

Panic Disorder: attack of fear or acute attack of solitude? Convergences between Affective Neuroscience and phenomenological-Gestalt perspective

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ABSTRACT

There is consensus among scientists in considering Panic Attack (PA) as an exaggerated fear response triggered by intense activation of the amygdala and related Fear brain network. Current guidelines for treatment (*e.g.* National Institute of Health, NIH; National Institute for Clinical Excellence, NICE, 2011), that are based on this view, do not achieve satisfactory results: one-third of all treated patients report persistent PAs and other Panic Disorder (PD) symptoms, and several meta-analyses report the high likelihood of relapse. Here we review findings from Affective Neuroscience and clinical insights from a phenomenological-Gestalt perspective, putting into question the link between PD and activation of the Fear brain network. We propose an alternative hypothesis about PD etiology: PD is mainly connected to the Panic system, that is activated in situations of separation from affective support and overexposure to the environment. In our view, PA can be understood as an acute attack of solitude which is not adequately recognized by the patient due to the intervention of a dissociative component that makes it impossible to integrate all neuro-physiological responses activated by the Panic/Separation brain system within a coherent emotional feeling. This perspective can explain many evidences that otherwise remain isolated elements without a comprehensive frame: *i.e.*, the association with agoraphobia, the onset of PD during adolescence and young adult life, the need to be accompanied, the connection with air hunger and other respiratory anomalies, the efficacy of antidepressants and the lack of activation of the Hypothalamic-Pituitary-Adrenal (HPA) axe. We discuss future steps to test this hypothesis and the consequences for psychotherapeutic treatment.

Key words: Panic Disorder; Affective Neuroscience; Phenomenological-Gestalt perspective; Gestalt therapy.

Introduction

According to the DSM-5 (American Psychological Association (APA), 2009), Panic Disorder (PD) is char-

acterized by recurrent panic attacks, by consequent preoccupations about these attacks, and then by a complex behavioural reorganization around such worrying. The DSM-5 defines a Panic Attack (PA) as a discrete period of intense fear or discomfort that reaches its climax rapidly, together with a paroxysmal increase in strong autonomic arousal. PAs are generally accompanied by different somatic symptoms, such as palpitations, pounding or accelerated heart rate, sensation of shortness of breath or smothering (air hunger), sweating, trembling or shaking, nausea or abdominal distress, feelings of choking or chest pain, dizziness, unsteadiness, light-headedness or fainting. Moreover, PAs are also accompanied by psychic symptoms such as depersonalization (being detached from oneself), de-realization (feelings of unreality), fear of dying and fear of losing control or going crazy. In consequence of such symptoms, panic is often characterized by a sense of impending doom or catastrophe and a sense of urgent need to distance oneself.

The lifetime prevalence of PD in the population is high (de Jonge et al., 2016; *e.g.* 4.7% in the US, 1.9 in Western Europe) and PD patients typically experience work impairment, high unemployment rates, seek medical treatment more frequently and have more hospitalizations than people without PD (*e.g.* Markowitz, Weissman, Ouellette, Lish, & Klerman, 1989). Guidelines for treat-

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ment have been published by major health institute worldwide (e.g. NIH; NICE, 2011) and they are based on the pharmacological, psychological and combined treatments. The recommended treatment options have a significant evidence base: psychological therapy, medication and self-help have all been shown to be effective. As regards pharmacological treatment the elective drugs are antidepressants, even if APA proposes benzodiazepines as complementary medications for specific situations (APA, 2009). In particular, on the basis of numerous randomized controlled trials, APA recommends the use of a Selective Serotonin Reuptake Inhibitor (SSRI), Serotonin-Norepinephrine Reuptake Inhibitor (SNRI), Tricyclic Antidepressant (TCA), or Cognitive-Behavioural Therapy (CBT) as the initial treatment for panic disorder.

As regards psychological approaches meta-analyses indicate that, although CBT shows the largest evidence base, other approaches have also showed significant positive short-term effects (e.g., psychodynamic therapies) (APA, 2009; Furukawa, Watanabe, & Churchill, 2006).

Despite the availability of guidelines indicating effective pharmacological, psychological and combined treatments, about one-third of all PD patients after treatment report persistent panic attacks and other PD symptoms, and several meta-analyses agree on highlighting the high likelihood of relapse in patients treated both using drugs or via psychosocial interventions, or with combined (medications and therapy) approaches (Batelaan et al, 2017; Nardi et al., 2016). These unsatisfactory outcomes with respect to stability of therapy effects indicate the need for further theoretical investigation into the etiology of the disorder that in turn could lead to the development of more effective, especially on the long-term, therapeutic approaches. Therefore, the aim of this study is to present converging findings about PD origin and treatment coming from two different fields, Affective Neuroscience and a phenomenological-Gestalt approach, and to propose an alternative hypothesis about the PD etiology and possible effective treatment.¹

Affective Neuroscience is a discipline founded by Jaak Panksepp (1998) and is now very popular among clinical psychologists and psychiatrists for its contribution to understanding human psychopathology and in developing new therapeutic strategies to mental disorders (Panksepp, 2004; Panksepp & Biven, 2012). Combining animal and human experimental investigations, Panksepp and his collaborators identified the existence of seven basic Emotional Systems in the brain of mammals that play a central role in the organization of human personality (Davis & Panksepp, 2011; Panksepp & Biven, 2012; Montag et al., 2016).

The phenomenological approach to psychopathology carefully explores the patient's subjective experience, the ways in which it emerges and is constituted (Jaspers, 1963; Minkowski, 1927; Binswanger, 1963; Borgna, 1988; Francesetti, Gecele, & Roubal, 2013; Zahavi,

2018). Gestalt psychotherapy is a phenomenological approach that explores the processes of experiences as they emerge in the therapeutic meeting. It focuses on both the patient's and the therapist's subjective experience and on the processes of co-creation in the therapeutic situation. Gestalt Therapy is an experiential, existential and relational approach that gives value to the mutual bodily processes of affective co-regulation between the patient and the therapist (Perls, Hefferline, & Goodman, 1951; Jacobs & Hycner, 2009; Philippson, 2009; Spagnuolo Lobb, 2013; Robine, 2016; Bloom, 2009; Bloom, 2019; Francesetti, 2019a; 2019b; Francesetti & Griffero, 2019). Both the Affective Neuroscience and phenomenological-Gestalt approach share the relevance given to subjective experience and, more specifically, to emotional feelings, that are considered the fundamental core of all mental processes (Alcaro, Carta, & Panksepp, 2017). Moreover, as we will briefly show in the following pages, they also share a common view on PD that differs from the dominant perspective, giving the emotional experience of being abandoned/left alone a central role in the manifestation and in the etiology of PAs.

Is panic an intense attack of fear?

Current approaches usually consider panic attack as an exaggerated and inappropriate fear response (Clark, 1986; Casey, Oei, & Newcombe, 2004) triggered by intense activation of the amygdala and the related Fear brain network² (McNally, Otto, Yap, Pollack, & Hornig, 1999; Windmann, 1998; Gorman, Kent, Sullivan, & Coplan, 2000; LeDoux, 2015; Hamm et al., 2016). According to this perspective, current psychotherapeutic interventions (especially CBT) are aimed at reducing the patient's fear (and anxiety) sensitivity, by de-conditioning procedures, correcting maladaptive thoughts, improving self-esteem, etc. (Barlow, Gorman, Shear, & Woods, 2000; Gallagher et al., 2013; Yang, Kircher, & Straube, 2014).

However, although psychotherapeutic treatments that focus exclusively on FEAR de-sensitization are very effec-

¹ The first idea of writing this paper came up in October 2016, during the Conference of the FIAP (Italian Federation of the Associations of Psychotherapy). In that occasion Jaak Panksepp and author discussed their perspectives on panic disorder and decided to develop further their convergences. Very sadly Panksepp passed away in April 2017, so we couldn't write this paper together, but the inspiration of it comes from that first meeting. We want to acknowledge his contribution to this paper and to express our gratitude to him.

² Being the most studied brain circuitry of the mammalian brain, the Fear system is mainly located within central and lateral amygdala, medial hypothalamus and dorsal periaqueductal gray, and uses glutamate, cholecystokinin, corticotropin releasing factor, and diazepam binding inhibitor as the main neurotransmitters/neuromodulators of its intrinsic network (Panksepp & Biven, 2012; LeDoux, 2015). It is also well known that both pharmacological and psychotherapeutic interventions reduce anxiety, phobias and other fear-dependent symptoms, by reducing neural excitability within the Fear brain system.

tive in correcting rapidly some secondary manifestation of PD, such as the spiralling increase in anxiety after the first episode, they do not guarantee good outcomes over the long term (Bakker, 2001; Durham et al., 2005). Moreover, since the work of Donald Klein in the early 60s, it is well known that the benzodiazepine-type antianxiety agents (Librium, Valium, etc.) have little effect on the incidence of panic, while antidepressants are more effective in quelling such attacks (Klein & Fink, 1962). These evidences bring into question the conviction that panic is simply an excessive and uncontrolled fear reaction.

Other doubts come from the evidence that panic attacks differ from Cannon's emergency fear response (Cannon, 1920) and Selye's General Alarm Syndrome (Selye, 1956) in two important psycho-physiological aspects. First of all, panic is characterized by the prominence of intense air hunger, that rarely occurs in acute, external-danger initiated fear (Klein, 1993; Preter & Klein, 1998). Moreover, contrary to fear, panic is accompanied by the lack (possibly suppression) of Hypothalamic-Pituitary-Adrenal (HPA) activation. Indeed, tachycardia and other forms of psychophysiological activation during panic are produced by vagal (parasympathetic) withdrawal rather than sympathetic arousal (Preter & Klein, 2008).

In accordance with such evidence, the exploration of patients' experience through a phenomenological-Gestalt analysis (Francesetti, 2007; Francesetti et al., 2013) indicates that fear - even though overwhelming and predominating in patient's narratives - is not the first event in the acute attack. Indeed, the very moment of the attack is characterized by the actual experience of dying or of becoming crazy, perceived as a bodily discomfort; then - immediately after - the fear of death or the fear of craziness emerges. After the first attack, these fears, and the fear of other attacks, become the main narrative. But patients say that during the attack the experience is actually of dying or of becoming crazy, and then they become terrified by this. As an evidence of this sequence, we can observe that patients go to the emergency room or to the general practitioner in order to treat the acute physical symptomatology and not to a psychologist in order to seek help for their fear. In this perspective, the fear is the major overwhelming event in the phenomenology of the panic disorder, but it is secondary to the experience of dying or of becoming crazy, emerging as a bodily discomfort in the panic attack. This phenomenological observation is in line with the literature indicating that interoceptive awareness is central in these patients (Craig, 2003): they are continuously detecting the variability of each situation according to a bodily centred system of orientation (Lorenzini & Sassaroli, 1987; Guidano, 1991; Arciero and Bondolfi, 2009). These patients are able to mentalize fear - to recognize and express it - but they are not able to mentalize the bodily signals indicating the lack of affective mediation in a situation of overexposure (Fonagy & Target,

1997). They are not able to mentalize these bodily signals as feelings connected to the need for another who enters in an affective co-regulation of this strong discomfort (Shore, 2003). These feelings are not mentalized as loneliness at the beginning and they emerge only during the process of therapy.³ To consider panic disorder as a complex clinical experience implying an unmentalized solitude is the thesis of this paper. It is supported by some research and clinical findings and it can orient the therapeutic interventions with this population.

Panic and the experience of being overexposed without affective mediation

The etymology of 'panic' refers to Greek mythology: to Pan, the god half man and half goat. According to Greek tradition, Pan lives in wild places and forests and he causes terror to lonely wayfarer. He is also responsible for nightmares that suddenly wake the sleepers during the night. His history is very interesting: Pan's mother, when pregnant, went alone into the forest in order to give birth to her baby. But when she did so, and was about to take him in her arms, she saw that he was a monster, half a baby and half a goat. Terrified, she ran away and left the new-born Pan alone in the forest, exposed to the world without the necessary mediation of his mother and of a shelter (Homeric Hymn 19 to Pan).

The link that the mythology establishes between terror and loneliness has surprising similarities with clinical and epidemiological evidence. In their clinical study with hospitalized agoraphobics, Klein and Flink (1962) showed that patients suffering from PD reported severe early separation anxiety that often-prevented school attendance in childhood. This result was replicated by specific longitudinal studies of the same individuals confirming the relationship between PD (and agoraphobia) and childhood Separation Anxiety Disorder (SAD) (Klein 1993, 1995; Kossowsky et al., 2013). Moreover, recent twin studies also demonstrated a common genetic diathesis for childhood separation anxiety disorder and adult onset panic attacks (Robertson-Nay et al., 2012).

Since the work of Klein and Fink, the hypothesis of a connection between PD and separation distress received some attention and it has been eventually confirmed by successive research studies (e.g. Raskin, Peeke, Dickman & Pinsker, 1982; Rizq, 2002). Epidemiological studies show that panic disorder's onset occurs from adolescence up to age 35 (DSM 5). This phase of life is characterized by the processes of separation from the familiar belong-

³ A phenomenological inquiry requires an intersubjective exploration that is not only intended to describe what is already present as a first narrative, but also to support the emergence of what is implied in the considered experience. Indeed, by definition, a phenomenon is what appears when we stay, pause and wait close to it (Giorgi, 2009).

ing, the movement towards the world and towards an increasing autonomy. Moreover, the onset of PD in adults is often preceded by actual separation, loss, bereavement, or other events implying emotional or physical separation from a significant figure⁴ (Roy-Byrne, Geraci, & Uhde, 1986; Jacobs et al., 1990; Faravelli & Pallanti, 1989; Kaunonen, Paivi, Paunonen, & Erjanti, 2000; Klein, 1993; Venturello, Barzega, Maina, & Bogetto, 2002; Milrod, Leon, & Shear, 2004).

The phenomenological-Gestalt exploration confirms that at the onset of panic disorder there is typically a significant passage of separation that is usually underestimated by patients: ‘I went to the university and I left my group of friends’; ‘I moved to work in another city and my girlfriend stopped the relationship with me’; ‘I got a new and better position in the company and I went to live by myself’; ‘I finished university, I started to work and my sister went to study abroad’. When these changes are explored, we found the experience of feeling more exposed to the world, outside the familiar environment, with less mediation offered by the previous belongings and relationships. Bereavement seems to be a condition of vulnerability to panic disorder when the person who is lost was a significant one in the process of mediation between the patient and their environment. A patient says ‘My grandmother died one year before the first panic attack. I didn’t pay attention to this, I was already living quite far from her, she had her life and I had mine. But now I understand something different: I grew up with her, since my parents were divorced and were busy at work. She was my protection in my life. Now I can feel the pain and sadness, I miss her tremendously’.

The connection between panic and the loneliness of being overexposed to the environment provides meaning to at least four elements of the disorder, which might otherwise be difficult to understand: the experience of suffocating, agoraphobia, the difficulty in being alone (expressed also by the need to be accompanied and the limitations in movements) and the moment of the onset. The first element will be discussed in the next paragraph since it is directly connected to the neurological pathways implicated in panic. The second, agoraphobia (from Greek, *agorà*: square, and *phobia*: fear), is very often associated with panic: being in the middle of a square is the iconic situation of being overexposed to the world without enough mediation. The third, the need to be accompanied, sometime so strong that it makes it impossible to move from home autonomously, is the expression of the need for a mediation between the patient and the world in order not to be alone and overexposed. The fourth element is the moment of onset of PD: adolescence and young adult life. This phase is characterized by a movement of separation from the safer familiar context towards the outside world, with the risk of feeling overexposed to the environment (the movement from *Oikos* to *Polis*, Francesetti, 2007; Francesetti et al., 2013).

It has also been suggested by cognitive models that PD is related to a conflict between two opposite tendencies, the need for affective proximity and the refusal to be constricted within enduring bonds (Lorenzini & Sassaroli 1987; Guidano, 1991; Macaurelle, 2003). In accordance with this idea, PD’s onset is sometimes related to the beginning of a marriage, indicating that such an important life change may activate the anxiety of being restricted (Macaurelle, 2003). However, it is also plausible that the marriage also implies the experience of separation from previous familiar bonds, as well as from a lifestyle centred on autonomy and individual freedom (see paragraph 5). Moreover, the phenomenological inquiry reveals that the reluctance to be restricted within enduring bonds is usually better represented in conscious thoughts of patients, while the anxiety of solitude is usually underestimated or neglected altogether (paragraph 5). This evidence indicates that PD symptoms, especially bodily symptoms, may represent an alternative (somatic) way of expressing a refused emotional experience that plays a central role in the actual subjective conflict.

These elements bring us to the conclusion that to consider the panic simply as an attack of fear does not take into account a number of important clinical elements. It seems more accurate to consider panic disorder as a complex clinical situation that emerges from the experience of feeling too exposed to the world without a sufficient relational protection that provides a mediation with the world. The fear comes just after the very immediate experience of dying or becoming crazy, in a moment of overexposure and then it is mainly generated by the fear that the acute attack can happen again. Dying or becoming crazy are the two existential situations of radical separation from belonging to the human community.

From these considerations, we propose considering panic disorder as a kind of separation anxiety rather than a generic fear, and in this frame as an acute attack of solitude. Let’s go now to discuss some neurological data and then we will connect them to clinical experiences.

The Panic/Separation System

Panksepp’s neuro-ethological studies have demonstrated that mammals are provided with two separated brain alarm systems (Panksepp & Biven, 2012). The first, that has been called the Fear System, is activated by the perception of an external threat. The other, that has been called the Panic/Separation system, is maximally activated when the individual is separated from a fundamental social/affective support, such as when young pups are distanced from their mother, and driven to active protest, such as crying in humans and distress vocalizations in other mammals

⁴ It has also been shown that the presence of separation anxiety in adults influences panic symptom severity and impairments in the quality of life (Pini et al., 2014).

(Nelson & Panksepp, 1988; Panksepp, 1998). The separation alarm signal serves as a biologic leash for the increasingly mobile, but helpless infant who continually checks for the mother's presence, becomes acutely distressed on discovering her absence, and immediately attempts to elicit retrieval by crying.⁵ However, if the caregiver does not come back, the separation calls gradually stop and the infant enters into an inhibitory behavioural state characterized by retirement and isolation from the external world (Bowlby, 1969). At the subjective level, while the first phase (protest) is accompanied by feelings of intense discomfort, the second phase (despair) is characterized by the feeling of sadness (Bowlby, 1969; Panksepp, 1998).

The Panic/Separation System is characterized by neuroanatomical and neurochemical pathways distinct from the Fear system. If the Fear system is mainly centered on the amygdala, medial hypothalamus and dorsal periaqueductal gray, the Panic System is mainly located within the anterior cingulate, the bed nucleus of the stria terminalis, the dorso-medial thalamus, the preoptic area, and the periaqueductal gray.⁶ Being the key neuromodulators of socio-affiliative interactions, endogenous opioids, oxytocin, and prolactin are the main neurochemicals of the Panic system (Panksepp & Biven, 2012; Nelson & Panksepp, 1998). In particular, the endogenous opioid system seems to indicate a main role, since animal studies have revealed that the administration of opioids is the most powerful inhibitor of distress vocalizations elicited by young pups when they have been separated from their mother (Nelson & Panksepp, 1988).

The Panic/Separation brain system controls a series of neurophysiologic and neuroendocrine responses that modify the internal state of the body, such as respiration, heartbeat, pain sensitivity, etc. This fact may explain why panic attacks are characterized by physical symptoms, acute and inexplicable, that interrupt the continuity of usual experience and are experienced as a catastrophic event (dying or losing one's mind).

Of all the many kinds of somatic manifestations that characterize PAs, those associated with the experience of air-hunger and suffocation are probably the most frequent and intense. Interestingly, physiological investigations revealed that one prominent characteristic of the panic attack and subthreshold panic-related anxiety is respiratory dysregulation and chaotic breathing, while air hunger and chronic sighing outside of the acute attack are hallmarks of panic (Klein, 1993; Preter & Klein, 2008). Moreover, panic disorder patients show an excessive reactivity to blind hypercapnic and/or hypoxic conditions⁷ (Griez, Colasanti, van Diest, Salamon, & Schruers 2007; Esquivel, Schruers, Maddock Colasanti, & Griez, 2010; Leibold et al., 2013; Beck, Shipherd, & Read, 1999; Beck, Shipherd, & Ohtake, 2000). All such evidence suggested the hypothesis that panic attacks may be interpreted as a "false suffocation alarm signal" and that PD patients suffer from a chronic Suffocation anxiety (Klein, 1993).

The connection between panic and suffocation received an important confirmation by the evidence that a dysfunction in the endogenous opioid system may explain the respiratory anomalies in panic disorder patients⁸ (Preter & Klein, 2008). Moreover, it has been evidenced

⁵ Specifically, the separation call, intended to maintain mother-offspring contact, has been suggested to be the most ancient form of mammal communication (Battaglia, 2015). The emergence of a Panic/Separation Distress emotional drive, together with Care/nursing and Play, marked the emergence of mammals from mammal-like reptiles, and led to the evolution of complex social and cognitive skills, as well as to the emergence of the distinctively mammalian brain structures of the cingulate cortex and the so-called thalamo-cingulate division (MacLean, 1985; Panksepp, 1998). As noted by Battaglia, «the advent of greater brain cellular mass—like that associated with the emergence of the neopallium—allowed paleomammals to attain greater brain plasticity and extend the array of learning capacities, which are in turn basic ingredients of individual variation in behavior. All forms of learning, however, require time for practicing, as practice implies errors, and correction and consolidation of newly acquired skills. In a growing child this generates dependence on parental care in order to ensure safety, nourishment, and protection. It can thus be expected that the wider the array and plasticity of behavioral repertoire in a species, the longer the time needed for learning and practicing, and the more protracted the dependence on parental care. [...] The progressive extension of a period of dependence from maternal care that can be attributed to an increasingly complex, and thus immature, brain at birth, probably prepared the ground for the development and maintenance of SA as an element of reciprocal regulation of the infant-mother bond, and a moderator between the child's cycles of exploration of the environment, learning, and safe return to the mother» (from Battaglia, 2015).

⁶ In accordance with the neuroanatomical distinction between fear and Panic brain circuitries, the analysis of neurologic patients demonstrated that individuals with lesions of the amygdala show a marked absence of fear during exposure to fear-provoking stimuli and do not condition to aversive stimuli. However, they show common panic reactions when they are experimentally exposed to anoxic conditions, suggesting that amygdalocentric Fear system is not necessary to trigger a panic attack (Feinstein et al., 2013).

⁷ Indeed, experimental studies have also shown that the panic attack can be reliably incited in laboratory settings by specific chemical challenges, using intravenous lactate infusion and carbon dioxide inhalation (Liebowitz et al., 1984; Gorman et al., 1984; Papp, Klein, Gorman, 1993; Klein, 1993). However, while normal controls or patients with other anxiety disorders rarely show such reactivity (i.e., progress to a full-blown panic attack), higher concentrations of inhaled CO₂ are highly aversive and can produce respiratory panic symptomatology in a dose-dependent fashion (Griez et al., 2007; Esquivel et al., 2010; Leibold et al., 2013). Beck et al. (1999; 2000) showed that panic patients respond with increased panic symptoms not only to CO₂ inhalation, but also to normocapnic hypoxia. This makes it possible to integrate separation anxiety disorder, CO₂ and lactate hypersensitivity, and a range of respiratory phenomena and pathology with Panic Disorder.

⁸ Indeed, naloxone infusion (ranging from an initial 0.5mg/kg to a maximum of 2mg/kg) followed by lactate (N+L), caused significant tidal volume increments similar to those observed during clinical and lactate induced panic attacks in 8 of 12 normal subjects, supporting the hypothesis that opioidergic deficiency might be necessary for lactate to produce a marked increase in tidal volume in normal subjects (Sinha, Goetz, & Klein, 2007). Moreover, «normal subjects, usually relatively insensitive to the tidal volume effects of lactate infusion, [...] given opioid antagonist pretreatment, developed tidal volume and respiratory rate increments resembling those occurring in both spontaneous clinical panic attacks and in panic patients who panic during lactate infusions» (Preter et al., 2011).

that separations and losses (*i.e.* parental death, parental separation or divorce) affect the functionality of the endogenous opioid system, and the deficit of the opioid system may explain separation anxiety, respiratory anomalies and panic disorder⁹ (Preter et al., 2011).

Finally, the evidence showing that the endogenous opioid system of the brain co-regulates breathing as well as separation/distress behaviours fits with the neuro-evolutionary hypothesis formulated by Stephen Porges (2007; 2011), who underlined the function of the cranial nerves and muscles for expressing separation distress vocalizations evolved from the primitive gill arches that extract oxygen from water (Porges, 2007).

Panic and dissociation

If suffocation and other bodily symptoms of panic attacks may be explained by the neurophysiologic responses induced by the Panic/Separation brain system, it remains to be explained why PD patients do not recognize that they are suffering from separation distress. Indeed, PD patients usually do not report feelings of social or affective discomfort, and they do not recognize any psychological cause or meaning for their attacks.

In order to answer that question, it is important to consider that there is a distinction between the functional emotion state ('the emotion state') and its conscious experience ('the experience of the emotion') (Adolphs, 2017). Even if emotion states, emotion experiences, and emotion concepts usually occur together in healthy adult humans, they can also be dissociated. In our view, this kind of dissociation could be present in PD patients, who could experience separation distress as an emotion state, without experiencing it in a conscious way. In line with this view, recent experimental studies have shown that PD patients often report childhood traumatic experiences (Zou et al., 2016), that lead to a pathological form of dissociation in adulthood (Majohr et al., 2011). As a consequence, adult PD patients tend to be alexithymic, having difficulty in realizing, recognizing, discriminating, and expressing emotional feelings (Cox, Swinson, Shulman, & Bourdeau, 1995; Iancu, Dannon, Poreh, Lepkifker, & Grunhaus, 2001; Marchesi, Fontò, Balista, Cimmino, & Maggini, 2005; Cucchi et al., 2012; Izci et al., 2014). Moreover, they also tend to be less cooperative and confident with other people (Wachleski et al., 2008; Izci et al., 2014). Also related to this point, it is worth noting that literature findings support the connection between separation anxiety experienced at early age and the development of difficulties in recognizing (being aware of) affective states (*e.g.*, Mason, Tyson, Jones and Potts, 2005; Joukamaa, et al. 2003) and that alexithymic traits have been found to be more pronounced in individuals who reported more severe symptoms of separation anxiety during childhood (Troisi, D'Argenio, Peracchio, & Petti, 2001).

In accordance with such scientific evidence, clinical observation shows that patients suffering from PD typically present a highly autonomous and independent rela-

tional style, not inclined to ask for help and to rely upon others, hardly able to express their affective needs (Francesetti, 2007; Francesetti et al., 2013). This relational style makes the disorder even more upsetting since the patient is unaccustomed to the need for help and support. The mentalisation of the need for support and closeness, even if it is strongly present, is difficult and people suffering from panic disorder tend not to behave very cooperatively.

If PD patients suffer from an emotional dissociation and tend to be alexithymic, the feeling of imminent death or breakdown may be viewed as the expression of a somatic activation that overwhelms the containment capacity of the subject (Strubbe & Vanheule, 2014) and that is then experienced in an "unmentalized" and somatoform condition (Busch & Sandberg, 2014). Indeed, if the Panic/Separation system activates a series of neurophysiologic and neuroendocrine responses that modify respiration, heart beating, pain sensitivity, etc., the failure in integrating such changes within a coherent and recognizable subjective emotional state may lead to the experience of a catastrophic and unintelligible somatic breakdown.

Some clinical evidence

As we observed before, during the panic attack the experience is not the fear of dying but the actual experience of dying. This experience causes the fear of dying and the medical feedback usually confirms that 'it is only fear, you are not dying'. However, for the patient to reach the understanding that it is fear usually takes some time and elaboration: at that point the patient can say 'I know that I am not dying, it is my attack, it is fear, I know it'. This awareness usually comes later and brings a significant clinical relief (Rovetto, 2003; Francesetti, 2007).

Returning to therapy and exploration, gradually another emotional dimension emerges: the feeling of loneliness (Meltzer et al., 2013). These feelings usually are not easily accessible and it takes some time before we can meet them. Often, for a long time, the patient doesn't feel that loneliness is a relevant feeling in their life and the therapist is the only one who feels it, as a feeling of being alone without being able to give sense to it. The kind of solitude that the patient gradually discovers is quite specific: the experience of being alone, overexposed to the world, without a sufficient protective mediation. In the words of a patient, deeply touched by this discovery: 'I discovered that the point is not that I am scared of dying.

⁹ The role of endogenous opioid in panic disorder and suffocation alarm receive a confirmation in animal studies (Moreira et al., 2013). Graeff (2012), studying an animal model of panic disorder found that the inhibitory action of serotonin is connected with activation of endogenous opioids in the periaqueductal gray (PAG). Schenberg and colleagues (Schimitel et al., 2012) suggest «[the PAG] harbors an anoxia-sensitive suffocation alarm system».

The point is that I am so alone that I could die. Even from forever having been alone in my life.'

Usually, the emotions that emerge along with the discovery of the solitude are sadness and anger: 'I feel a sadness that I didn't know I have, I don't know why I am crying, nothing really serious happened...'; 'Now I realize that I have always been alone, it is sad... I don't know how it was possible for me not to feel it...'; 'I remember now how good I was at school... I was just a little girl but I never cried when I had to leave my parents for some days during the outdoor activities. Many children were crying, but I never did. For my teacher, I was a model for all of them. Now, remembering that, I am crying... it is so sad...'; 'Why did I have to be so good? Why couldn't I cry like the others? Of course, I couldn't: my mother would have been even colder than usual and would have humiliated me, and my father would have agreed with her. Now I am very angry'. A crucial phenomenon is that the emergence of loneliness is a difficult passage, which requires time and relational support: at the beginning of the therapy the solitude is not only not perceived, but there is a kind of affective distance or reactivity to it, as if it is a dissociated area of experience. Only gradually and through a careful therapeutic exploration can the patient feel, recognize, legitimate and finally mentalize it: 'I never thought that I could feel any kind of solitude, I have always been a point of reference to my friends, the person to rely upon... Until the panic, I was autonomous, but afterwards I couldn't move without somebody being with me... but I didn't understand that yet. Now, finally, I feel that I need the closeness and the hug of somebody... It costs me a great deal to admit this, even though I don't know why...'

Conclusions

On the basis of research and clinical explorations, we propose to consider the PD a complex clinical situation that emerges from an experience of dissociated and unmetallized loneliness, similar to separation distress and characterized by an overexposure to the world without affective mediation. The alarm signal recruited by the Panic/Separation system is not subjectively recognized and mentalized by PD patients and consequently is expressed in a somatic form. Psychotherapeutic interventions should gradually help the patient to increase their awareness of the hidden emotional drive expressed by PAs and to recognize the importance of relational and affective bounds for their mental wellbeing.

This perspective has some relevant implications for psychotherapy:

- Even though the fear is the overwhelming and dazzling emotion in the patient's experience, the themes connected to solitude and to overexposure to the world should be gradually and carefully considered and explored. Since the feelings and emotions connected to

this theme are often dissociated, the therapist can be the first, for some considerable time, to feel, recognize and legitimate them during the sessions;

- Even though the onset of the PD is usually experienced without any connection to life events, it is usually connected to separation processes, typically a life passage towards more autonomy (during adolescence or young adult life) or a loss of somebody relevant in mediating between the patient and the world;
- Even though patients ask to regain their autonomy rapidly, they should be supported to move towards the experience of relational belonging more than – or along with – a movement towards independence. The therapeutic relationship can be an affective mediation between the patient and the world and the therapeutic belonging can be one of the most healing experiences for these patients.

We could wonder why, despite the impressive number of clues in research and in clinical work, PD has been considered for decades to be an acute attack of fear without recognizing the experience of loneliness that we claim to be crucial in this disorder. This is probably connected to the patient's dissociation that protects the feeling of loneliness from being perceived and that also influences the therapist during the meeting (Francesetti, 2015; 2019a; 2019c; Roubal, 2019; Stern, 2015). Furthermore, we suggest that it can also be connected to a wider dissociation characterizing our social field. Loneliness seems to be a central element in our Western societies, but, even though central, it is not fully integrated in our culture (Lasch, 1978; Bauman, 2002; Cacioppo & Patrick, 2008; Rosa, 2010; Bollas, 2018). Often, it is considered to be the experience of people who are not sufficiently integrated into society, the losers.

The curious forgetfulness of loneliness in PD could be the result of both an individual pressure (a dissociated feeling in the personal biography) and of a social pressure (a dissociated need for relational and intimate bonds), in which both the therapist and the patient are deeply involved. This hypothesis is compatible with cross-cultural and epidemiological research, that highlighted the presence of relevant differences in the prevalence rates of PD in different countries (*e.g.* Kessler et al., 2007), finding quite a strong positive link between societal values such as affective autonomy and the rates and lifetime risk of PD (Heim, Wegmann, & Maercker, 2017). The myth of Pan seems to provide a narrative frame to an experience that expresses both an individual and a social condition: a dissociated solitude and the need for a relational bond. The fear, in this perspective, can be understood as the expression of an acute attack of solitude.

Future steps

In order to explore the relationships between unmetallized loneliness and PD further empirical studies are needed. Our research group plan to put the hypothesis of

a causal connection between unmentalized loneliness and PD to a test, by studying different interrelated phenomena. First, we aim at testing if there are significant differences between perceived levels of affective autonomy, social connectedness, and sense of belonging among individuals at different phases of the PD, *i.e.* onset, during treatment, following the conclusion of therapy. In addition, we aim at improving our knowledge of the direct antecedents of PD onset. It is already known that the onset of PD is often preceded by life events such as grief, loss of a partner, or role transitions (Klauke, Deckert, Reif, Pauli, & Domschke, 2010). We intend to test our hypothesis about the connection between unmentalized loneliness and PD by means of a mixed methods approach, using both a qualitative and a quantitative methodology (*i.e.* analyzing survey data and semi-structured interviews). We expect to find that individuals with PD report a higher frequency of life events characterized by potential overexposure to the world in the months/weeks preceding the first panic attacks.

To consider PA as an attack of fear or as an attack of denied solitude deeply affects the therapeutic approach, it opens a new understanding of the therapeutic journey and may improve the efficacy of psychotherapy with this population.

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