Behavioral analysis in forensic setting with the SAVE method

DOI: 10.46981/sfjhv5n1-003

Received on: December 21st, 2023
Accepted on: January 24th, 2024

Antonio Domínguez-Muñoz
Master's Degree in Nonverbal and Deceptive Behavior
Institution: Inspección Médica del INSS de Málaga-El Palo. Evidencia University
Address: Avda. Juan Sebastián Elcano, 177, 2º Piso, 29017, Málaga, Spain
E-mail: adominguez@evidentiauniversity.com

José Luis de la Fuente Madero
PhD in Medicine
Institution: Área Med. Legal y Forense. Facultad de Medicina. Univ. Málaga (UMA)
Address: Boulevard Louis Pasteur, 32, 29010, Málaga, Spain
E-mail: jlfuentem@gmail.com

José Manuel Burgos Moreno
PhD in Medicine
Institution: Instituto de Medicina Legal y Ciencias Forenses de Málaga
Address: C/ Fiscal Luis. Portero García, s/n, 29010, Málaga, Spain
E-mail: josemanuel.burgos@gmail.com

Andrés Sotoca Plaza
PhD in Psychology
Institution: Sección de Análisis del Comportamiento Delictivo (SACD). U. Técnica de Policía Judicial de la Guardia Civil
Address: C/ Príncipe de Vergara 246, 28016, Madrid, Spain
E-mail: andressotoca@hotmail.com

Alicia Juárez Bielsa
Master's Degree in Nonverbal and Deceptive Behavior
Institution: Sección de Análisis de Conducta (SAC), U. Central de Inteligencia Criminal (UCIC), Cuerpo Nacional de Policía
Address: C/ Julián González Segador, s/n, Hortaleza, 28043, Madrid, Spain
E-mail: alicia_juarez@hotmail.com

Rafael Manuel López Pérez
PhD in Economy. PhD in Psychology
Institution: Evidencia University of Behavioral and Forensic Sciences’s Provost
Address: 111 E. Monument Avenue, Suite 401-09 Kissimmee, FL 34741 (USA)
E-mail: rlopez@evidentiauniversity.com

ABSTRACT
A new theoretical framework developed over the last 10 years, the Behavior Analysis in Medicine, is described to address the challenges faced by forensic and medical or psychological assessment in daily clinical practice. With an interdisciplinary and scientifically based approach that is flexible but systematic in its application, the System for Analysis of Validity in Evaluation (SAVE) is designed to
incorporate a wide range of useful methods, techniques and skills drawn from different sources (forensic medicine and psychology, criminology, health law, deception detection, etc.). It is structured in three successive or non-successive phases: verisimilitude ($V_1$), which corresponds to the analysis of the verbal content of the statement; veracity ($V_2$), as the congruence between verbal and non-verbal, and verification ($V_3$), the process of checking the information previously obtained. There is also an overarching phase ($V_0$) or identity assessment, which allows the previous results to be adapted to each case. These knowledge and skills can be learned and trained, all of them have been scientifically tested and have a large number of published references to deepen each phase. In addition, this process allows for easy adaptation to each case and context, avoiding upsetting genuinely impaired examinees and going unnoticed unless the probability of fraud is high. We therefore believe that all forensic, expert witness and legal professionals, especially doctors and psychologists, whether civil servants or independent, will benefit from this way of conducting their assessments, improving the clinical relationship and the necessary management of deception when needed.

**Keywords:** clinical distortion, forensic medical evaluation, expert witness, forensic psychological evaluation, behavioral analysis in medicine, malingering, SAVE.

### 1 INTRODUCTION

Forensic, evaluative or expert medicine is carried out in a non-care clinical setting, where it is essential to incorporate elements of analysis of the validity of each case (Álvarez Sáenz et al., 2003), understood as consistency and legal value. Access to benefits, including economic ones, requires it. Its natural bioethical context is that of the principle of justice (Domínguez-Muñoz et al., 2014). In Spain, together with legal and forensic psychology, it is carried out mainly in the Institutes of Legal and Forensic Medicine (IML), the Medical Inspections and/or Medical Units of the National Institute of Social Security, the Mutual Associations cooperating with the Social Security (MCS), the Evaluation and Orientation Teams (EVO) for the assessment of disability, as well as the different cabinets of physicians and psychologists expert witness, in free practice or through Courts appointments (in Spanish, *insaculación*) to appear officially (Domínguez-Muñoz, P. & Domínguez-Muñoz, A. 2020).

Each of these instances is governed by its specific legal and deontological regulations (Domínguez-Muñoz et al., 2014). In the care setting, however, there is a presumption of authenticity that places the clinical act in a very different frame of reference, enhancing trust and the clinical relationship (Echeburúa et al., 2011). However, these are not unique or watertight spaces; between them there is a formal flow of clinical documentation and other multiple and diverse informal connections that link them closely, creating a communication network with the informed (injured, victim, worker, ...) as the nerve center and main node of interactions between the two environments. At the same time, care and expert elements may also be intertwined within each of the domains and, for example, in an expert consultation it may be necessary to address a possible diagnostic or therapeutic error that is relevant and potentially serious. Therefore, we believe that all four bioethical principles should be a reference in both
areas (Domínguez-Muñoz et al., 2014) and that it would be better to consider these areas as two sides of clinical activity, each of which may or may not be present in the other.

On the other hand, it is common to find that the daily practice of forensic medicine lacks, in its various fields, a common structured scientific discourse. We do not have a generally accepted common terminology or a procedure for validity analysis that is basically protocolized (Domínguez-Muñoz, 2016). Validity checks are elements that may or may not be addressed individually by each of the professionals involved, and generally in an intuitive and disorganized manner. It is up to each professional to decide how much attention to pay to this issue and what conclusions to draw from it. (Domínguez-Muñoz et al., 2017a).

In order to address this issue, to which we have dedicated intense collaboration and modest research since 2013, now with Evidentia University (www.evidentiauniversity.com), we emphasize interdisciplinarity as the best way to approach the study of deception and fraud. Thus, among other entities, we are grateful for the collaboration (in Spain) with the Criminal Behavior Analysis Section (SACD) of the Guardia Civil, the Behavior Analysis Section (SAC) of the Cuerpo Nacional de Policía, the Centro de Inteligencia de las Fuerzas Armadas (CIFAS), the Centro Nacional de Inteligencia (CNI) and its Academy, where we had the honor of presenting the MOSAVE (Domínguez-Muñoz, 2021a), developed in accordance with the objectives of the PsycInt Group, of Psychological Intelligence. In addition, by participating in various training activities and congresses in the field of Legal and Forensic Psychology, Neuropsychology, Health Law, Valuation of Bodily Injuries, Criminology, Sociology, Detection of Deception, Ergonomics or R+D+i in Defense and Security, for which we would like to thank all those who made this possible, the Instituto Nacional de la Seguridad Social (INSS) and its Subdirección General de Coordinación de UnidadesMédicas, in particular; have provided the foundations (Domínguez-Muñoz, 2021b) for designing and perfecting a flexible system that can be useful in many areas, especially in the analysis of behavior in the forensic and expert witness fields; the System for the Analysis of Validity in Evaluation (SAVE).

2 SYSTEM FOR ANALYSIS OF VALIDITY IN EVALUATION
2.1 FOUNDATIONS, PHASES, ACTIVATION AND SAVE PROCESS

During the development of SAVE, we reviewed its scientific and bioethical foundations. Thus, the use of SAVE in expert or forensic evaluations would already be justified by the predominance of the bioethical principle of justice over the other three (non-maleficence, beneficence and autonomy). However, the correct application of validity analysis in certain cases would prevent harm to the informant in relation to various issues mediated by instrumental learning that lead to the progressive and involuntary assumption of a sick role (illness behavior), until reaching the Learned Disability Syndrome
(Domínguez-Muñoz, et al., 2014). As an extension of the above, we will review the scientific foundations, which are deeply intertwined with bioethics.

Within the clinical setting, deception and fraud have their own profiles since, in many cases, limitations and symptoms are claimed (pain, asthenia, etc.) that cannot be objectively measured, and in the face of which, often, concrete and specific diagnoses cannot be reached after the appropriate clinical study, including explorations and complementary tests (Casado-Morales & Laguna-Bonilla, 2017). These often turn out to be compatible with normality or show only minor findings that do not explain the symptoms presented by the patient (Calandre-Hoenigsfeld & Bermejo-Pareja, 2011). On the other hand, and despite their differences (Echeburúa, Muñoz, & Loinaz, 2011), both in the medical care setting -the most common- and, above all, in the expert setting -legal medical- it may be necessary to analyze the validity -understood as firmness and consistency- of these symptoms, because they may pose a real threat to the patient, but also a necessary condition for access to some type of benefit, advantage or compensation, which leads us to the deontological imperative of carrying out a detailed study of each case (Domínguez Muñoz, et al., 2014).

The so-called MUPS, Medically Unexplained Physical Symptoms (Síntomas Inexplicables Biomédicamente, in Spanish), were described at the turn of the century (Richardson & Engel, 2004) in order to include in the same group patients with these clinical characteristics, characteristics that also coincided with difficulties in the doctor-patient relationship and a large overlap of symptoms without objectifiable basis in different areas and devices (digestive, osteoarticular, gynecological, maxillofacial, rheumatological, etc.). Since somatization - the production of somatic symptoms for psycho-emotional reasons - is a pathophysiological mechanism accepted by the international medical community and included in the reference treaties (DSM-5 and ICD-10), it has been proposed as the basis of the so-called MUPS/SIB, according to the biopsychosocial model currently used in medical science.

For our part, we consider of great utility the concept of MUPS/SIB, starting from somatization (López Santiago & Belloch, 2002) as its main etiology and, therefore, with adaptive learning phenomena based on classical and, above all, instrumental conditioning (Domínguez Muñoz, et al., 2014). There is a broad scientific base that links MUPS/SIB from a cognitive-behavioral perspective (Deary, Chalder, & Sharpe, 2007) with the elements of learning in its development and maintenance, even with ethological phenomena described in the second half of the 20th century; learned helplessness (Seligman, 1972) and learned laziness (Engberg, Hansen, Welker, & Thomas, 1972). In the first case, which is well known and has been extensively studied in humans (Hiroto & Seligman, 1975), dogs that were first subjected to random and unavoidable electric shocks developed - in contrast to those that were able to act to stop the shocks - a depressive picture with resignation, passivity, and an inability to learn escape mechanisms when these were clearly available in a second experiment. Learned laziness, which is less
well known and more scientifically discussed, is often described in contrast to learned industriousness when pigeons are modified to initially receive random and constant rewards (food) instead of aversive stimuli, with no control or influence on their behavior. In the later scenario, when obtaining food required their directed performance, it was much more difficult for them to learn to earn the reward than for the group previously trained to obtain food by their own means and also than for the control group, pigeons without any conditioning. Both phenomena would potentially be present in MUPS/SIB, combined in each case, and could give rise to the Learned Disability Syndrome (Síndrome de Invalidez Aprendida, in Spanish). This would correspond to a maladaptive behavior, usually established after a long period of illness, characterized by psychosocial suffering in a sick role context, reinforced by the existence of litigation and/or access to compensation or benefits that allow living without having to earn a living (Domínguez Muñoz, et al., 2014).

We must complete the above with the so-called Pygmalion effect, originally described in the field of education (Rosenthal & Jacobson, 1968) as the influence of the induction of a certain belief in one person with respect to another and the effect on the performance of the latter produced by certain behaviors of the former - subtle, mainly nonverbal and basically unconscious - due to this induced belief, through the covert communication that would develop in any human interaction (Rosenthal, 2003). For all these reasons, the behavior of the physicians who treat these patients and the clinical relationship they establish (Friedman & DiMatteo, 1979), as well as the effects of both on the receipt of rewards (compensation, vacation, other benefits, etc.), seem to us to be clues to such associative learning. As early as 1894, Dr. Patmore, a prison physician, wrote about malingering in the British Medical Journal:

"Our patients place in us a sacred trust, and look to us not only to protect them and alleviate the results of actual suffering; but by a tacit compact they also look to us to stimulate them to activity when disease has abdicated its throne, but may have left behind it a morbid aversion to the daily routine of work and the renewed struggle for existence. It is necessary to regulate these renewed forces; to dispel, even by the power of life, the clouds that delay them and, often, delay the stimulus to return to the battlefield of life, which is in itself the best tonic; and in doing so, we are fighting - in more than one sense - against what, if not dispelled, could degenerate into something that could become the closest thing to simulation, that is, an imaginary incapacity for the performance of duty".

As an example of the above, in a more recent paper (2018), Lenaert et al. propose a mechanism for the development of chronic fatigue syndrome, showing how associative learning may contribute to the development of chronic fatigue, fear of fatigue, fatigue and activity avoidance, and even disability. The extent to which such processes lead to increased chronic fatigue and fear-related avoidance behaviors may depend on a number of risk factors, most notably perceptual-cognitive biases, sensitization, catastrophic fatigue, and overgeneralization. Knowing all of the above, the approach to malingering would go far beyond the application of criteria such as those in the DSM-5, since directly
assuming that cheating exists when two of these four criteria are present would be an oversimplification without a scientific basis and with a high probability of false positives (Rogers & Neumann, 2003).

On the other hand, determining the degree of intentionality to distinguish malingering from somatization, conversion disorders, or the existence of an "intrapsychic need" characteristic of factitious disorders can be very complex, especially the latter, which also seems to us to be of no practical use. In addition to the above, and showing the scarce practical interest of attributing voluntariness (Bass & Halligan, 2007), the other nosological reference treaty, the International Classification of Diseases or ICD, in its 10th edition, includes in heading F68.0, "Psychological elaboration of somatic symptoms", which specifically includes the old concept of rent neurosis.

Moreover, the specific published protocols, among which Slick et al. (1999) for the simulation of cognitive impairment and Bianchini et al. (2005) for cases of functional limitation due to (chronic) pain, with an adequate ability to detect malingering with a high probability of being correct - through criteria based on scientific evidence - are generally very complex to apply in daily clinical practice outside the academic setting. Nevertheless, when such protocols are applied, they show high rates of probable or confirmed malingering; for example, 36% in cases of functional limitation due to (chronic) pain and more than 25% in cases of cognitive impairment (Greve, Ord, Bianchini, & Curtis, 2009).

As a consequence of all that has been explained so far, following Albert Einstein's statement "Everything should be made as simple as possible, but not simpler", that is often referred to as the Principle of Simplicity, we conclude that it is necessary to try to find alternative approaches that are applicable in daily practice, that are flexible enough to adapt to the context of each evaluation, and that allow their application to be systematized. As far as we know, no integrated method is used in the usual reality of evaluation, expert witness and forensic daily practice in our environment. As an example, the medical inspectors of the Social Security in Spain consider malingering and related situations as frequent and relevant in their consultations, but they currently do not seem to have sufficient specific references (Wygant, Arbisi, Bianchini, & Umlauf, 2017), nor a structured common scientific discourse for these cases, which are addressed according to individual criteria more or less adjusted to the current state of knowledge (Domínguez Muñoz et al., 2017). That is, in the absence of an applicable and adoptable method, each expert witness, examiner or forensic expert, as well as in the care setting, would approach (or not) this issue individually, according to each professional and, in general, in an intuitive and unstructured way. According to Muñoz, et al. (2011), perfectly applicable as well to the forensic and expert witness field of medicine:
These, together with the integration of the various disciplines already explained, along with those inherent to any analysis of human behavior in Ethology, would be the bases of SAVE (Domínguez-Muñoz, 2021b), establishing four phases in two domains of flexible application to scientifically question the validity of a case, confirming its consistency and legal value. Created in a clinical context (Domínguez-Muñoz, et al., 2013), in its four phases the different manifestations of human behavior are specifically studied; the verbal analysis of the discourse is included in the section of Verisimilitude (Grau, 2021), called V₁. That of the indicators present in the non-verbal behavior and their congruence with the verbal ones (Juárez, 2021) corresponds to Veracity (V₂). Both are closely related in the Interview Domain. The third phase or V₃, which is directly related to the evidence in law, is Verification or Context (Jiménez, 2021) and corresponds to the search for elements external to the interview with which to confirm or falsify what has been declared. It includes objective (examinations, other evidence, etc.) and subjective elements; in general, the various means of evidence allowed in each field. Finally, although of transversal application during the whole process and therefore called V₀, would be the Valuation (Garrido, 2021), the study of the subject's identity, through information on his/hers Vinculations, intelligence and personality, using indirect profiling to know his/hers main characteristics and adapt our actions to optimize the results of the rest of the phases. V₃ and V₀ integrate the Investigation Domain area and all this can be reduced to a simple formula, the SAVE equation:

\[ X = (V₁ + V₂ + V₃) V₀ \]  

Since the exercise of expertise in situations conducive to malingering requires we use a healthy skepticism to guide us in deciding when to question the validity of a case and appeal to the evidence that can prove or disprove it (Shermer, 2009), an initial screening function is necessary to reduce the enormous task of thoroughly examining all the cases seen in a consultation and doing so fairly, that is, giving each one the treatment it deserves. There are several situations in which the probability a priori of malingering is very low or irrelevant. According to Kahneman (2012), people use a dual-system approach of thinking; fast & emotional thinking (System 1) and slow & rational thinking (System 2); among other differences, the former occurs automatically, by default and in the absence of perceived effort, while the latter involves a voluntary effort that we soon find exhausting and use only for the essential time.
Given all of the above, the screening function should be performed in System 1 so that the trained professional does not have to make an effort to remain focused on the elements of malingering detection, but can monitor this risk in the normal course of his or her practice. In this situation, a deviation from normality may appear, an incongruous element that triggers the suspicion of fraud or deception. It is this element that stands out - the anomaly that deviates from the recognized pattern - that is the basis of the pattern/anomaly paradigm (Pasquinelli, 2015), which is concretized, for instance, in the concept of clinical distortion in the field of expert medicine (Domínguez-Muñoz et al., 2013). Clinical distortion would thus correspond to a subjective impression on the part of the expert who perceives that the case presents an imbalance between its objective and subjective elements, an anomaly that causes it to diverge from the expected pattern. A situation analogous to that raised in the indirect - or unconscious - detection of deception (Reinhard, Greifeneder, & Scharmach, 2013) and related to the hypothesis of Damasio's somatic marker (Bechara, Damasio, Tranel, & Damasio, 1997), whose neurophysiological basis would be more emotional than cognitive. Before applying validity analysis and for subsequent expert use, we must establish the factual assumption; a premise that, if met, will have legal or other consequences.

In the field of disability assessment in Spain, for example, a factual assumption would be the undue prolongation of the collection of sick leave benefits through malingering, an offense covered by Article 307 ter of the Criminal Code. This is followed by the scientific-technical phase, the validity

---

1 In this way, by combining the factual assumption or question to be evaluated (the potential illicit, deception or fraud) and the starting hypothesis always in the opposite direction, we try to reduce or avoid biases such as confirmation bias, etc. This subject is discussed at greater length in the Introduction to Chapter 11 of the Deception Manual. (MADEMMEN).
analysis itself. Its core would be formed by the three or four phases already explained and, being a research based on science, it must contain an initial hypothesis that, for greater certainty of the subject under study and in accordance with the model of the Truth Default Theory (Levine, 2014), will correspond to the authenticity of the case, leaving the burden of proof to the contrary of what is collected in the Validity Analysis. Based on the results obtained in the applied phases, which can be given on a Likert-type scale in V1, V2 and V3, conclusions are drawn about the proposed factual assumption, which corresponds to the unknown in the SAVE equation.

![Figure 2. Representation of the eight subtypes of the PEN model of personality (Eysenck, 1967).](source)

The Identity Valuation, or V0, is carried out transversally, based on indirect personality profiling, a very useful technique in our analysis (Halty, González y Sotoca, 2017). By observing a person's behavior, we can infer personality traits without the need for a psychometric tool designed for that purpose (classical or direct assessment). Specifically, with a biological basis and with only three macrotraits, the PEN model - Psychoticism (P), Extraversion (E) and Neuroticism (N) - of Eysenck (1967) stands out, although there are other aspects of personality that are specifically related to the likelihood of engaging in deception - also in the clinical context - and generating a faster and wider spiral of deception. The so-called DT or Dark Triad (TRIOPE, in Spanish) of personality includes narcissism, Machiavellianism, and psychopathy, all at the subclinical level (Nohales Nieto, 2015).

These are three important traits that we could relate to the macro trait of psychoticism of Eysenck's PEN model, especially if we use as a basis for profiling the tool known as The Dirty Dozen (Jonason & Webster, 2010).
2.2 FROM CLINICAL DISTORTION TO CLINICAL DECEPTION

Clinical distortion corresponds to the subjective impression of the physician who perceives the case as disproportionate between objective and subjective elements. It would therefore be an anomaly detected in the clinical pattern, whose neurophysiological basis would be more emotional than cognitive, using the aforementioned System 1 of thinking, which, like so many other unconscious mental processes, is much faster, more intuitive and automatic, but also more prone to errors due to biases (Tversky & Kahneman, 1979). Thus, we use a sensitive network to activate the SAVE, which will subject the case to a triple filter, with System 2 thinking, to obtain a specific and as accurate a result as possible.

Cognitively, clinical distortion can be defined as the presence of at least the first two DSM-5 malingering criteria or, according to Tearman (2003), who in turn draws on Rogers (2008), a magnifying, reducing, or mixed response style. By response style (RS), we mean the patterns of behavior that patients exhibit when reporting their symptoms, whether physical or psychological. Five types are considered: honest, magnification, minimization, mixed (for example, a case of fibromyalgia syndrome that exaggerates the limitation due to pain but downplays the psychoemotional affectation), and irrelevant, which does not allow valid conclusions to be drawn, except for the lack of cooperation of the person being evaluated.

From the expert's perspective, the clinical distortion constitutes a differential diagnosis, which we represent with a speedometer (Figure 3). On the left is the area of diagnostic or therapeutic error, cases in which the observed disproportion is due to an incorrect diagnosis or therapy. An example would be that of a road accident victim with psychoemotional affectation, a mixed adaptive disorder, treated with benzodiazepines, who appears to us in consultation to be very impaired functionally and who speaks to us, after a long time and with no apparent false motive, of suicidal ideation. In reviewing his history, we found that he had been diagnosed with bipolar disorder, which he had hidden from us, and that he had been under the care of a mental health unit for years before the accident (pre-existing condition).

Figure 3. Differential diagnosis of Clinical Distortion as a curved dimension.
In the vertical; mental disorders with physical symptoms, mainly somatization, including MUPS/SIB, conversive and affective disorders. In this group, which has changed significantly in DSM-5, the clinical presentation is mainly involuntary. They are characterized by observable distress. This distress is sometimes exaggerated for the sake of legitimacy. Conversive disorders, now of functional neurological symptoms in DSM-5, can show a minimization RS as in the classic belle indifference. On the right is clinical deception, the extreme of which is purely voluntary to achieve a material goal, which we call clinical deception and corresponds to the term malingering. This range would include, first and foremost, those cases in which the exaggeration (magnification RS) is no longer intended to convince but to deceive. It would also include, at the right side of the figure, factitious disorders in which deception is present, although we attribute it to an intrapsychic need that is, at least partially, beyond conscious control.

2.3 DISEASE, ILLNESS, OR CLINICAL DECEPTIVE BEHAVIOR

We can expand the scope of the proposed differential diagnosis to describe the types of observable demeanor and project them onto the three main types of behaviors exhibited by the reported. This approach - behavior analysis or behavioral medicine - has precedents in the last century. Parsons, Mechanic, and Pilowsky were prominent in the 1950s and 1960s. With the rise of the behavioral sciences and Engel's biopsychosocial model in the 1970s, it culminated with Leventhal and McHugh and Vallis, who distinguished between disease (enfermedad in Spanish) and illness (padecimiento in Spanish) behavior. Then Fava and Blackwell would be the reference authors with Ensalada and Kirmayer at the beginning of the century and, more recently, the proposal of MUPS (medically unexplained physical symptoms) and the approach of Aronoff and Fordyce (Domínguez-Muñoz, et al., 2017b).

We would call disease behavior the well-adapted way of perceiving, evaluating, and acting about the state of health in the presence of disease, conditioned mainly by its objectifiable biological elements. For example, we can induce symptoms and signs (asthenia, clinophilia, fatigue, fever) by injecting bacterial endotoxin, which generates proinflammatory cytokines. The illness (or abnormal illness) behavior is characterized by its maladaptive character and the great prominence of subjective elements, almost always disproportionate or the only ones (Pilowsky, 1969). Clinical deceptive behavior, on the other hand, would be an adaptive response to a complex situation, using the state of health to achieve tangible goals in a mainly voluntary manner (secondary benefits) and typically with a mission-driven behavior (benefits).
We can adapt to each case as shown in Figure 4. Beginning the assessment interview with an open and unprejudiced attitude, we can move to a simple attribution of correspondences (benefits, sequelae, etc.) when the RS is sincere (disease behavior) or irrelevant. Moving to intervention (information, orientation, etc.) within the deontological limits of the expert clinical relationship for the illness behavior, in which the personal and psychosocial elements condition the clinical expression. Having excluded the previous, and with the deceptive behavior as the main possibility, the best options described in the research in each of the fields should be applied, integrating them in a flexible and adapted way in the SAVE metaprotocol and its four phases.

3 BEHAVIOR ANALYSIS TRILOGY

This is the name given to the set of three manuals dedicated to the various aspects of behavior analysis, oriented towards expert, investigative or forensic use, with reference to the PsycInt Group of the Psychological Intelligence and the Judicial Police units of our security forces and corps; the Sección de Análisis del Comportamiento Delictivo (SACD) of the Guardia Civil and the Sección de Análisis de Conducta (SAC) of the Cuerpo Nacional de Policía. In order of publication, the works that make up this trilogy are:

1. The Manual de Comportamiento No Verbal (MACONVE), Beyond Communication and Language.

Figure 5. The three manuals of the Behavior Analysis Trilogy, published, from right to left, by Pirámide (MACONVE, 2016) and Behavior & Law Ediciones (MADEMEN, in 2020 and the MOSAVE, in November 2021).


The first of these, MACONVE, solidly lays the foundations of scientific analysis of nonverbal behavior and indirect personality profiling, with more than 800 references and their specific applications; The FEAP (Facial Expression Analysis Protocol), takes into account biological and psychological elements that are studied in a particular subject from its behavioral baseline, the NBAM (Nonverbal Behavioral Analysis Matrix), to study in detail the nonverbal behavior with its various channels (Depalmas, Cossu, Nivoli, Milia & Lorettu, 2020) and also the IPPT, (Indirect Personality Profiling Tool), for indirect personality profiling, basis of The Identity Valuation (V₀) and criminal profiling (Rodriguez, 2011). MADEMEN focuses on the various possibilities of the interview domain to detect deception, with an academically applied approach and the SAVE methodology at its core. Finally, MOSAVE develops the possibilities of an applied use in daily practice of the System for Analysis of Validity in Evaluation, in order to disseminate a methodology that we consider to be of great potential interest.

4 CONCLUSIONS AND FUTURE PERSPECTIVES

We believe that SAVE represents an innovative approach to assessment in the expert field, particularly in forensic medicine and psychology. Its application may improve outcomes, including the detection of potential malingering, by providing a more objective and structured analysis of the validity
of patient claims. Further research is needed to advance this field, while maintaining the proposed ethical standards in the use of SAVE. In addition, the continuous training and involvement of professionals interested in this approach will allow a continuous improvement of its increasingly scientifically evidence-based effective and responsible application. Maintaining an open vision of interdisciplinarity will continue to be fundamental to enriching the understanding of human behavior and improving assessment practices in the expert and forensic fields.

In conclusion, after the first ten years of this work, we believe that despite some limitations, such as the lack of published applied research, SAVE represents a step forward in the search for versatile, accurate, and ethical methods for scientifically based behavioral analysis, and its proper implementation can significantly contribute to improving the quality of expert testimony, especially in the fields of evaluative and forensic medicine or legal and forensic psychology.
REFERENCES


