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### **Research Article**

The learning of specific dysfunctional behavioural patterns through socialnetwork and telematics platforms in preadolescents and adolescents.

Psychopathological clinical evidence

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**Keywords:** Acquisition of dysfunctional behavior; Internet; Social-network; Children; Pre-adolescents; Adolescents; Young adults; MMPI-II; PICI-1

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## **Abstract**

**Purpose:** This research addresses the issue of personality profiles of subjects who, due to age and birth in the age of digitalisation and the internet, have been massively exposed to telematic content without extensive parental control. In this research, the subject is addressed to the psychopathological investigation of personalities, according to the PICI-1(TA) model.

Methods: Clinical interview and administration of the MMPI-II and PICI-1.

Results: The research on a population sample of 975 people demonstrated: 1) On the MMPI-II, they reported 51.8% on the hypochondria clinical scale, 53.2% on the depression scale, 62.2% on the hysteria scale, 66.8% on the schizophrenia scale, 76.7% on the hypomania scale, 82.4% on the psychopathic deviation scale and 83% on the paranoia scale. In relation to the content scales, the matter is different: If for the clinical scales the average is between very close values, for the content scales it is not possible to do so, since the activations in the male group are much lower than in the female group. And in fact: a) for the men's group the following is reported: 52.6% on the depression scale, 64.4% on the cynicism scale, 67.4% on the anger scale, 74% on the antisocial behaviour scale, 76.4% on the social discomfort scale, 84.4% on the family problems scale and 86% on the anxiety scales; b) for the woman's group the following is reported: 85.4% on the social discomfort scale, 86% on the depression scale, 87.7% on the antisocial behaviour scale, 89.5 on the family problems scale, 94.4% on the anxiety and cynicism scales, and 98% on the anger scale. 2) On the PICI-1, the data are even more significant and expressive a precise psychopathological diagnosis of personality. The male population sample of cluster A singularly scored at least 5 dysfunctional traits among bipolar, schizoid and schizoaffective personality disorders, for 84.6% (309/365), thus obtaining a marked diagnosis of specific personality disorder. The remaining sample of the population however obtained individually at least 4 dysfunctional traits among the masochistic, psychopathic, delusional, histrionic, narcissistic and borderline personality disorders. Common diagnoses above 50% include 50.9% (186/365) of paraphiliac disorder, 75.6% (276/365) of sleep-wake disorders among borderline, narcissistic and sadistic personality disorders, for 94.7% (578/610), thus obtaining a marked diagnosis of specific personality disorder. The remaining population sam

of sleep-wake disorders. On the basis of these data, it is reasonable to state that 84.6% (of the selected male population sample) and 94.7% (of the selected male population sample) presents marked psychopathological traits. Specifically: for the male group, the dysfunctional traits refer individually, with at least 5 markings, to bipolar, schizoid, schizoaffective disorder, and with 4, to psychopathic, delusional, narcissistic, histrionic, masochistic and borderline disorder; for the female group, the dysfunctional traits refer individually, with at least 5 markings, to borderline, narcissistic and sadistic disorder, and with 4 markings, to bipolar, paranoid, histrionic and psychopathic disorder.

Conclusions: From this level of psychopathological morbidity one can easily deduce that the excessive overexposure to the use of the internet, without a capillary and specific parental control, in childhood and pre-adolescence, exposes the subject to acquire a series of behaviours learned through social-network and more generally on the internet, able to significantly modify the psychophysical growth of the person. If the learned behaviours are then acquired by third parties who manifest dysfunctional behaviours and conducts, because they are in turn the result of psychopathological conditions, the result is the acquisition of that dysfunctional behaviour as 'functional and not pathological', with all the consequences one can imagine. The behavioural mechanism, to simplify, is exactly the same as that of the offence of money laundering: one acquires a dysfunctional and maladaptive behaviour (as is the 'dirty' money in the offence of money laundering) to make it one's own and functional, to obtain one's own psychological benefit (as is the money after being 'cleaned' through the use of operations considered lawful); a psychological benefit that may be the satisfaction of a need, a necessity or a specific requirement (e.g. receiving attention using anger, attracting sexual attention from peers by using provocative attitudes and poses in the presence or through photography or videotaping, or maintaining a certain physical standard because it is socially accepted by using drugs or vomiting or food restriction practices). In view of the alarming results of this research, it seems obvious to provide free psychological support for all families, capable of correcting at an early stage certain dysfunctional behaviours that may have been learnt through unsafe surfing on the Internet, and free support for all young patients who need emotional literacy to correct certain dysfunctions before they take root in their personalities; likewise, it seems obvious to curb the viewing of certain contents which, due to their structure and function, are toxic to the quality of healthy psychophysical growth.

# **Contents of the manuscript**

## Introduction and background

Behaviour is the way in which a person or living organism acts and reacts, placed in relation or interaction with other subjects, objects, organisms or more generally with the environment. It is therefore the externalization of an attitude, which in turn is based on an idea or belief, more or less realistic or more or less conscious. Human behaviour can therefore be conscious and voluntary, if conscious, or unconscious and involuntary, if unconscious, but always closely linked to the surrounding environment and the specific personality model. Behaviourism is an approach to psychology that studies behaviour, starting from the theories of the psychologist John Watson, at the beginning of the 20th century, based on the assumption that the explicit behaviour of the individual is the only scientifically studiable unit of analysis in psychology, making use of the stimulus (environment) and response (behaviour) method, as it is directly observable by the scholar; the theoretical constructs used up to that time by the structuralists (Edward Titchener) and functionalists (James Angell) seemed to Watson to be too exposed to the risk of subjectivism; the only way, according to him, to achieve a truly scientific study of human behaviour was precisely to eliminate a priori the theoretical construct of mind, in order to focus experimental research only on manifest behaviour [1].

In fact, during its history, behaviourism has gone through three main phases [2]:

- a) The "pre-paradigmatic phase" with Watson, for whom given a "stimulus" S one can predict the "response" R (S-R) and vice versa.
- b) The "paradigmatic phase" with Robert Woodworth, who admitted the existence of an individual (but not biological) variability called "organism" O, according to this scheme: S-O-R. Woodworth introduced and popularised the expression Stimulus-Organism-Response (S-O-R) to describe his functionalist approach to psychology and to emphasise its difference from the strictly Stimulus-Response (S-R) approach of

the behaviourists in his second edition of Psychology in 1929. He later published the theory in 'Dynamic Psychology' (1918) and 'Dynamics of Behaviour' (1958). Within his modified S-O-R formula, Woodworth noted that the stimulus causes a different effect or response depending on the state of the organism. The 'O' (for organismic) mediates the relationship between the stimulus and the response. More recently the theory has been extended to theorize that artificial organisms (AIenabled systems) can also elicit responses.

c) The "post-paradigmatic phase" with Raymond Bernard Cattell, for whom organic variables (personality traits) are found in both S and R, i.e. both in the onset of the stimulus and in the response.

Psychology, since its origin, has been understood in its etymological sense as a discipline that presents the soul as its object of study. In the period between 1600 and 1700 the idea began to emerge that the mind could be better examined through the systematic study of experience. This created the conditions for a change in the methodology of investigating psychic processes. The object of psychology's investigation remained the same, namely the psyche, although its direct evaluation was replaced by the analysis of its externally observable functions. Behaviourism represents a change of perspective, a distortion of the object of study of psychology, no longer consciousness, but observable behaviour. The behaviourists themselves redefined behaviourism as the true method of doing scientific psychology, with a method and a new object of study, with a perspective very different from the previous perspectives. In the extreme, repudiating the various parallel and past perspectives, behaviourism is presented as the only way to do psychological science. The object of study such as emotion, habit, learning, personality is analysed only through their observable manifestations in terms of emotional, habitual, learning and personality-constitutive behaviours. The fundamental principle of behaviourism is the aspiration to give psychology a scientific basis, so that it can be fully included among the biological sciences, in the natural sciences [1].

In fact, the birth of behaviourism is usually dated to 1913 with the publication of the article "Psychology as seen

by a behaviourist" by Watson, who was one of the first psychologists to embrace both Darwinian biology and the study of manifest behaviour, starting from structuralist and functionalist concepts, and moving on to the study of animal behaviour and learning. In order to revolutionise the object of study of psychology Watson attacked the introspective method. He considered introspection to be an unscientific method for two fundamental reasons: a) the observer identifies with the observed (e.g. if the observer observes his consciousness, he changes his object of observation, which coincides with the consciousness of observing); b) the singularity of the observer leads to the impossibility for others to perceive the same object. In this way, introspective data were only perceived by the individual, not refutable or confirmable and not shareable like the data of all other sciences. The introspective method had in fact led to a fragmentation of results with very often disparate terms to describe the same phenomenon. The shift to the study of behaviour instead of consciousness made it possible to use more rigorous and objective methods that could be subject to immediate inter-subjective control. Thus, between 1913 and 1930, the behaviourism studied by Watson developed. In his theory, behaviour was explicated in the terms of: "'adaptation of the organism to the environment', 'muscular contractions', 'integrated set of movements', 'actions'. For Watson, the unit of psychological observation is behaviour in the sense of a complex action manifested by the organism in its entirety, whatever it does, such as turning towards the light or in the opposite direction, jumping at the presentation of a sound. In other words, it is all that can be observed in the behaviour of others, in the literal sense of the term ('I see that you are smiling', so your manifest behaviour is smiling; and not being happy! The mind, and everything in it, is unfathomable by the method of the natural sciences; the Galilean method). These behaviours are not identified with the single psychological reactions that the organism manifests (contraction of a single muscle, or activity of single organs such as respiration, digestion), which constitute the different object of study of physiology. Those behaviours are nothing but the combination of simpler reactions, of molecules made up of the single physical movements that as such are studied by physiology and medicine. In fact, the principles of composing simple units into complex units do not change the nature of the former, but simply compose them. The principles to which Watson refers are frequency, recency and conditioning. The principles of frequency and recency imply that the more often or the more recently an association has occurred, the more likely it is to occur. The principle of conditioning states that there are unconditional responses in the organism to certain situations. A starving organism receiving food will certainly react by salivating, a sudden beam of light in the eyes will certainly cause the pupil to contract. The food and the beam of light are called unconditioned stimuli, i.e. events that occur in the environment and unconditionally provoke a certain response in the organism. Watson was influenced not only by Pavlov, whose experiment can also be called "classical conditioning", but also by Russian reflexologists such as Ivan Sečenov (who stated that the acts of conscious and unconscious life are nothing but reflexes) and Bechterev, who was particularly interested in muscular reflexes. Pavlov's dog experiment can be cited

as an example of the simplest form of learning: it consists in the association, in a continuous way, of an unconditioned stimulus (the food), in itself able to provoke an innate and unconditioned response (the salivation), to a neutral stimulus (the sound of a bell); the new neutral stimulus (the sound of the bell) so associated will become in this way a "Conditioned Stimulus" able to provoke also by itself the initial response now called "Conditioned Response" (salivation), that is a response not innate but conditioned by a previous experience: the dog, taking up the well-known experiment, will begin to salivate at the simple sound of the bell even in the absence of the sight of food. For the behaviourist, therefore, research on conditioning was of fundamental importance because through this paradigm it was possible to better define the environment in which the organism acts, and where certain responses are elicited. This offered a key principle to explain complex responses as a result of multiple and repeated conditioning. For Watson, the study of learning in children was fundamental. Fear, love and anger were also Watson's basic emotions and are defined by the environmental stimuli that elicit them. All the more complex emotions are constructed from the basic emotions. A wellknown study of emotion learning is the case of little Albert. Albert used to play with a mouse until he was presented with a loud noise together. After learning by conditioning, the child showed a great fear of mice. Noise is an unconditioned stimulus capable of provoking a direct fear response. The contextual presentation of noise with another stimulus (a mouse) had created a condition whereby the child was conditioned to be afraid also of the mouse and subsequently, because of the mechanism of generalisation of the stimulus, also of other objects with similar characteristics. For Watson, the laws governing learning were common to the different materials to be learned, be they emotions or habits. Explanations of higher psychological processes such as thought and its relation to language were a more difficult problem. For Watson, language acquisition occurs through conditioning. The child perceives an association between an object and its name and by conditioning the name evokes the same response as the object. Gradually, the motor behaviour of the vocal cords is replaced by a part of the movements so that the word is only pronounced in a whisper. Watson believed that in this way thought was formed through a set of motor behaviours of the phonatory apparatus. On a theoretical level, thought was the result of a combination of verbal and non-verbal communicative learning. In 1925 Watson therefore affirmed that the newborn baby has an extremely limited repertoire of reactions, such as reflexes, postural, motor, glandular and muscular reactions, and they affect the body and are certainly not mental traits. The child is born without instinct, intelligence or other innate qualities and it is only subsequent experience that will characterise its psychological formation. Watson thus took an egalitarian (all men are born equal) and openly empiricist position. According to this position, man is entirely the product of his experiences; it should be noted that this position is the antithesis of free will, which is completely 'eradicated'. Consequently, the study of learning, i.e. the way in which man acquires through experience a repertoire of motor, verbal and social behaviours that will later become the constitutive elements of his overall personality, assumed central importance [1,2].

#### Afterwards: [2]

Edward Lee Thorndike was the first North American psychologist to experiment with the T-maze and the cage. In the maze, the animal, after having walked along the legs of many T's, is faced with places of choice represented by the point where the leg of the T meets its horizontal segment and must learn which of the two directions (right or left) is the correct one. The typical request to the caged animal was to learn that in order to get out and find food it was necessary to lower a lever. Observing the cats Thorndike concluded that learning occurred slowly through a series of trial and error leading to the consolidation of the organism's reactions that had been rewarded. Thorndike's law of effect is a behaviourist law. One might think that intelligence consists in understanding the relationship between the act of pushing the lever and the possibility of getting out, but what can actually be observed is that the more often that act occurs, the more often a reward is associated with it. The empirical law of effect asserts that an action accompanied or followed by a state of satisfaction will tend to occur more often, whereas an action followed by a state of dissatisfaction will tend to occur less frequently. The law of effect emphasises both the adaptive nature of human action, the occurrence of which appears to be linked simply to the possibility of obtaining a reward. Thorndike favoured the idea that learning should be gradual rather than the result of sudden understanding. In fact, he observed that the time it took a cat to get out of a cage decreased regularly and gradually without sudden drops, which led him to conclude that the animal did not reach the solution in a single moment (insight), but proceeded in small steps, memorising the right answers and deleting the wrong ones.

Burrhus Skinner was interested in the observation of behaviour and its relation to reinforcement contingencies, i.e. occasions when a certain response was followed by a reward. His idea was that this type of analysis could be sufficient to explain all forms of learning, including language learning. Skinner studied the behaviour of rats and pigeons placed in a cage (the latter would be called the 'skinner-box'). Among the various responses the animal can make, one is chosen (e.g. pressing a lever) so that it is followed by a reinforcing stimulus (e.g. a grain of food). It will be observed that the response followed by reinforcement will tend to occur with increasing frequency. This paradigm (a "coherent and articulated set of theories, methods and procedures that predominantly characterise a phase in the evolution of a given science"), is called operant (or instrumental or Skinnerian) conditioning. It differs from Pavlov's (classical or responding conditioning) in that the response precedes rather than follows the critical stimulus (Skinner described Pavlov's conditioning as 'S-type conditioning' and his own as 'R-type conditioning'). In the case of Skinner's rat, the organism increasingly emits that response which has been followed by a reinforcer. The 'operant conditioning' paradigm has become a fundamental framework in psychology and physiology for studying other variables as well, but it has also become a key to explaining complex learning that appeared inexplicable on the basis of classical conditioning: if it had already been clearly shown that learning did not necessarily take place following a gradual curve, a learning curve according to the trial and error paradigm described by Thorndike, Skinner highlighted the relationship between independent variables (discriminating stimulus and reinforcing stimulus) with the dependent variable (frequency of behavioural responses), avoiding the interference of other 'disturbance' variables that had influenced the relationships emerging from the experimental apparatuses prepared by Thorndike. Learning in a three-term contingency (discriminating stimulus, behavioural response and reinforcing stimulus) therefore occurs following the release of a single response. Similarly to the habit cycle, its basic mechanism (although discovered only in the 1990s), consisting of the three phases signal-routine-gratification, the three functional units of operant conditioning are: a discriminative stimulus (context) "- SD", a response from an organism (behaviour) "- R" and a stimulus following the response (reinforcement) "- S+". The one described above is called 'reinforcement contingency' and is the minimum unit for the study of operant behaviour (or voluntary behaviour, as opposed to the reflex behaviour studied by Pavlov). This means that the terms used in its definition have no independent meaning. Following the establishment of such a reinforcing contingency, it is observed that when in a certain context (i.e. in the presence of certain discriminative stimuli - SD) the response of the organism (behaviour - R) is followed by a reinforcing stimulus (reinforcer - S+), the result is an increase in the probability that, in the presence of the same context, the subject will emit the same response. Operant conditioning is therefore the basis of the learning and environmental adaptation process of living organisms. In the Darwinian sense, operant behaviour is selected by its consequences, enabling adaptation to the environment. In Skinner's view, the parallelism with the evolutionary mechanism is extremely clear: just as organisms are selected by their ability to adapt to the environment through reproduction, so the behaviour of organisms is selected by their ability to adapt to the environment through their consequences. To reduce the frequency of a behaviour, the reverse process is used: extinction. In the presence of a given context the release of the response will not be followed by the reinforcing stimulus. This decreases the probability of the behaviour being emitted. Note that the extinction process requires the presence of a phase in which the behaviour whose frequency is to be reduced or cancelled is emitted. In other words, it is not possible to extinguish a behaviour that is not emitted. Note the radical difference with the concept of punishment, which involves, following a certain behaviour, the emission of an aversive stimulus (painful, unpleasant). This procedure has the immediate effect of reducing the frequency of the punished behaviour, but not that of extinguishing it: the behaviour will remain present in the subject's behavioural repertoire. The reduction in the frequency of the behaviour itself will cease as the punishment ceases. According to Skinner, operant conditioning contrasts with Ivan Pavlov's response conditioning (also called classical conditioning or conditioned reflex) on the basis of the procedure used to carry out the conditioning and on the basis of the characteristics of the behaviour being conditioned. Operant conditioning operates according to the habit loop scheme: learned behaviours modify the environment

and are 'kept alive' by the responses they receive. Behaviours learned by classical conditioning, on the other hand, relate to reflexes, which are stimulated by the stimuli that precede them; thus, behaviours learned by classical conditioning are not 'maintained' by responses, but by the stimuli they receive. As regards the procedure followed, we observe that classical conditioning starts from the existence of a stimulus that produces an unconditioned reflex and, through the association of this stimulus with a neutral stimulus, transfers the capacity to elicit a response to the neutral stimulus which thus becomes a conditioned stimulus that provokes a conditioned reflex. The paradigm is therefore of the 'stimulus-response' type. In the case of operant conditioning, we start from a basic behavioural repertoire; in the presence of a certain context, a certain response is followed by a reinforcing stimulus. This increases the probability of issuing that response, in that context. The paradigm is therefore of the "Response-Stimulus" type. Example of an operant conditioning procedure. In a Skinnerbox, a pigeon or rat is given food when it presses a lever. Initially the toggle-pressing behaviour (R) has a low probability of release, but following the administration of food (S+) this probability increases rapidly. If lever pressing leads to feeding only in the presence of a light (SD), the emission probability of this response will be high in the presence of the light and lower in its absence. Note that turning on the light makes the release of the lever-press response more likely. This may sound like a behavioural structure similar to that of the conditioned reflex, but it is not. It is a different way of controlling behaviour from that of responding conditioning: the light does not cause a reflex, it makes a response more likely. With pigeons, Skinner showed that it was possible to 'shape' their behaviour using the reinforcement technique: if the pigeon hinted at a rotational movement, it was 'rewarded' with kibble distributions until a complete rotation was achieved [3,4].

Edward Tolman represented one of the many anomalous cases, in a certain sense divergent, within the behaviourist school, since he differentiated himself by accepting cognitivist and psychoanalytic ideas. Watson's clearly molecularist position risked leading the study of behaviour with simple muscle contractions and thus postponing the study of pure behaviour to physiology. For Tolman, behaviour must be molar and not molecular; it must not be limited to individual muscular or glandular responses. He takes into account the purpose and certain intervening processes between stimulus and response. Tolman is considered a precursor of cognitivism. Tolman believed in the existence of a 'psychological specific' defined by its 'molarity' (i.e. further non-decomposable). This 'specific' was not psychological, but behavioural, and was characterised by having emergent properties. For Tolman, the behaviour of a mouse pulling a string to approach food would still be defined by its motor components alone (e.g., contracting and extending its left paw, raising its head), but in this case we would have given a purely physiological description. To obtain a psychological description we would have to consider the emergent predicates of that mouse's behaviour, i.e. the fact that the behaviour reveals cognition and intentionality (i.e. it is goal-oriented). Tolman explained the problem of intentionality in behaviour empirically. Purpose

is descriptively present when at least one of the following conditions is present: constancy of the object-meta in spite of variations in adaptation to intervening obstacles; variation in the final direction corresponding to different positions of the object-meta; cessation of activity when a given objectmeta is removed. In these cases, the description of the mere behaviour would be unsatisfactory without the presence of the object-meta. Tolman therefore often mentions the role of intervening variables, recognising that an objective method can only define the dependent variable, in this case represented by behaviour, but from it it is possible to deduce the presence and characteristics of the mental intervening variables. In fact, by managing to define the values of the independent variables (stimuli) and the values of the actual behaviour (response), it is possible to deduce the intervening variables (properties that the subject attributes to the object, connections of purpose, capacity) which, as Tolman says, are objective entities, defined in terms of the functions "f" that connect them to the independent variables on the one hand and to the final behaviour on the other.

Clark Hull and his research group at Yale University have proposed a model of machine learning, but its theorisation is more complex than expected. In addition to the classic variables Stimulus and Response, Hull and collaborators have emphasised how other factors contribute to the consolidation of learning, such as: "Training": the fundamental role of expertise in the associations between stimulus and response; "Deterrents": the role played by distractors, which hinder learning; "Consolidators": factors that favour learning and consolidate the trace in the memory. According to Hull, learning is seen as a "mechanical device" that functions on the basis of a series of interactions between the parts, so as to create a coherent process. According to Hull's studies, the animal will emit a response when faced with a stimulus situation if the same response has proved useful in reducing the tension of a drive (e.g. hunger). No S-R relationship develops if there is not a physiological condition that generates a drive, a push to explore the environment. In Hull's conception the drive is an internal factor, a property of the organism; it is an intervening variable, a factor that is placed between the stimulus (independent variable) and the response (dependent variable).

One of the characteristic elements of behaviourism is its insistence on learning processes and the laws by which the individual acquires new skills and behaviour. For Miller and Dollard, the child acquires a tendency to imitate because it has been reinforced in its first imitative responses. Afterwards, this tendency assumes an increasing weight: the behaviour of potential models constitutes the suggestion for the emission of similar behaviours that the subject must already have in his repertoire. For Bandura, reinforcement, rather than in the phase of acquisition of responses, acts in the phase of their maintenance and in increasing the indices that describe their strength. In the behaviourist theory of social learning it is stressed that models and reinforcements can act not only to stimulate certain responses but also to inhibit them. A subject may also show himself socially inadequate because he does not possess sufficient social skills, as well as because he has learned

incorrect responses. In Staats' theory of social behaviour, particular importance is attached to emotional stimuli linked to emotional responses [4].

The 'cognitive-behavioural model', drawing on the basis of Aaron Beck's behaviourism and cognitivism, thus explains emotional distress through a complex relationship of thoughts (what we tell ourselves mentally), emotions/ body sensations and behaviour. The events and situations we experience can influence our emotions, but what we do and think in the present determines their intensity and duration. Each of us has typical ways of thinking and acting (cognitive schemas), based on the drive of innate motivational systems (hence cognitive - evolutionary) and learning within the first significant relationships, which can produce malaise and these are the target of intervention. Sometimes the intensity of suffering drives people to behaviours that may provide apparent and immediate relief but which turn out to be counterproductive and harmful in the long term (e.g. avoidance, alcohol and substance abuse, food restriction, withdrawal from social life, compulsive repetition of acts). On other occasions this emotional suffering, and the attempt to reduce it, has a profound effect on relationships with others, creating relationships of dependency or of continuous contrast and dissatisfaction that do not help to resolve the malaise. Thus the various disorders are seen as a dysfunctional, and sometimes unsuccessful, attempt to regulate emotions. From this it follows that the general aims of psychotherapy are: a) to identify styles of thought and behaviour that generate and maintain emotional malaise (to identify the parts of us that are activated in the various situations); b) to understand their origin in repeated relational failures (due to emotional nontuning in moments of need for safety and/or protection) with attachment figures (parents or those who cared for the person in the first years of life) and to resolve the resulting relational traumas that influence the present; c) learning to recognise them in the moments in which they are activated (also in the therapeutic relationship); d) validating and legitimising them for the function they have had (helping to manage suffering to the best of one's ability), modifying them and replacing them with more useful alternative thoughts and behaviours. Through these four stages, psychotherapy guides the patient towards a change that allows him/her to achieve personal goals, improve the quality of the relationship with others and reduce his/her own emotional suffering [5,6].

## Research objectives and methods

This research addresses the issue of personality profiles of subjects who, due to age and birth in the age of digitalisation and the internet, have been massively exposed to telematic content without extensive parental control. In this research, the subject is addressed to the psychopathological investigation of personalities [7], according to the PICI-1(TA) model [8-10].

The phases of the research were divided as follows:

1) Selection of the population sample, as specified in point 3 of the search.

- 2) Individual clinical interview.
- 3) Administration of the MMPI-II and PICI-1 to each population group.
- 4) Data processing following administration, in relation to data obtained from clinical interviews and the administration of the MMPI-II and PICI-1.

All participants were guaranteed anonymity and for persons under 18 years of age, specific authorisation has been requested from their parents or guardians recognised by the Court.

### **Setting and participants**

The requirements decided for the selection of the sample population are:

- 1) Age between 16 years and 24 years.
- 2) Residence or domicile on Italian territory for at least 2 year, regardless of nationality and/or citizenship.
- 3) Declaration of internet use from an early age, without constant parental supervision, with independent exposure to computer content of at least 2 hours per day.
- 4) Absence of psychopathological diagnosis of personality.

The selected setting, taking into account the protracted pandemic period (already in progress since the beginning of the present research), is the online platform via Skype and Videocall Whatsapp, both for the clinical interview and for the administration.

The present research work was carried out from May 2020 to December 2020.

The selected population sample is 975 participants, divided into four groups:

		Teen (cluster a)	Young adult (cluster b)	Adult (cluster c)	Total
	Age	16-18	19-21	22-24	16-24
0	Male	40	120	205	365
Sex	Female	82	224	304	610
Total		122	344	509	975

# Results, limits and possible conflicts of interest

Once the sample of the population that met the requirements had been selected (first stage), the participants were subjected individually to a clinical interview (second stage), aimed at obtaining as complete a personal and family history as possible. The following relevant data emerged from the clinical interview:

Exposure to telematic contents occurred, starting from the first years of age (6 months - 2 years), in 100% of the selected population sample, with an initial exposure in the constant presence of at least one of the two parents, to then decrease in the infantile age range (2 - 5 years) and become almost completely absent in the following age ranges (6 - 9 years and 10 - 12 years), circumstantial only to episodes of



control of chats and contacts of minor children, without a capillary verification in reference to the sites and contents visited by the same. From the age of 12 onwards (12 - 24 years) there is instead a total absence of parental control with respect to the sample of population selected for different reasons [11]: privacy needs manifested by minor children due to reaching an allegedly appropriate age; lack of time on the part of parents due to organisational and/or work requirements; overconfidence on the part of parents with respect to the behaviour of minor children; deletion of content viewed and visited by minor children before the parent could view it in turn; content archived and/or hidden without the parents' knowledge (unable to discover the fact); abusive and neglectful conduct by parents due to lack of interest; mirroring conduct by parents who abuse the telematic medium and social networks (in the absence of a psychopathological diagnosis).

- Dysfunctional parental behaviour with respect to the relationship with children was found in almost the whole sample [11]: 22.3% (218/975, psychological and/or physical abuse); 14.8% (145/975, neglect and/or disinterest, with a medium-high or high standard of living); 31.5% (307/975, neglect and/or disinterest, with a medium-high or high standard of living); 31.3% (305/975, excessive personal and/or professional commitments).
- The most visited contents, during the period of absence of parental control, are oriented towards the following themes entertainment created by teenagers or adults using language that is usually forced, vulgar, offensive and for a more adult audience, for various purposes, often commercial or review; entertainment created by teenagers or adults for the purpose of video games; cartoons and graphic videos, with language and behavioural expressions not suitable for a very young audience; chats/social-networking/dating sites where profiles are created and funny and witty photos and videos are posted; videos taken from films or graphic reconstructions on bloody, dangerous or socially reproachful themes. It was not possible to establish a % frequency because the same person usually viewed more than one of the most recurrent items on the list; however, it was possible to establish it in relation to the sexual gender of the research participant: the male gender of the selected population sample stated that between the ages of 6 and 16 (77%, 282/365) preferred entertainment created by boys or adults using language that is usually forced, vulgar, offensive and for an older audience, for different purposes, often commercial or review purposes, and entertainment created by boys or adults for video game purposes (more rarely chat and gory videos), while the male gender of the selected sample of the population stated that between 6 and 16 years old (78.2%, 477/610) preferred cartoons and graphic videos, with language and behavioural expressions not suitable for a very young audience, chats/social-networking/dating sites where they create profiles and post funny and witty photos and videos taken from films or graphic reconstructions on bloody, dangerous or socially reprehensible topics.
- The clinical interview and anamnestic reconstruction reveal very clear and sharp personality profiles [12-25]:

- The male gender of the selected sample of the population tends towards attitudes and behaviours limiting their own freedom and socialisation, makes an abusive use of internet and in general of the personal computer and of the mobile phone (which often reaches 8-10 hours a day, in defect of the study hours), complaining of attention deficit, obsessive and paranoid thoughts, listlessness, boredom and humour decline. Only 37.8% (138/365) lean towards open and social attitudes, with a marked narcissistic tendency and a strong inclination towards sadistic traits. Pornography is a relevant activity in the whole male sample if we evaluate as a parameter the use of pornographic videos and photos at least 3 times a week; 32,3% (119/365) use them at least once a day while 23,8% (87/365) use them more than once a day. These clinical signs are more marked in clusters A (teen) and B (young adult), while they tend to improve slightly (-20.5%, 43/205) in cluster C (adult) in those subjects engaged in educational and work activities.
- The female gender of the selected sample of the population tends towards uninhibited attitudes and behaviours of freedom and socialisation, makes an abusive use of the Internet and in general of the personal computer and mobile phone (which often reaches 6-8 hours a day, in defect of the study hours), complaining of attention deficits, obsessive and paranoid thoughts about their physical appearance, somatic and body dysmorphic symptoms (in some cases even leading to the need for surgery), listlessness, boredom, bipolar, borderline and narcissistic symptoms. Only 30.5% (187/610) are inclined towards attitudes of closure and fear in relationships and interpersonal relations of a sentimental and affective investment type, with a narcissistic tendency in any case and a strong inclination towards masochistic traits. Pornography is a relevant activity in almost all the female sample (87.2%, 532/610) if we evaluate as a parameter the use of pornographic videos and photos at least once a week. These clinical signs are more marked in clusters A (teen) and B (young adult), while they tend to improve markedly (-50.3%, 153/304) in cluster C (adult) in those subjects engaged in educational and work activities.
- The population sample selected denies having a previous psychopathological diagnosis and/or need for therapeutic intervention, despite the symptoms found and described in the anamnesis.

The third phase is dedicated to the administration of the MMPI-II and the PICI-1 (TA version). In the first case, the data emerged confirm what had already been noted during the clinical interview (presence of at least 65 correct points in the following scales, with at least 50% frequency):

The data from the PICI-1 (TA version) [2,3] were administered and analysed, as listed below:

The male population sample of cluster A singularly scored at least 5 dysfunctional traits among bipolar, schizoid and schizoaffective personality disorders, for 84.6% (309/365), thus obtaining a marked diagnosis of specific personality disorder. The remaining sample of the population however



#### Clinical Scale

Scale	Hs	D	Ну	Pd	Pa	Sc	Ma
Significance	Hypochondria	Depression	Hysteria	Psychopathic deviation	Paranoia	Schizophrenia	Hypomania
Frequency (m)	191/365	188/365	207/365	301/365	293/365	244/365	269/365
	(52.3%)	(51.5%)	(56.7%)	(82.4%)	(80.2%)	(66.6%)	(73.7%)
Frequency (f)	313/610	335/610	403/610	503/610	523/610	409/610	487/610
	(51.3%)	(54.9%)	(66%)	(82.4%)	(85.7%)	(67%)	(79.8%)

#### **Content Scales**

SCALE	ANX	DEP	ANG	CYN	ASP	SOD	FAM
Significance	Anxiety	Depression	Anger	Cynicism	Antisocial behaviour	Social discomfort	Family problems
Frequency (m)	314/365	192/365	246/365	235/365	270/365	279/365	308/365
	(86%)	(52.6%)	(67.4%)	(64.4%)	(74%)	(76.4%)	(84.4%)
Frequency (f)	576/610	314/610	598/610	576/610	535/610	521/610	546/610
	(94.4%)	(86%)	(98%)	(94.4%)	(87.7%)	(85.4%)	(89.5%)

obtained individually at least 4 dysfunctional traits among the masochistic, psychopathic, delusional, histrionic, narcissistic and borderline personality disorders. Common diagnoses above 50% include 50.9% (186/365) of paraphiliac disorder, 75.6% (276/365) of sleep-wake disorders and 90.1% (329/365) of behavioural addiction disorders (the largest being 'internet').

The female population sample singularly scored at least 5 dysfunctional traits among borderline, narcissistic and sadistic personality disorders, for 94.7% (578/610), thus obtaining a marked diagnosis of specific personality disorder. The remaining population sample, however, obtained individually at least 4 dysfunctional traits among the bipolar, paranoid, histrionic and psychopathic personality disorders. Common diagnoses above 50% include 50.6% (309/610) of nutrition disorders, 74.9% (457/610) of behavioural addiction disorders (the largest being 'internet') and 92.9% (567/610) of sleep-wake disorders.

The main limitations of the research is one: the PICI-1 is not yet standardised psychometric instruments but are proposed, despite the excellent results obtained and already published in international scientific journals [9,10].

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## Conclusions

The research on a population sample of 975 people demonstrated:

On the MMPI-II, they reported 51.8% on the hypochondria clinical scale, 53.2% on the depression scale, 62.2% on the hysteria scale, 66.8% on the schizophrenia scale, 76.7% on the hypomania scale, 82.4% on the psychopathic deviation scale and 83% on the paranoia scale. In relation to the content scales, the matter is different: if for the clinical scales the average is between very close values, for the content scales it is not possible to do so, since the activations in the male group are much lower than in the female group. And in fact: a) for the men's group the following is reported: 52.6% on the depression scale, 64.4% on the cynicism scale, 67.4% on the anger scale, 74% on the antisocial behaviour scale, 76.4%

on the social discomfort scale, 84.4% on the family problems scale and 86% on the anxiety scales; b) for the woman's group the following is reported: 85.4% on the social discomfort scale, 86% on the depression scale, 87.7% on the antisocial behaviour scale, 89.5 on the family problems scale, 94.4% on the anxiety and cynicism scales, and 98% on the anger scale.

On the PICI-1, the data are even more significant and expressive a precise psychopathological diagnosis of personality. The male population sample of cluster A singularly scored at least 5 dysfunctional traits among bipolar, schizoid and schizoaffective personality disorders, for 84.6% (309/365), thus obtaining a marked diagnosis of specific personality disorder. The remaining sample of the population however obtained individually at least 4 dysfunctional traits among the masochistic, psychopathic, delusional, histrionic, narcissistic and borderline personality disorders. Common diagnoses above 50% include 50.9% (186/365) of paraphiliac disorder, 75.6% (276/365) of sleep-wake disorders and 90.1% (329/365) of behavioural addiction disorders (the largest being 'internet'). The female population sample singularly scored at least 5 dysfunctional traits among borderline, narcissistic and sadistic personality disorders, for 94.7% (578/610), thus obtaining a marked diagnosis of specific personality disorder. The remaining population sample, however, obtained individually at least 4 dysfunctional traits among the bipolar, paranoid, histrionic and psychopathic personality disorders. Common diagnoses above 50% include 50.6% (309/610) of nutrition disorders, 74.9% (457/610) of behavioural addiction disorders (the largest being 'internet') and 92.9% (567/610) of sleep-wake disorders [26-39].

On the basis of these data, it is reasonable to state that 84.6% (of the selected male population sample) and 94.7% (of the selected male population sample) presents marked psychopathological traits. Specifically: for the male group, the dysfunctional traits refer individually, with at least 5 markings, to bipolar, schizoid, schizoaffective disorder, and with 4, to psychopathic, delusional, narcissistic, histrionic, masochistic and borderline disorder; for the female group, the dysfunctional traits refer individually, with at least 5 markings, to borderline, narcissistic and sadistic disorder, and with 4 markings, to bipolar, paranoid, histrionic and psychopathic disorder.

From this level of psychopathological morbidity one can easily deduce that the excessive overexposure to the use of the internet, without a capillary and specific parental control, in childhood and pre-adolescence, exposes the subject to acquire a series of behaviours learned through social-network and more generally on the internet, able to significantly modify the psychophysical growth of the person. If the learned behaviours are then acquired by third parties who manifest dysfunctional behaviours and conducts, because they are in turn the result of psychopathological conditions, the result is the acquisition of that dysfunctional behaviour as 'functional and not pathological', with all the consequences one can imagine. The behavioural mechanism, to simplify, is exactly the same as that of the offence of money laundering: one acquires a dysfunctional and maladaptive behaviour (as is the 'dirty' money in the offence of money laundering) to make it one's own and functional, to obtain one's own psychological benefit (as is the money after being 'cleaned' through the use of operations considered lawful); a psychological benefit that may be the satisfaction of a need, a necessity or a specific requirement (e.g. receiving attention using anger, attracting sexual attention from peers by using provocative attitudes and poses in the presence or through photography or videotaping, or maintaining a certain physical standard because it is socially accepted by using drugs or vomiting or food restriction practices). Let us make some examples that can definitively clarify, in synthesis, what has been expressed:

- If a child, let us suppose 7 years old, learns through the internet that she can obtain through violence and spite what she wants, she will use this dysfunctional behaviour to benefit from the hoped-for result, transforming it into a functional behaviour, since obtaining the benefit turns out to be the positive reinforcement, according to a behaviourist perspective. If this mechanism were to be repeated over the years, this girl, who has now become an adolescent, will dysfunctionally use emotions (such as anger) or emotional states (such as frustration) to obtain and receive attention, in order to achieve her goals, feeding her narcissistic and antisocial traits in a toxic way.
- If a pre-adolescent girl, let us suppose 11 years old, learns through the Internet that her body can be an economic resource, perhaps because her friends do it (who in turn have learned that behavioural model from those who profit from the body to favour the fashion and entertainment market), she will feed her personality in a dysfunctional way, (c) if a young girl of a certain age, who is still in the process of being formed, engages in maladaptive behaviour that can expose her to very serious personal and social risks, such as adopting excessively restrictive diets or wearing clothes in line with the latest fashions, thus encouraging the onset of eating disorders, anxiety and mood disorders and finally obsessive and somatic disorders.
- If a teenage girl, let's say 14 years old, learns through the internet that she can receive attention from men by using her body, by dressing provocatively or by exposing herself to sexually active behaviour, without being fully aware of all the

consequences, she will dysfunctionally feed her personality, which is in the process of being structured, with maladaptive behaviour that could expose her to very serious personal and social risks, such as having sex prematurely or without precautions, exposing oneself to the use of drugs or alcohol, or using deliberately aggressive, abusive and overbearing language, without even being fully aware of it, thus favouring the onset of disorders such as behavioural disorders, or even borderline, histrionic or narcissistic disorders, up to the impairment of the reality plane if the traumas suffered are capable of having a negative impact.

In view of the alarming results of this research, it seems obvious to provide free psychological support [5, 40] for all families, capable of correcting at an early stage certain dysfunctional behaviours that may have been learnt through unsafe surfing on the Internet, and free support for all young patients who need emotional literacy to correct certain dysfunctions before they take root in their personalities; likewise, it seems obvious to curb the viewing of certain contents which, due to their structure and function, are toxic to the quality of healthy psychophysical growth.

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