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Affectivity: a formalization attempt from psychoanalysis

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Abstract. After having provided a first synthetic overview of the various definitions of affectivity and related notions which have been given in modern and contemporary psychology, we shall see that psychoanalysis is the only psychological context able to provide a conceptual framework for a first possible formalization attempt of affectivity. In this first contribution, we introduce the basic notions of psychoanalysis related to affectivity, as a first step to build up a framework suitable to formalize affectivity for possible computational implementations.

1. A general overview of the main psychological conceptions of affectivity

Traditional psychopathology subdivides human psyche in three main parts: the knowledge sphere (comprehending perception, attention, memory, intelligence, thought, and turned to understanding external reality), the conation sphere (regarding will, decision and action) and the affective sphere (which concerns subjective psychic experiences evaluated according to the basic principle pleasure-displeasure). This division is only contrived and due simply to didactic aims, as these three main spheres of human psyche are closely related of each other. In particular, rational thought and sentiments are closely related, and as early Eugen Bleuler pointed out that any intellectual process implies a resonance of sentiments, and vice versa these latter may retrieve or arouse recalls guiding our thought, so affective and intellectual processes are two different aspects of the same psychic life¹. So, since Bleuler's work, the close relationship affect-intellect was well-known (De Giacomo 1972, Cap. 1; Sarteschi & Maggini 1982, Cap. 2, § VIII).

Nevertheless, even until up recent times, the above three main parts – in which human psyche has been subdivided – have been considered as separated of each other, and not rather as integrated of each other and reciprocally inseparable, as current psychology does. However, it has been Freudian psychoanalysis to have, for first, pointed out the crucial role played by affectivity, occurring in the irrational thought processes, for the development of the rational ones, the former being even more frequent than the latter (Miller 1993, Ch. 2, § 7.1). Freud considered a wider spectrum of affectivity as influencing decisively human psyche since childhood, comprehending new perspectives still not taken into consideration by cognitive psychology but which should provide a more complete view of child psyche compatible with recent trends of modern psychology, like *social cognition* and *metacognition* (Miller 1993, Ch. 2, § 7.1). Further, Robert Zajonc (1980; Zajonc & Markus, 1982) has distinguished between *cold* and *hot thoughts*, so claiming an independence between affect and cognition, but also that the former is stronger and precedes the latter (Zajonc, 1984). Some other theories assign a major role to cognition in emotionality, called *cognitive theories of emotion*, which state that emotions are not only due to reactions of autonomous nervous system but also to the attendance of cognitive mechanisms based on a interpretative processes that each individual works

¹ Bleuler pointed out as affective states may favourite associations corresponding to the basis of affectivity, that is to say, to the mood's tone. When this condition is particularly exalted, Bleuler speaks of *holothymia* (Sarteschi & Maggini 1982, Cap. 2, § VIII). Next studies have pointed out further the remarkable role played by emotions in integrating as well as disintegrating ideas in dependence on their nature (Bini & Bazzi 1971, Cap. V, § A)-d); Conti & Principe 1989, Parte V, Cap. 6). Also Jean Piaget pointed out the important role of emotions for cognitive processes, saying that emotions are the energy for behaviour (Miller 1993, Ch. 1, § 8.2).

out in dependence on that specific social-environmental context in which such an emotive state arises (Lindzey et al. 1975, Ch. 11; Oliverio 1982, Cap. 15; Oliverio Ferraris, 1980; Scherer et al. 1975, Ch. 2).

According to Freudian psychoanalysis, which has been the first psychological theory to highlight the fundamental importance of affectivity for human psyche, *affect* (*Affekt*) is one of the two main components of a (psychic) *drive*², the remaining one being the *representation*. So, any psychic drive has two main components: *representation* and *affect*. The latter undergoes three main mechanisms, namely: *i*) conversion of affects; *ii*) displacement of affect; *iii*) transformation of affect. Later, Freud defined affect as the subjective transposition of the quantity of instinctual energy. The *amount* (or *quote*) of *affect* (*Affektbetrag*) corresponds to the separation of the drive from the representation, so finding a new expression – proportional to its entity – through those processes that become, or may become, sensible to affectivity (Favrod, 1975; Galimberti, 2018). Psychoanalysis distinguishes between a *conscious affectivity* (which is the usual object of study of general psychology, referring to the awareness of lived subjective experiences) and an *unconscious affectivity*, not necessarily linked to mental representations and autonomous with respect to its possible various manifestations, so this latter type of affectivity (which may be identified with the amount of affect of above) may give rise to a new emotional expression not having any correlation with the original qualitatively affective state from which it arises (Giberti & Rossi 1996, Cap. 2, § V).

According to classical psychological tradition, *affective* phenomena are classified, in dependence on their intensity, duration and modality of rising, in *feelings* (or *sentiments*), *emotions* (and *passions*) and *mood*. Therefore, affectivity may be characterized either qualitatively (in regard to the basic opposition pleasure-displeasure) and quantitatively (in regard to the intensity of expression). Affectivity plays a central role for all the psychic life of any individual and, in normality conditions, should be adequately integrated with personality (Delay & Pichot 1965, Cap. VIII); it is furthermore two-way related closely with many other psychic functions (Benedetti 1969, Parte I, Cap. XVI, § I); Bini & Bazzi 1971, Cap. V, § A)-d)). To be precise, human psyche may be considered structured in three main strata hierarchically overlapped: the first basic stratum is that of vegetative and instinctual psychic functions, the phylogenetically oldest one, upon which relies the second stratum of lower psychic functions linked to temperament, basically having an affective nature, supporting the third and last stratum, that of upper psychic functions linked to character, phylogenetically the newest, relying on the previous two strata, mainly roles the consciousness acts. A normal psychic condition is provided by a right proportional intertwinement among these three strata, to reach an equilibrium between affects and thought, and between instincts and determinations of the will (De Giacomo 1972, Cap. 1).

Mood, as has been already said, is the basic vital affective tonality which permanently shapes, in a certain manner, the existence of any human being. It is the basal or ground state of affectivity. Kurt Schneider identified a *basis of mood* as well as a *background of mood*: the former refers to proper mood's tone, the constant colour of affectivity, which is deeply rooted in the human psyche, almost unconscious, but operating causally according to the adaptive regulation of instincts as acquired by each individual, while the latter is an affective state usually depending on the various contingent circumstances which may influence all the next emotive responses of the subject, but for a limited

² See next section for a deepening of this notion and the related concepts.

temporal range³; furthermore, the former may influence the latter in its emotional responses which depend also on cognitive factors as these orient toward pleasure or displeasure in regard to a same situation emotively stimulating (Giberti & Rossi, Cap. 2, § V; Sarteschi & Maggini 1982, Cap. 2, § VIII). In this sense, we may speak of a social component of an emotional state as it is determined by either the (unaware) activation of a physiological state and the social-cultural context in which it takes place so influencing cognitively the qualitative type of emotion (i.e., pleasing or displeasing). So, emotive sphere is influenced by social phenomena (Doise et al. 1978, Ch. 18) through the so-called *social cognition*, a social psychology construct (Miller 1993, Ch. 2, § 7.1; Palmonari et al. 2012, Cap. 1).

Emotions, as the final outcome of cause-effect phenomena with triggering events (Karl Jaspers), are affective states, associated to perceptions, which are rapidly reactive, much intense, with a rapid and sharp rising, influencing deeply almost all the psychic processes and behaviour, with the occurrence of somatic reactions. Some authors identify a few numbers of typical and fundamental emotions. *Passions* are emotions at a chronic level, that is, protracted in the time, consisting in a prolonged and intense persistence of an emotional state, often linked to a certain ideational complex, such that all the other psychic facts lost their vitality and interest (De Giacomo 1972, Cap. 1). Emotions are deemed to have ancestral nature, due to cerebral brain circuits rigidly programmed phylogenetically (Eibl-Eibesfeldt 2001, Cap. 2, § 2.2.5), and play a fundamental role for the life of every individual (Carlson 1977, Ch. 16).

Feelings are quite persistent, oriented⁴ nuclear components of affectivity, not having a transitory nature as emotions and passions, which go to bind to ideas gradually these come, like those of own Ego (i.e., the egoic feeling), mother, father, family, parents, society, nation, religion, ethic, etc⁵. So, feelings structure hierarchically along a scale ascending gradually ontogenetic evolution of an individual increases from a social-cultural stance⁶. Feelings basically are nothing but the affective resonance with which every individual does experience of her or his own bodily reality, her or his either personal and social psychological processes. Max Scheler distinguished among: *i*) sensations with affective charge (bodily localized and having sensorial nature); *ii*) somatic affective sensations (closely related to coenaesthesia and general vitality); *iii*) psychic feelings (regarding the Ego and having a reactive nature); *iv*) spiritual feelings (concerning spiritualistic dimension). Then, affective sensations *i*) and *ii*) are immediately preceded by an organic-bodily modification, and the feelings

³ The close relation between *basis of mood* and *background of mood*, with the high variability of the latter, is also responsible of a certain variability in the modulation of affectivity of each individual (Giberti & Rossi 1996, Cap. 2, § V).

⁴ That is, oriented towards an object (thing, person, situation, aim, etc.).

⁵ This remark highlights the notable fact for which affectivity supports symbolic function. Indeed, when there not exist abstract ideas, the related feelings cannot either exist. So, when an individual undergoes to a mental decline (due to various reasons, neurological, environmental, social-cultural, etc.), the first feeling lost are just the higher ones, like the ethical and spiritual ones (De Giacomo 1972, Cap. 1). This also agrees with the remarkable role played by affectivity in learning, in that, being motor ability, ideational field and affectivity the main three contexts in which learning develops, we deduce that affectivity plays a crucial role in learning (Delay & Pichot 1965, Cap. VII, § 3), a stance claimed above all by psychoanalysis (which put affectivity at the basis of fundamental psychic structuration as defence mechanisms arise to face impelling anguish). For instance, affective interferences (like rapid oscillations of mood) hinder learning (Mastrangelo 1979, Cap. 8). However, many psychologists have claimed the basic need to study further intertwinements between emotion and cognition (Miller 1993, Ch. 4, § 7.2), for the fundamental importance of affectivity for human psyche and its development (Revers, 1968).

⁶ So acquiring ever more high feelings, like ethical, social, political, religious, and cultural ones (De Giacomo 1972, Cap. 1).

iii) and iv) by a consciousness state modification (Bini & Bazzi 1971, Cap. V, A); Sarteschi & Maggini 1982, Cap. 2, § VIII).

Temperament (or *disposition*) refers to the psychological component of the organic substratum of affectivity. It is mainly determined genetically – hence, it regards genotype – and comprehends potentially – at birth – all those allowed characteriological components which will be phenotypically explicitated or actuated later during epi-ontogenetic development in which either individual and environment components met to give rise *character* which therefore will turn out to be featured by: usual mood's tone, more or less emotionality, predominant feelings. So, character is also definable as the class of those stable affective tendencies with which each individual orients, constantly and habitually, her or his own actions and reactions to the external stimuli of the environment in which she or he lives also in relation to society and world to which he or she belongs (*personality*⁷). Such a stability of the individual dispositions, as typical aspects of the character, is mainly due to the constancy of the *mood* by means of the so-called *mood's fundamental tone* which is that primary affective intonation of each individual stably oriented towards a major susceptibility for pleasure or displeasure, along the continuum axis pleasure-displeasure, so that such a mood's tone may be cheerful (until up exaltation) or sad (till to depression) or indifferent. In the normality psychic conditions, mood's tone should be constantly oriented towards a very moderate optimism, while in other extreme cases, in which it oscillates in a rapid manner or towards extremes of the axis pleasure-displeasure, then pathological conditions arise. Finally, mood's tone is strictly related to somatic coenaesthesia, i.e., to that subjective sense of wellness or malaise continuously perceived by an individual (De Giacomo 1972, Cap. 1).

Affectivity, however, plays a truly fundamental role for the basilar normal development of human psyche since childhood (which is a crucial and decisive period of the human life and its psychic development), as witnessed by the various psychiatric examinations of the life of criminals in which a serious affectivity lack in childhood is a constant datum (Andreoli, 2018; Bizzarri, 2010). On the other hand, some recent psychiatric researches (related to the so-called *mood spectrum model*) have pointed out the basic recurrence of mood illnesses in many other psychiatric disorders (Cassano & Pini, 2000; Placidi et al., 1993).

2. The psychoanalytic perspective. A first step: the notion of drive and its structure

From a historical viewpoint, Freudian psychoanalysis has been the first psychological trend to have pointed out the relevance of affectivity for all the human psychic life. Further, it has worked out a framework within which to formalize affectivity, so orthodox psychoanalysis is the most suitable psychological trend able to pursue this aim. Freud, at first, distinguished among *instinct*, *stimulus* and *drive*, in that the former (*Instinkt*) is referred to a rigid and hereditarily predisposed behaviour of animals, predetermined in its development as well as adapted to its object, while the latter is not so rigidly determined, as well as is much more psychically oriented (and not only somatically acted

⁷ The personality's construct comprehends all the outcomes of the interactions of an individual with the general world (this last understood in its broadest sense) in which he or she lives, whose psyche is meant as an integration of all its basic psychic components, that is to say, noetic, affective and volitional spheres, which are closely related to each other. We have therefore the following inclusions of psychological constructs: *temperament* \hookrightarrow *character* \hookrightarrow *personality*, with the first genetically (or phylogenetically) inherited, the second ontogenetically determined and, finally, the third epi-ontogenetically outlined.

to satisfy immediately a vital need); finally, the drive (*Trieb*) differs from the stimulus as the former springs out internally, acts constantly as an internal force and the individual cannot escape from it, differently from an external stimulus which may be avoided. Hence, the drive is a basic psychic component producing an excitation state which pushes individual towards action according to a genetically determined way yet liable – thanks to its structure and function – to be modified in dependence on the environment and the own lived experience (Galimberti, 2018; Laplanche & Pontalis, 1973; Lis et al., 2003).

Freud, in his dual theory of drives, was interested in the basic distinction first between sexual drive and self-preservation drive (exemplified by the basic opposition “love-hunger”), then between sexual drive and aggressive drive (exemplified by the basic opposition “love-destruction”), finally included in the wider dualism Eros-Thanatos. Sexual drive provides the erotic component of mental activity, while aggressive drive provides the mere destructive component of it. These two basic, antithetic forms of psychic energy (i.e., sexual and aggressive) may be fused or amalgamated together, to give rise the rich variety of the psychic life of human being, according to a ratio established by the so-called *defence mechanisms* of the Ego, within a model of human psyche. Freud also considered the notion of *partial drive* in reference to the polymorphic nature of sexual drive mainly having an early somatic origin and basically linked to self-preservation drive by *anaclisis*, becoming independent only in the next psychic development of each individual. The *drive*, as the etymology of *Trieb* explains, refers to the basic dynamicity of the *internal excitations* from which it springs out and from which the individual cannot without do (differently from *external excitations*, or stimuli, which may be neglected); they are the functional foundations of psychic life of every individual, and have a somatic origin said to be their *source* (exogenous zone) by Freud (from about 1905 onwards). By an energetic constancy principle, such internal excitations should be discharged, so drive is also characterized – according to Freud – by both an *aim* and an *object*, the former being the final entity towards which drive has been addressed or directed to reduce excitation, while the latter is the way or fashion with which such an aim is reached; finally, the unavoidable tendency of drive towards the discharge of its excitation state, is said to be – even according to Freud – its *push* (or *boost*) which is the active counterpart of the drive, that is, what gives dynamicity to it (Galimberti, 2018; Laplanche & Pontalis, 1973; Lis et al., 2003; Petrini et al., 2013).

Therefore, any *drive* \mathfrak{D} has four main features, *source*, *push*, *object* and *aim*, which overall may be schematically represented – in their dynamicity – as follows:

$$\mathfrak{D}: (source_{(push)}) \xrightarrow{(object)} (aim_{(object)}) \quad (1)$$

that is, the somatic excitation, originated in a certain exogenous zone (*source*), due to its intrinsic dynamical nature (*push*), tends to be satisfied (or annulled) reaching an *aim* with a modality given by the *object* has been chosen, which may be into the object itself. This latter may be a person or a real as well as a phantasmatic thing; it is the most variable element of a drive. The push is the last element charactering drive considered by Freud, as closely related to its basic motor nature finalized to reach an aim, so push characterizes the action tendency of a drive, that is, its intrinsic dynamicity, characterizing human activity in its broadest sense (Barale et al., 2009; Laplanche & Pontalis, 1973; Lis et al., 2003; Petrini et al., 2013).

The drive is, therefore, the psychic referent (or expression) of an endosomatic excitation⁸, to be precise, its *psychic representative*. Freud considered drive as a concept relying between the somatic and the psychic, in the sense that it springs out from a somatic excitation (which is its *source*) and is turned towards the psychic horizon (comprehending its *aim*). So, with its 1915 fundamental theory of drives, Freud conceived an original relationship between soma and psyche, not ruled according to a parallel or a causal pattern, but rather conceived as analogous to the (commercial) relationship that holds between mandatory and its representative or, in structural linguistic sense, between *signified* and *signifier*, a pattern, this latter, which will be later retaken by Jacque Lacan. In any case, this last analogy, above all from the linguistic perspective, should be meant in a two-way fashion, that is to say, when mandatory is the endosomatic excitation (*Reiz*), then drive plays the role of psychic representative, while, vice versa, when the mandatory is the drive (*Trieb*) then the corresponding psychic representative (*Triebrepräsident*) is also named the *ideational representative* (*Vorstellung-repräsentant*), on its turn said to be the *psychic representative* (*psychischer Repräsentanz*) when the above ideational representative is considered together the corresponding *amount* (or *quote*) of *affect* (*Affektbetrag*) that invests it (Galimberti, 2018; Laplanche & Pontalis, 1973).

Therefore, in this last case, the drive \mathfrak{D} is formally given by the pair $(\mathcal{R}_{id}, \mathcal{A}_{af})$, where \mathcal{R}_{id} is the ideational representative of \mathfrak{D} , while \mathcal{A}_{af} is the amount (or quote) of affect associated to \mathcal{R}_{id} by means of a basic process called *cathexis* which therefore operates functionally as $c: \mathcal{A}_{af} \rightarrow \mathcal{R}_{id}$. In the elements of the pair $\mathfrak{D} = (\mathcal{R}_{id}, \mathcal{A}_{af})$, we intentionally have avoided to indicate, as an index, the related drive \mathfrak{D} , for the following reasons: when the two basic psychic mechanisms of *repression* \mathfrak{R} and *suppression* \mathfrak{S} operate on a drive $\mathfrak{D} = (\mathcal{R}_{id}, \mathcal{A}_{af})$, then \mathfrak{R} operates (unawares) on \mathcal{R}_{id} – removing it into the unconscious \mathfrak{U} – and not on \mathcal{A}_{af} , while \mathfrak{S} operates (knowingly) on \mathcal{A}_{af} – removing it into the preconscious-conscious zone $\mathfrak{P}\text{-}\mathfrak{C}$ or into the Ego – and not on \mathcal{R}_{id} . Hence, schematically, \mathfrak{R} and \mathfrak{S} functionally operate as follows

$$\mathfrak{R}: \mathfrak{C} \rightarrow \mathfrak{U}, \quad \mathfrak{S}: \mathfrak{C} \rightarrow \mathfrak{P}\text{-}\mathfrak{C} \quad (2)$$

through the contemporary action of the defence mechanisms of the Ego, \mathfrak{M}_{def} , with respectively

$$\mathfrak{R}(\mathcal{R}_{id}) \in \mathfrak{U}, \quad \mathfrak{S}(\mathcal{A}_{af}) \in \mathfrak{P}\text{-}\mathfrak{C} \quad (3)$$

for every drive $\mathfrak{D} = (\mathcal{R}_{id}, \mathcal{A}_{af})$. Once $\mathfrak{R}(\mathcal{R}_{id}) \in \mathfrak{U}$, the ideational representation \mathcal{R}_{id} is subject or undergo to unconscious mechanisms, among which are condensation, displacement, fixation and drive transfers (thank to which certain unconscious equivalences are possible among different objects, like among penis, money, faeces, child, gift⁹). Further, once \mathcal{A}_{af} leaves representation \mathcal{R}_{id} (by means of a psychic mechanism said to be *decathexis*), it assumes, as $\mathfrak{S}(\mathcal{A}_{af})$, a certain psychic autonomy which allows to cathexis again (also – but not only¹⁰ – through that particular psychic

⁸ The representation is also what has been transcribed into mnemonic systems (memory), that is to is, it is closely related to the so-called *engram* (Galimberti, 2018).

⁹ Cf. (Barale et al. 2009, Vol. II, pp. 905-909).

¹⁰ As has been said in the previous section, quote of affect may undergo the following chief mechanisms: *i*) conversion of affects; *ii*) displacement of affect; *iii*) transformation of affect. Moreover, there exist four main modalities with which cathexis acts, namely: *i*) acathexis; *ii*) undercathexis; *iii*) overcathexis; *iv*) decathexis; *v*) countercathexis (Galimberti, 2018).

mechanism called *anticathexis*) other ideational representatives \mathcal{R}_{id} : so, for example, in obsessive neuroses, as Freud stated, the quote of affect \mathcal{A}_{af} is displaced from the original traumatic event to another meaningless¹¹ representation (instance of *displacement* of the affect), in the hysteria, such an amount of affect is transformed in somatic energy (instance of *transformation* of the affect) and associated with a new ideational representative linked to a certain somatic zone or function, while in anxiety neuroses or in melancholy, the affect quote is converted in anguish (instance of *conversion* of the affect) (Galimberti, 2018; Laplanche & Pontalis, 1973; Petrini et al., 2013).

Freud attributes to the affect amount also a qualitative feature besides to a quantitative one, just given by its quote, so he speaks of *affect* just in reference to such a qualitative nature, to which is closely associated the *quote of affect*, related to the quantitative aspect. Further, we highlight again that amount of affect relies on preconscious-conscious zone through suppression mechanism, while ideational representation is unconscious by repression. Affect played a fundamental role in Freudian works since the early *Studies on hysteria* (done with Josef Breuer in 1895) in which a net distinction between affect and representation became clear to Freud. In 1915, Freud was already aware that affect has both a qualitative fashion (related to subjective emotional resonance) and a quantitative one linked to drive energy thanks to which cathexis and other energetic processes may take place. The latter undergoes to suppression and does not have an autonomous existence, differently from representation – which has, after repression, an own autonomous (unconscious) existence – but a potentiality to be cathected again or transformed into another type of affect, above all in anguish (Laplanche & Pontalis, 1973).

In a next paper, we shall try to work out a more coherent framework in which to unify the many notions formally exposed above on drive, its main structure and functions, better suitable to further formalization processes and computational implementation attempts.

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¹¹ The senselessness of this new representation is the result of the attempt to nullify the unbearable affect of the primary, first representation whose quote of affect is now displaced to such a second, final representation.

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