de los datos a la teoría probada, incurren en errores lógicos, conceptuales, metodológicos y de interpretación que, tomados en conjunto, evidencian una flagrante ruptura teoría-datos.*

**Palabras clave:** Psicología, Salud, Teoría del desarrollo, Ecuaciones estructurales, Teoría, Datos.

*In this article, a research paper is analysed, which was justified based on the theory of developmental psychopathology, the protective factors, self-regulation, resilience, and quality of life among individuals who lived with type 2 diabetes and hypertension. Structural equation modelling (SEM) was used for the data analysis. Although the authors conclude that the data are adequate to the theory tested, they commit errors of logic, concept, methodology and interpretation which, taken together, demonstrate a flagrant rupture between the theory and the data.*

**Key words:** Psychology, Health, Development theory, Structural equation, Theory, Data.

Christie-Davies' Theorem: If your facts are wrong but your logic is perfect, then your conclusions are inevitably false. Therefore, by making mistakes in your logic, you have at least a random chance of coming to a correct conclusion. (Bloch, 1992; p.75)<sup>1</sup>

**L** psychology is a discipline in the process of consolidation as a scientific enterprise that not only lacks a unique and consensual object of study, but it also lacks a single and consensual theory with which to represent the psychological conceptually at the basic level; i.e., one that includes phenomena such as attending, perceiving, remembering, thinking, reasoning, etc. What is needed is a theory whose purpose is to ensure systematic knowledge of these

or other phenomena, based on an observational and experimental methodology (Ribes, 2009a). The construction of other theoretical approaches will depend on the solid construction of this theory. Ribes (2005) has called this the intersection. Two of these stand out, on the phenomena of development and personality. At another level we include the theoretical models that are made with applicative purposes for various social problems, i.e., education (Ibáñez & Ribes, 2001), work or organizations (Rodríguez & Díaz-González, 2000) and health (Piña & Sánchez-Sosa, 2007; Ribes, 1990a), primarily.

As a starting point, we can say that the importance of a theory or a theoretical model lies in that it is easier to pave the way when analysing and interpreting the data produced by research... with *theoretical sense* (Figure 1). To do this, however, is a *sine qua non* that both are properly articulated conceptually, meaning that neither one nor the other should be considered as simple containers to which, due to the interest and/or short-term needs of the authors, concepts are added that are not part of the original structure.

This latter point is crucial because, surprisingly often and in a more pronounced way among those conducting applied research and using structural equation modelling (hereinafter SEM), the conceptual articulation often goes to the background. Thus, it is enough for someone insightful to justify a study based on SEM, for it to acquire *ipso facto* and by a kind of decree the character of "scientific"; consequently the findings acquire their supposed value to "explain" or "predict" something.<sup>2</sup> What is interesting is that a careful analysis will surely reveal that many of the investigations that are justified using SEM share the same original sin, which for obvious reasons does not make them worthy of the distinction of being scientific. This original sin is summarized as follows:

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<sup>1</sup> We advise the reader that, for the case study here analysed, the accuracy of the data is not in question; we do, however, question: a) their appropriate and correct statistical treatment, and b) the subsequent interpretation that is made of these data

<sup>2</sup> Moreover, the theoretical models for the purposes of the application of knowledge do not "explain", unlike general theories of process (psychological theories) which however do. The theoretical models in the field of health, because of the concepts they use (i.e., personality, motives, competencies, emotions, etc.) serve to "predict" how likely it is that a person will behave in a certain way in one circumstance and not in another (Piña, 2015a)



1. When an author starts with a logical error, surely
2. They will make another of a conceptual nature, giving way
3. To a methodological one, culminating
4. In one of interpretation.

A consecutive chain of errors that allows us to conclude that many of the investigations that rely on SEM are hermeneutic efforts which, technically speaking, favour what Ruiz, Pardo and San Martín (2010) characterized as *spurious relationships*: a lack of a causal relationship between two variables, including one that it is assumed will exist eventually with respect to a third variable.

Based on these considerations, the objective pursued in this work was to analyse a research report that was supported by SEM, which according to the authors (Gaxiola, Pérez & González, 2013) was justified in the theory of psychopathological development by Cicchetti (1990) and in the *sui generis* added concepts such as protective factors, self-regulation, resilience and quality of life in a sample of people living with type 2 diabetes and hypertension. We demonstrate that, the authors, by engaging in logical, conceptual, methodological and interpretative errors of the findings, are victims of excessive investigative euphoria which calls into question the overhyped relationship between the theory and the data.

#### THE THEORY OF PSYCHOPATHOLOGICAL DEVELOPMENT AND THE CONCEPTUAL ADDITIONS

Gaxiola et al (2013) published a research report that was justified in the theory of psychopathological development and the four aforementioned concepts, the participants being a group of people living with type 2 diabetes and hypertension. In principle, and due to its subsequent importance, we shall quote

extensively the authors' observations regarding some epidemiological characteristics of both diseases: [...] so, both conditions can occur in the same person. Hypertension is a condition that is growing and is a cause of disability in the Mexican population; among its consequences we can mention, for example, the development of other vascular diseases such as brain and vascular disease, coronary heart disease and sudden death [...] *In addition to the physical consequences of chronic degenerative diseases such as diabetes mellitus and hypertension, there is a decrease in the quality of life of those who suffer from them*<sup>3</sup> (Gaxiola et al, 2013; p. 108).

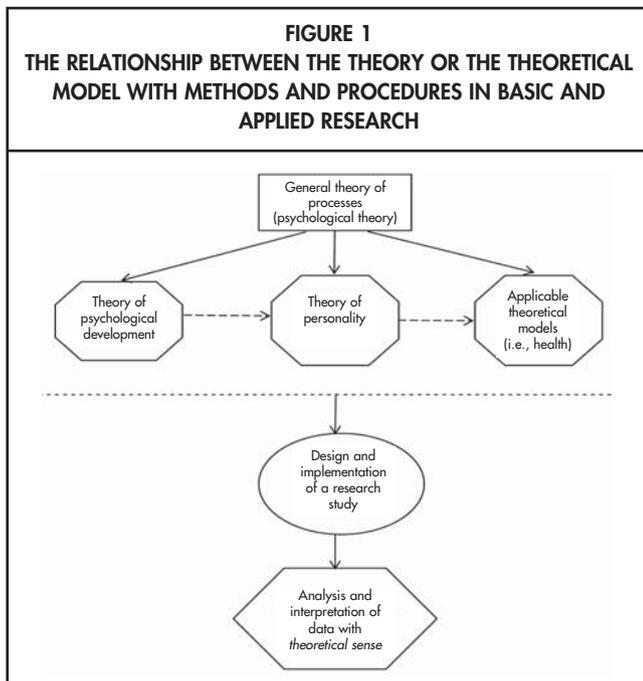
Then, on page 109, in the section entitled *Theoretical Framework: theory of psychopathological development*, they note the following: *psychopathological development theory emphasizes human development and its processes of adaptation and maladjustment [...] According to this theory, the interaction between the contextual, biological, psychological and social aspects affect normal and pathological development throughout life, resulting in some processes of adaptation and others of maladjustment [...]*<sup>4</sup> Thus, the theory of psychopathological development is an *ecological theory* that can be used as a framework when studying the consequences of various diseases in people's quality of life [...] Vitality, pain and disability are all influenced by personal experiences and by the expectations of each person [...] In addition, considering that social support can affect the quality of life, it is possible that two people with the same health status have a different perception of it (Gaxiola et al, 2013; p. 109).

Abruptly and, as we shall see below, without any connection to the contents of the two quotations, in the section entitled *Protective factors and risk associated with quality of life* (pp. 109-110), the authors described:

1. The *protective factors*, which they defined as the conditions or environments capable of promoting the development of individuals and reducing the effects of unfavourable circumstances.
2. *Self-regulation*, defined as the set of processes that serve to continuously monitor progress towards a goal, checking the results and redirecting the effective efforts, as well as regulating the emotions.
3. *Resilience*, defined as a characteristic of human beings that makes us able to recover when faced with threatening situations.
4. These three factors, the authors say, contribute to promoting *quality of life*; this comprises the dimensions of perceived health and the social, individual and environmental circumstances surrounding people, emphasising their *degree of satisfaction*.

After this brief description of the *theory of psychopathological development* and the first three factors, in the method section the authors briefly describe the participants (n = 170) and the battery of instruments used, which included:

1. *The World Health Organization's Brief Scale on Quality of Life* (WHO, 1998), consisting of 26 questions with five response options on a Likert-type scale ranging from 1 (dissatisfied) to 5 (very satisfied). Four areas are considered,



<sup>3</sup> The results highlighted in bold type have not been observed.

<sup>4</sup> The results highlighted in bold type have not been observed.



- namely, physical health, psychological health, social relationships and environment.
2. *Resilience* (Gaxiola, Frías, Hurtado, Salcido & Figueroa, 2011), which has 24 questions with five response options on a Likert scale ranging from 1 (none) to 5 (totally). Seven dimensions were considered which included: positive attitude, sense of humour, perseverance, religiosity, self-efficacy, optimism and achievement orientation:
  3. *Protective Factors*,<sup>5</sup> including 23 questions with five response options on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Two factors were considered: social support and neighbourhood cohesion.
  4. *Self-regulation* (Gioia, Iquith, Retzlaff & Espy, 2002), consisting of 30 questions with seven Likert-type response options, ranging from 1 (never) to 7 (occasionally). The areas that were measured were: inhibition and emotional control (emotional self-regulation), on the one hand, and flexibility and self-monitoring (behavioural self-regulation), on the other.

We mention the different factors, dimensions or areas that make up each instrument, because although a detailed analysis was expected of each one, regarding its influence on quality of life and the patients' condition in relation to the diagnosed disease, what the authors did was to extract the mean and total standard deviations of the instruments, i.e., they added the scores of the different subscales. Therefore, because the independent scoring of each subscale was omitted, we will demonstrate later why a methodological error was made with profound implications in the analysis and interpretation of the data (see Underwood, 1966). The total scores in question were as follows:

1. *Quality of life* (minimum and maximum possible scores ranging from 1 to 5 for each question):  $M = 3.35$ ;  $SD = 0.45$ . Therefore, it could be argued that the participants "enjoyed" a good perception of their quality of life physically, psychologically and in their social and environmental relationships.
2. *Resilience* (minimum and maximum possible scores ranging from 1 to 5 for each question):  $M = 3.99$ ;  $SD = 0.63$ . Therefore, it could be confirmed that the participants were resilient, i.e., they had an excellent positive attitude, a strong sense of humour, were perseverant, religious, self-efficient, optimistic and had appropriate goal orientation - all of these phenomena, whether psychological or not, form part of the instrument that supposedly measures resilience.
3. *Self-regulation* (minimum and maximum possible scores ranging from 1 to 7 for each question):  $M = 1.71$ ;  $SD = 1.23$ . Therefore, one could argue that the participants did not have problems with emotional self-regulation (as they were uninhibited and had good emotional control) or behavioural

self-regulation (as they were flexible and they self-monitored permanently).

4. *Protective factors* (minimum and maximum possible scores ranging from 1 to 5 for each question):  $M = 4.08$ ;  $SD = 0.56$ . Therefore, it could be confirmed that the participants were "protected" by having social support networks and neighbourhood cohesion.

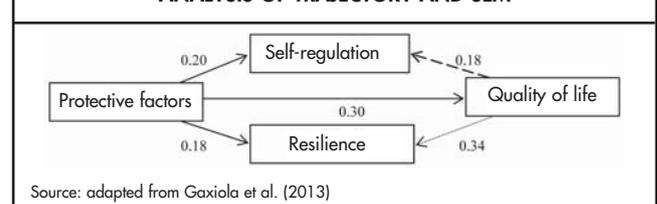
Considering these total scores, the authors proceeded to an analysis of the trajectory in SEM, the results of which were as follows:  $\chi^2 = 72.8$ ;  $gl. = 9$ ;  $p = 0.50$ ;  $BBNFI = 0.99$ ;  $BBNNFI = 1.0$ ;  $CFI = 0.98$ ;  $RMSEA = 0.00$ .<sup>6</sup> For the reader that is not aware, except for the value of  $\chi^2$  (which must be  $p > 0.05$ ), the remaining goodness of fit indicators are very close to statistical "perfection", although they are also very close to the theoretical-conceptual and methodological "imperfections". Based on these data, we proceed to examine why the authors, when starting from a spurious theory-data relationship, confused covariation with a causal relationship (Figure 2), and why their conclusions are incorrect and devoid of any support when interpreting the relationships: a) between variables; b) how they eventually affect the quality of life, depending on whether they are talking about participants diagnosed with diabetes or hypertension, and c) the consequences of both diseases on the quality of life, as established in the study objective.

#### THE FIRST MOMENT: LOGICAL AND CONCEPTUAL ERRORS

Ryle (1947/1967) indicates that a logical error consists of ensuring that a certain phenomenon exists and that it can be represented by a concept, which is supposed to be able to be related to other concepts. We will quote the author at length:

To achieve certain purposes, it is necessary to determine the logical connections of certain concepts whose use we know well [...] To determine the logical geography of concepts is to show the logic of the propositions that contain them, that is, to show which propositions are congruent or incongruent with them, which follow from them and which are inferred. The logical type or category to which a concept belongs is the set of modes or ways in which it can be used with theoretical legitimacy (Ryle, 1949/1967, pp.13-14).

FIGURE 2  
ANALYSIS OF TRAJECTORY AND SEM



<sup>5</sup>On which no reference is provided.

<sup>6</sup>BBNFI (Bentler-Bonett Normed Fit Index; also known as NFI or Normed Fit Index); BBNNFI (Bentler-Bonett Non-Normed Fit Index, also known as NNFI or Non-Normed Fit Index); CFI (Corrected Fit Index); RMSEA (Root Mean Square Error of Approximation

<sup>7</sup>The suggested parameters for a good fit of the data to the "proven" theory include: a value of  $\chi^2$   $p > 0.05$  (absolute adjustment); BBNFI, BBNNFI and CFI 0.95 (comparative fit) and RMSEA 0.08 (reading Rodríguez, González and Ruiz, 2009 is recommended; Ruiz et al., 2010). As an additional note, there are other indicators of goodness of fit that the authors did not consider in their research work, such as the ratio between  $\chi^2$  and the degrees of freedom (which must be  $< 3$ ), the goodness of fit index (GFI) and the corrected goodness of fit index (CGFI).



The logical geography of concepts presupposes that they have limits, which is why they cannot be surpassed, at the risk of making a confused use of them and ending up overlapping them with other concepts (Moore, 2001). In psychology and health, for example, motives, emotions, feelings and personality mean different things, so one would expect that no one would define the first based on the rest; like saying that a person's motivational states are highly "emotional" or that there is a motivating personality. The issue that we are emphasising is that, in starting from a logical error, it is common for authors to define the central concepts wrong in their investigations, with all that this implies.

In the present case, what ends up happening is that the relevance and proper use of concepts is replaced with a maxim that has acquired the hues of absolute truth in SEM, and which is usually summarized in articles as follows: the goodness of fit indicators show that the theoretical model fits the data!<sup>8</sup> To sum up, regardless of the logical and conceptual problems, if the goodness of fit indicators are good, then the "theory" or "theoretical model" is good, as it is ensured that one or the other finds correspondence with the data.

### THE SECOND MOMENT: THE THEORY OF PSYCHOPATHOLOGICAL DEVELOPMENT AND ITS CENTRAL CONCEPTS

You will recall that earlier, referring to the "theory" that presumably the authors used as a base, they mentioned that of psychopathological development by Cicchetti (2006), which they ensured is an *ecological theory*. Something that the authors should have had clear from the beginning is that not just anything is theory, or theoretical "say", nor can it be. A theory is not an arbitrary aggregate of concepts, as if it were some kind of container to which one can keep adding one or more other concepts indiscriminately. In addition, we consider it appropriate to warn the authors that it is always necessary to distinguish between different types of theories and theoretical models, as well as the goals they pursue.

A psychological theory, for example, that of Skinner (1953/1970), falls within the general framework of *process theories*; its purpose is to *describe* and *explain* how and why people behave in daily life, describing the system of relations between different types of events (Ribes & López, 1985; Roca, 2013). On this kind of theory, Ribes indicates that:

The theoretical process consists of how to infer from situations of particular fact to other situations of particular fact, how to explain situations of particular fact referring them to other factual situations (Ribes, 2009b; p.6).

In this context, the scientific knowledge gained in and by the practice of research would give *body*, *sustenance* and *empirical validity* to a theory, in order to be able to specify how the

relationship between a set of events (for example, the environment) and another set of events (e.g., behavioural) is to be interpreted. However we mentioned that there are other theoretical approaches such as those of development or personality, which unlike scientific theory *do not deal with processes*, but with the *results* of the processes. The results in the two theories are different: in that of development, the emphasis is on the emergence of transitions of behaviour in ecological and cultural contexts, that is, new forms of behavioural organization –i.e., competencies (Ribes, 1996); in that of personality, the emphasis is placed on the idiosyncratic, unique and singular nature with which each person, acting individually, comes into contact with situations in which no criteria are prescribed about what or how to respond –i.e., the tendency toward risk (Ribes, 1990b).

We mention both theories, because both that of development and that of personality not only have different purposes, but they can also be classified as technology-oriented theories. By definition, a technological type theory is justified with the deliberate purpose of *predicting* how likely it is that a person will develop with regards to competencies in the continuum of life, or whether, given certain personality characteristics, they will remain healthy or unhealthy. In this logic, the *theory of psychopathological development* –which is the product of many and varied issues and problems, that are represented by many different concepts– is unlikely to favour the conceptual articulation. Thus, without this, there is unlikely to be discursive consistency and, as a natural consequence, one or more authors take as their own the practice of incorporating, arbitrarily, concepts with different origin and content.<sup>9</sup>

Therefore, appealing to a theory such as *psychopathological development*, without explaining the contextual, biological, psychological and social factors that affect normal and pathological development throughout life and how they are defined, helps to understand why, in the authors' case, the best option at hand was to incorporate concepts such as protective factors, self-regulation, resilience and quality of life. As Lemos-Giráldez (2003) informs us, the evolutionary perspective that underlies the aforementioned theory presupposes that, in the continuum of development, multiple systems are gradually integrated in children and adolescents, including those of cognitive, emotional, social and biological types, that will in their constant interaction enable us to identify which mechanisms of vulnerability or protection are involved in both the development itself and the appearance of a specific "psychological" disorder.

Then, and in relation to the research analysed here, a series of first concerns that stand out on the *theory of psychopathological development* relate to how, to the knowledge and understanding Gaxiola et al. (2013):

<sup>8</sup>The results highlighted in bold type have not been observed.

<sup>9</sup>*Psychopathological development theory* by Cicchetti, is a theory about (adaptive or otherwise, pathological or otherwise) development, so it has more or less precise limits. That is, the theory arose in order to understand why children were at risk of developing schizophrenia, for which a focused development approach was required (Cicchetti, 1990). Also as Causadias and Carlson (2014) inform us, this theory picked up in its origin elements of psychoanalysis, genetic embryology, epidemiology, neuroscience, experimental psychology, developmental theories of Werner and Piaget, as well as attachment theory by Bowlby and Ainsworth. It is, in short, what we will call a *hybrid theory*.



1. It can be used with the declared aim of *assessing the relationship between social protective factors, self-regulation and resilience with the quality of life of patients with diabetes mellitus and hypertension* (Gaxiola et al objective, 2013; p. 110). First, the theory was formulated in order to study the origins and development of patterns of maladjustment regardless of the age of onset or the causes (Stroufe & Rutter, 1984), and not to study the relationship between a variety of factors, psychological or otherwise, regarding the care, maintenance, loss or recovery of health. Therefore, one cannot extrapolate a theory with a definite purpose to study certain types of relationships between certain variables and their potential effects on health and disease.
2. Also an explanation was deliberately omitted about the role the different factors play in the theory, such as the protective, self-regulation and resilience factors. These, moreover, we would like to make it clear to the authors of the study, are not even part of their conceptual framework, which means that they were added by the authors themselves outside of any logical or theoretical consideration.
3. But perhaps it would have been interesting if they were to clarify how those factors relate to two chronic non-communicable diseases, diabetes and hypertension, and in turn how these relate to quality of life.

These are not idle concerns or questions because, we must remember, if the authors' objective was to evaluate the relationship between social protective factors, self-regulation and resilience, and the quality of life of patients suffering from these two diseases, the reader would at least be expected to find some link between the facts or concepts, quality of life and diabetes-hypertension.

### THE THIRD MOMENT: THE METHODOLOGICAL AND INTERPRETATION ERRORS

The problem is that the link mentioned at the end of the previous paragraph does not exist, at least theoretically, which is shown conclusively from this point on, when the results are summarized and *sui generis* interpretation of these made by the authors, who in the discussion section suggested the following; (we quote extensively because of its importance):

In the resulting model, the *protective factors*<sup>10</sup> of social support and neighbourhood cohesion predict the self-regulation of patients with chronic diseases such as diabetes mellitus and hypertension, which implies that this psycho-biological type variable can be modulated by environmental factors; in turn, *self-regulation* predicts *quality of life*, which is possibly because the people in the sample are able to assess and control their behaviour, they choose the most appropriate action in order to improve and maintain a favourable state of health and they develop habits that subsequently affect how they perceive themselves [...] *Quality of life* as measured by the perception of patients with diseases such as diabetes mellitus type II and hypertension regarding various aspects of their lives, including their

health, is predicted by the level of their *self-regulatory capacity* [...] (Gaxiola et al, 2013; p. 116).

Also, on page 109, when the authors describe the protective factors associated with quality of life, they refer us to a wide variety of conditions that can favour or hinder people's development, while reducing the effects of unfavourable circumstances; these include neighbourhood cohesion and social support. Paradoxically, although the hybrid *theory of psychopathological development* pays special attention to the development of children and adolescents, we ask: how can you justify an investigation into a *theory of psychopathological development* without including in the analysis characteristics of children and adolescents behaving as individuals? But besides the obvious absence of the "protective" factors of people acting individually, note that in the structural model of trajectories shown in Figure 2, the only variable that had a direct influence on quality of life was precisely that of the protective factors, accounting for 15% of the total variance ( $R^2 = 0.15$ ), a percentage that would certainly have been lower if it had considered the value of the adjusted  $R^2$ ; Minor sins? However, note that, in the previous quote, in the authors' logic self-regulation predicts quality of life, which of course is illogical and contradictory, since the direction of the arrow starts with quality of life and ends in self-regulation (long dash arrow highlighted in bold). In other words, quality of life predicts self-regulation, not vice versa, as the authors claim in the previous quote.

Straight away, and surprisingly, the authors add the following:

It was also found, as in other investigations [...] that the *protective factors predict*<sup>11</sup> *resilience* because, in their development, some people interact with the protective factors that allow them to construct and remain behaving in "adaptive niches" [...] and strengthen their willingness to resilience. This means that despite the existence of a condition, the interaction with protective factors enables the development of a number of tendencies that empower people with regards to the risks they face, in this case, those established due to suffering from type II diabetes and/or hypertension (Gaxiola et al, 2013; pp. 116-117).

If the protective factors constitute a variety of items that are available in the repertoire of a person due to their contact with objects, events and other people in the environment, in the logic of Gaxiola et al. (2013) the protective factors that they contemplated would be included in the ecological-social context, to the extent that it is guaranteed that both social support and neighbourhood cohesion "protected" people with diabetes and hypertension. But, as we just discussed, in the absence of the protective factors of the person acting individually, how can you explain the influence of development –defined as transitions in which new behavioural processes emerge from the previous ones– on the changes in the tendency to behave in one way or another in the continuum of life? If the authors justify a research study with a theory, that of *psychopathological development*, it is strange that the use of conceptual categories has been deliberately omitted in relation to development in the terms set out above. The theory in question was lost on the way, just like

<sup>10</sup> Highlights in italics and boldface our own.

<sup>11</sup> Highlights in bold have not been observed.



the characterization of the phenomenon of development. The most interesting thing about this latter point is that if *protective factors* predict *resilience*, by the fact that people in their *development* interact with protective factors that strengthen the willingness to resilience (previous quote), a reading on the subject of the concept of resilience, in which the first author appears (see Gaxiola et al, 2011), shows us that:

Resilience or adaptability is thus defined as the ability to display adaptive responses to risk conditions [...] which combines a set of personal attributes acquired through psychological development and from contact with protective factors available in the settings of the people at risk. *Resilience is an inference based on individual differences with regard to the stress response or adversity*<sup>12</sup> [...] for that reason, it is a latent order variable [...] which can be inferred from the observed indicators related to dispositional modes (Gaxiola et al, 2011; p.74).

The reader will notice that the same logic prevails in this quote and the previous one, namely that of ensuring that the development is there, as if it were the “sound board” of the protective factors that literally compel people to be resilient. Then, no categories are required for the phenomenon of the development of people acting individually, but quite simply those that are defined as protective factors and resilience are required. However, we now ask, from what and/or against what did the protective factors “protect” the people with hypertension and diabetes? Against the risks they face, those established by the fact of having one of these diseases? And what are these risks that they mention? Do they refer perhaps to the behaviours that correlate with each of these diseases, those known as behaviours associated with the disease? That is, following Ribes (1990a):

1. Do they refer to behaviours that are the effect of a biological disease?
2. Ones that are derived from therapeutics?
3. Or perhaps they are linked indirectly to the first?

It is not known to which of these behaviours they refer, because nowhere in their work did they attempt the task of minimally describing them. Yes, they do protect against risks that are there, just due to the fact of having one of these diseases! The picture is further complicated when the authors claim that quality of life also predicts resilience, as can be seen with the arrow highlighted with bold and continuous points. Just let us quote the authors extensively again, regarding this unusual finding:

[...] But in this study an inverse relationship was tested and found, i.e., that quality of life influences the development of resilience. *This can be justified because quality of life is a global construct that measures satisfaction with different aspects in the different areas of everyday life*, that is, you can be satisfied with specific aspects related to quality of life and this satisfaction is a protective factor that enables the development of resilience.<sup>13</sup> In other words, the increase in quality of life allows people to overcome the suffering they face more

easily, as supported by the results found. This is a novel relationship that requires further investigation (Gaxiola et al, 2013; p. 117).

Justifying that quality of life is a global construct is something like ensuring that psychology studies the psychological; a truism, no more, no less. It is absurd to speak of the existence of global constructs, as if it were possible to differentiate them from other constructs that are not global and that, therefore, we would say are non-global, particular or specific. That quality of life is a multidimensional concept is not the same as saying that it is global simply because it involves different dimensions in its content, ergo, the biological, psychological and social dimensions. In addition, quality of life is the *functional result of the combined set of biological, socioeconomic and psychological conditions that people experience at a particular moment on the interaction continuum* (Carpio, Pacheco, Flores & Canales, 2000; p.4), so, as much as it results in different conditions, quality of life, which comprises the perception of health and the social, individual and environmental circumstances surrounding people, cannot be predictive of resilience. If this is a concept that strictly speaking does not belong to the phenomenology of the psychological and is also incorrectly defined (Piña, 2015b), then, we propose a series of basic questions for the authors: which of the seven dimensions contained in the instrument used was associated causally with the quality of life and with the health status of the participants? Was it religion? Perseverance? Self-efficacy? Sense of humour? Optimism? Positive attitude? Or goal orientation? Or maybe two or more of them interacted?

Allow us to quote the authors:

[...] the research did not ask how many participants had concomitant diseases related to the diabetes and hypertension they suffered from. Nor was the diversity evaluated of the pharmacological or other treatments they were receiving [...] Moreover, the relationships found between the variables were modest (although significant), so one must be cautious with their implications (Gaxiola et al, 2013; pp. 117-118).

Common sense and empirical evidence tell us that at the time the participants were evaluated:

1. Given the type of disease;
2. The time since diagnosis;
3. The time elapsed from the start and especially the type of treatment to which each participant had been exposed or was undergoing;
4. Their health condition, i.e., whether the disease was under control or had shown some clinical progression, among many other things ...

...makes the assumption untenable that they worked with a sample of 170 participants with homogeneous health, disease, psychological and socio-environmental characteristics. Indeed, any researcher who has conducted a study with patients that are diabetic hypertensive patients suffering from some form of cancer, gastrointestinal diseases, HIV infection, etc., will know that the evidence supports that there are significant variations among patients in the content of points 1, 2 and 3, such that it

<sup>12</sup> Highlights in bold have not been observed.

<sup>13</sup> Highlights in bold have not been observed.



is all but impossible to accept the assumption of “normality” in the set of characteristics mentioned in the final part of the previous paragraph (see Ballester, Gil, Gil-Juliá & Gómez, 2012; Caballero, Pérez, Herrera, Manrique & Sánchez-Sosa, 2012; García & Sánchez-Sosa, 2013; Garduño, Riveros & Sánchez-Sosa, 2010; Méndez, Mejía, Laborín & Piña, 2014).

### FINAL COMMENTS

In several countries around the world, analytical studies have been published on SEM, its advantages and disadvantages, in particular on the most common problems that often become visible in research reports (Kelloway, 1995; Ruiz et al, 2010; Tanaka, 1993): an absent or poor theoretical justification, conceptual shortcomings, errors of interpretation regarding causal relationships -when they are and when they are not, the value and the weight that must be assigned to the goodness of fit indicators, etc. Certainly, we only get the impression that these analytical studies have not reached, in general, the health psychologists in countries like ours; however, all research reports that are based on SEM should keep them in mind, as a rule and not as the exception.

Unfortunately psychology in Mexico has distinguished itself, at least over the last two decades, by a sort of scientist paraphernalia in which the statistical analysis of the latest generation (i.e., SEM) has gained primacy over issues of a theoretical and conceptual nature. The worrying thing is that this scientist paraphernalia has taken on unsuspected proportions, especially among those who use and abuse the statistical procedures (Piña, 2003), and in particular, as in the present case, SEM (Piña, 2015c). In the framework of the research study analysed, starting from a theory that fulfils a purpose and transferring it without any logical or conceptual consideration to predict a supposed relationship among various factors of quality of life -without any assessment of the health-sickness condition-, is quite simply unjustifiable. The *theory of psychopathological development*, having logical and conceptual boundaries as well as specific purposes, cannot replace, no matter whether various concepts are added, phenomena of a psychological nature that are essential in the field relating psychology to health: personality, motives, competencies, moods and behaviours associated with the disease, to name a few. Therefore, while psychologists remain committed, at least in our country, to:

- a) Confusing the psychological with whatever they have to hand;
- b) Justifying its study because they have a methodological support tool, SEM, and
- c) Carrying out analyses and producing different conclusions without foundations.

All that this will cause, as has happened with the author of this study, is a deep sense of *psychological helplessness* when observing how easy it is to popularize psychology and the psychological; of course, all in the name of science and SEM!

Finally, it should be stressed here that we are not denying either the relevance or the potential value of SEM in psychology and health, examples of whose correct use (although in our country less so), can be found in the specialised literature (i.e., González & Landero, 2008; González, Landero & Ruiz, 2008; Moral de la Rubia & Miaja, 2015). What is emphasized is that it is essential to respect the basic criteria for the use of SEM to be correct:

- 1) In the case of social (health) problems, one must have a relevant applicable theoretical model that has an articulated body of concepts that clearly identify the psychological processes, states and outcomes.
- 2) The extrapolations of the data find their reason for being in the theory and concepts, which means that the data and their interpretation cannot go beyond what the theoretical model and its conceptual categories “say”.
- 3) The measurement of the goodness of fit indicators can be tested with the saturated model and, on the recommendation of one of the reviewers, it is understood what a good fit to the data consists of. Otherwise what ends up happening, as in the study analysed, is that the purpose of a theory is confused and the central concepts misused, encouraging the language of the data to constitute the node and not a methodological support tool for research in the field of action.

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## Letter to the Editor



Dear Editor, Associate Directors, and members of the Editorial Board of *Psychologist Papers*:

In the latest issue of the journal *Papeles del Psicólogo [Psychologist Papers]* (June 2016), there is an opinion article on Positive Psychology with a title that, from the outset, seems offensive and unbecoming of a professional or academic journal ("*Mitos de la Psicología Positiva: Maniobras engañosas y pseudociencia*" ["*Myths of Positive Psychology: Deceptive manoeuvres and pseudoscience*"]). As collegiate psychologists and also members of the scientific and academic community, we wish to express our repulse of the repeated use of this professional platform to attack the reputation of a psychological movement, sponsored and promoted by colleagues (yours and ours), both nationally and internationally.

Leaving aside the intellectual weight of the criticisms, it seems entirely inappropriate that the professional journal of the Spanish Psychological Association should repeatedly allow articles that are loaded with deeply biased denigrating judgments from start to finish. In the latter case, this bias is evident from the very title of the article, and it continues to pour out opinions that are not backed by scientific data or arguments but by a hurtful animosity that causes at times surprise and at times, why not admit it, unintentional hilarity. Thus, previously-read arguments are repeated such as the one on how Positive Psychology speaks of "authentic trivialities" and is "scientific short change" in which "too much unfounded speculation, interpretative alchemy and linguistic hermetism" (sic) is observed. 136. It also represents nothing less than a "betrayal of virtue epistemology [sic], and a lack of professional honesty" (p.138), making it a "psychological frustration and social disillusionment" (p. 138) and, in short, turning its "affective narratology" (sic) into "repetitive knowledge, full of common sense, and unwritten philosophy from popular proverbs" (p.140). This is the intellectual tone of the article, an epigone of similar previous ones, the likes of which it is difficult to find in the professional or scientific journals that we know. We resist the urge to produce new written rebuttals which would result in continuing to bolster the meagre resumes of others.

We sign this letter as (current and past) presidents of the Spanish Society of Positive Psychology, joined unanimously by the Board of the Association, and attending to its statutes in Art. 3, Section 5, which indicate that one of the aims of the association is to "promote the good image of Positive Psychology and to ensure the ethical and appropriate application of the knowledge and applications derived from it."

We believe, and we hope you will agree, due to the appreciation you deserve from us personally and due to the prestige of our journal, that a disservice is being done to the profession –and to critical, constructive thinking, which should be based on scientific and respectful language– in continuing to promote the disparaging criticism of colleagues in our profession who try to use the best scientific and professional standards, as unquestioningly do all of you in producing and promoting your work.

Sincerely,

Carmelo Vázquez  
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 Complutense University of Madrid  
 Former President of the Spanish Society of Positive Psychology (SEPP)  
 Former President of the International Association of Positive Psychology (IPPA)

Marisa Salanova  
 Professor of Positive Organizational Psychology  
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 President of the Spanish Society of Positive Psychology (SEPP)

Board of the Spanish Society of Positive Psychology (SEPP)

