

A Further Step Towards a Comprehensive Theory of Affectivity

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Abstract

Based on the conclusions of our last published paper on affectivity, we decided to go a step further and look at the implications of its development. First, we return to the cyclical and bivalent view of the model that we have elaborated after several years of empirical research and logical reflection. We attempt to detail the interconnection of these cycles (which together constitute the affective mode of information processing), with the rest of the behaviour (mainly the cognitive mode of information processing), and with each other, continuing with the work of the interactionist current of the emotion/cognition interaction. Finally, we outline some practical applications of these theoretical advances.

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Introduction

First, we must clarify that when we speak of interactionism, we not are referring to a variant of systemic psychology, which refers to the interaction between the subject and the environment [1,2]. In our opinion, the use of this term by this school is not appropriate, since it may lead to confusion with the interactionist current -this one- between cognition and emotion, as two separate systems that interact with each other. Possibly the confusion lies in the idea of cognition; the interactionism, to which we will refer in this article, is based on the findings obtained by the cognitivist school, which arose to improve the proposals of behaviourism; that is to say, positive method yes, but not a black box model either. It is a school that continues to bear fruit [3].

In our previous works, we proposed a graphic model, with which we tried to explain the phases through which the affective system goes through to complete a cycle [1,4]. That is to say: a cycle for when there is reward (reinforcement of the attachment with the object, as well as when there is frustration, desistance from establishing that attachment). The key to understanding this is to think that this model is based on the assumption that the affective attachment is the axis (never better said) of the affective system. In this model, we found that the acquisition and loss of the object go through different stages, each of them counter-posed to the other. We also proposed that to consider a cycle for each object for which interest is shown or renounced beforehand.

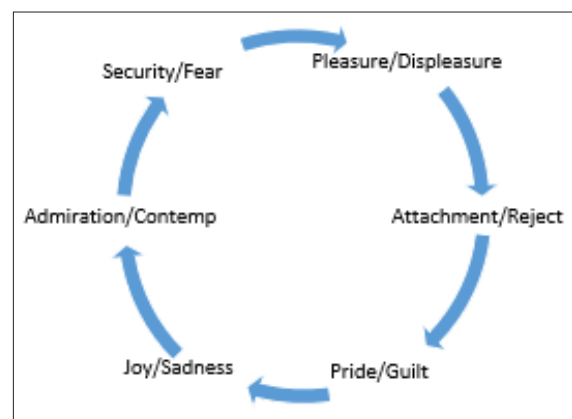


Figure 1: Wheel of Affects, Grouped by Opposing Pairs

But, to see it more clearly, we had to separate the opposite pairs, and thus obtain two cycles without ruling out the possibility of their overlapping, with the consequent complexity for the model. The result of this subdivision can be seen in Figures 2 and 3, and in them we can clearly see the logic of the sequencing, which is completely descriptive of what happens in reality. That is to say that when ego tends to feel attached: it starts from a positive valuation of the object (patient), a) admiration, as a consequence of that, it experiences satisfaction (positive reinforcement), b) Pleasure; subsequently.

The two cycle models are as follows:



Figure 2: Wheel of Affects considered Unfavourable by Ego

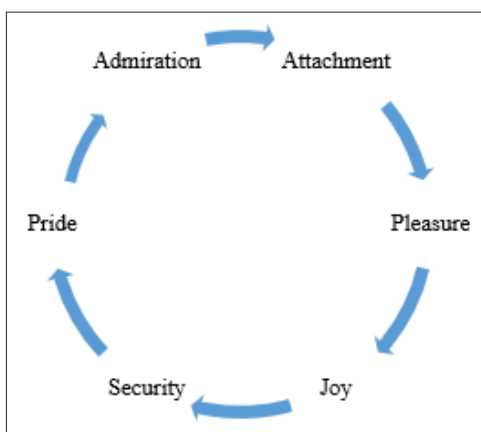


Figure 3: Wheel of Affects perceived as Favourable by Ego

However, given the experience of this cyclical behaviour, we ask ourselves what sets it in motion and what it revolves around. We go on to explain what for us are the conclusions, we have reached in this respect.

Explanation of the Role of the Attachment in the Affective Mode of Knowledge

In a certain way we can say that during the whole learning process, through which the knowledge of something or someone passes, the two modes of knowledge that, for the moment, we recognize, the cognitive and the affective, have intervened. This learning process requires the intervention of memory (which is essential to relate Stimulus → Organism → Response, either by means of operant or classical conditioning). Thus, memory allows us to use those experiences recorded in the mind, at certain moments, by means of a process called recollection. The content of these memories can be abstract (acquiring the form of engrams), typical of the cognitive mode; or it can be perceptual, generally more typical of the affective mode (although not exclusively). Thus, we also find the affective mode linked to memory, the type of which we understand to be episodic memory, because it is commonly related to everyday experience. It is therefore a memory that is sequential and conditioned to a large extent by the temporal dimension of our personal experience. We can intuit that it is this memory that is commonly related to our daily experience.

The responses, in the case of the affective mode, we can call them “expression”, which, of course, can manifest itself in various known forms and others not so well known. But, in the case of the affective mode, its peculiarity lies not only in responses that for the moment we are going to call visceral or organic).

Similarly, we can intuit that the storage of data in the cognitive mode is done mainly through operant conditioning; that is, in that mode information is mainly collected on how problems are solved. However, data storage does not take place only in the cognitive mode; in the affective mode of knowing (perceiving) reality, data from classical conditioning are involved. In other words: in situations in which a relationship has been established between a stimulus of the environment (previously marked as relevant (thanks to the genetic or learned information that we possess about it), considering that this environment can be internal or external to the individual. This stimulus is followed by a response on our part (as sentient subjects) which can be visceral or operant (motor or psychic), and which in language is manifested in its nuances and intonation and practically in all the so-called artistic manifestations, possibly most clearly in those of a sequential character such as music or dance.

So that we have the two types of memory acting in a coordinated way, otherwise it would have no adaptive value. Abstract memory would act by relying on the cognitive mode of knowing and processing information, and episodic memory, on the other hand, by using the resources of the affective mode. At some point the memories must act together, because if one has the necessary information about the solutions to the problems, the other allows us to remember the moments in which those solutions are relevant. It is at that precise moment that the connection between cognition and emotion has been established, and precisely because of this, memory acquires a fundamental role in the interaction between both modes of knowledge.

But what is the glue that unites both modes, it seems obvious to us that it is the area of interest that has directed our attention to it. We usually call this area of interest “object” (material or immaterial). Attention will lead us, then, to direct our machinery of knowing towards a given object. The combined movement of both modes of knowing turns out to be a hybrid that is composed of or related to perception. This connection, necessarily, must have a lasting character, in order to be useful to us in successive similar experiences. Thus, it seems to us that with this perspective we are approaching the definition of “feeling”, which will be easier by this procedure.

However, we now need to deconstruct a term, which is given a supposed meaning, but which needs further definition.

The Icons

On the one hand, an object, when affectively processed, can be represented by an icon, for we have previously concluded that the affective mode of information processing uses the configurations of stimuli, taken globally, treated as packets of information. It has, therefore, a data collection that we can call not very detailed. Thus, the objects in the affective information processing mode have the task of triggering standardized responses, towards standardized objects with which the similarity of the stimuli or configurations of stimuli that we perceive is sought. The behavior that responds to the icons follows patterns, the set of which are the so-called emotions.

As they are configurations of stimuli and are guided by previous experience, the data it handles come from episodic memory; therefore, it looks for diachronic relationships.

The Models

However, cognitive processing is analytical and therefore requires more precise data; it resorts to models, with which it contrasts the data it perceives at any given moment, and goes further than the affective mode; it is more demanding, and therefore generally slower. In this case, the responses are individualized.

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This mode of information processing requires comparison with models, looking for differences and similarities; for this reason, it needs another type of memory, of abstract content, which seeks synchronous relationships.

According to this approach, we have connected memory with affects, through the links; that is, the more sophisticated affects, in which cognition can intervene, although perhaps not always. In other words, although links are the way of perceiving reality in the affective mode (as opposed to what we have called models, with which to compare the new objects perceived, which are characteristic of the cognitive mode), these links (we have proposed that they are based on sequential autobiographical memory), but we must also bear in mind that for links to be established, analysis procedures are also necessary, which allow us to discern (perceive differences), and not only find similarities as in the affective mode of information processing. We could say that our psyche perceives reality using the comparative method: discerning and finding differences, in the cognitive style, and looking for similarities and “familiar” objects, in the affective mode.

We see, then, that, far from behaving independently, the cognitive and affective modes of processing interact continuously with each other, and rely on each other in a constant and necessary way.

In this way, the difficult balance between one mode and the other can be altered, because the whole complex system involves: conditioning, simple or operant → memory (auto-biographic episodic or abstract) → comparison (search for similarities and differences) → link or area of interest → icon or model → affective cycle (negative or positive) or cognitive cycle.

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The alteration or modification of just one of these nodes substantially changes the flow. Examples of these flow distortions are obsessions, alexithymia or anhedonia. It would be up to clinicians to check whether this connection is true and what

relation these disorders could have with difficulties in some kind of memory, but we will try to outline some possibilities.

In the case of obsession, the link with the object is rigid and immovable, probably because one or more of the registers that accumulate in the memory has become excessively preponderant over the others (we become obsessed with a specific “icon”). One memory register dominates over the others. Then it will be a pathology pro excess of the link.

In anhedonia it would be, in a way, the opposite: the almost total absence of memory registers that have developed into an attachment.

And in the case of alexithymia, it would be a distortion, which would affect the outward expression or manifestation of emotional arousal.

What are the implications of saying that the link established with the object (the icon) follows the laws of conditioning (either classical or operant)? In our view, classical conditioning has much to do with primary emotions, which either do not require learning or are “innate” reflexes (as in the case of many fears), as in the case of many fears.

However, operant conditioning implies that something similar to a schema is produced: Stimulus → Organism → Response or behaviour; but with the caveat that, in this case, the sequence is apparently initiated in reverse: Response → Reinforcement → Stimulus (the icon, which is consolidated as such); but perhaps in this case, the key is that the role of the organism (O), if not autonomous or visceral, is played thanks to the conduction of the cognitive mode of processing; that is, that by means of an analytical-inductive procedure, not only a bridge is established with the area of interest, but also with the icon. We stumble then, by this way, with the emotion-cognition interaction, and we return, with it, to the beginning of our reasoning.

We will have to begin by explaining what feelings are, at least as we understand them in Spanish and perhaps in other languages: we understand that feelings occur when an emotion is linked by an attachment with an object, with which Ego initiates the knowledge of that object, and it is at this moment when the emotion-cognition interaction acquires meaning, which aroused so much interest in the 60s, 70s and 80s of the last century, and thanks to that we can explain it [5-8].

In a certain sense, we can say that emotions manifest themselves with respect to an object in the form of a memory of the whole learning process through which the subject has passed, and this memory is nothing more than memory: the Stimulus-Response-Reinforcement linkage is collected in the form of a history of the whole process, and this is what is called episodic memory. For example, the attachment that unites us to a friend is based on all the experiences or episodes that we have shared with him or her. More specifically, it is collected thanks to what is called episodic autobiographical memory.

The affective mode communicates to the consciousness its conclusions about what it perceives through the attachment, by means of the so-called emotional expression, which can be gestural, artistic, sonorous, etc. On the contrary, the cognitive mode communicates its findings through ideas.

Feelings

At this point, we must stop to consider the importance of feelings as a special process or situation of the mind, different from that of emotions. First of all, we must clarify that in this work we use the most common concept of feeling in the Spanish language, of which we have already spoken previously, but we should not think that it is always produced in the same way as emotions [9].

But let us not think that this emotion-cognition interaction always takes place, since we continually prove that it is not always possible: when it is not, we find ourselves with irrational emotions, the most striking example of which may be phobias.

Continuing with this line of relating the attachment with some pathologies, we could say that alterations of the attachment can be related to them. For example, the weakness of this attachment, whether of greater or lesser intensity, can be related to alexithymia or even to anhedonia (of the ASD spectrum, or any other ailment that is related to estrangement of the self); excessive strength with OCDs, or even with addictions. The fobias, with the excessive strength of attachments mounted on the basis of fear (i.e. with phase III, or the Insecurity of the circle of loss), as we can see in Appendix II.

The Sequential

If we reflect on what it may mean that we can finally demonstrate that the establishment of affective attachments is related to autobiographical episodic memory, we will have to begin to consider that this episodic character means, if we put it another way, that we are dealing with a sequential storage of data (memory); that is, one piece of data after another, as opposed to other memories such as semantic, abstract, or iconic memory, which are synchronous.

Indeed, the sequential is diachronic, which implies that our organism is capable of storing data one after the other and, therefore, of estimating time. That time, at least in a conscious way, is only perceived, in a conscious way, thanks to referents, as when we use instruments such as clocks, or the observation of the position of the Sun, the planets, or other stars in the sky. But if we lack these referents, which probably appeared late in our evolution, we can use other mechanisms that also give us an idea of the elapsed time: the voluntary and repeated noises, according to a pattern, sequence or compass: a part of music is based on them and, perhaps for this reason, it allows us to easily connect it with our affective system.

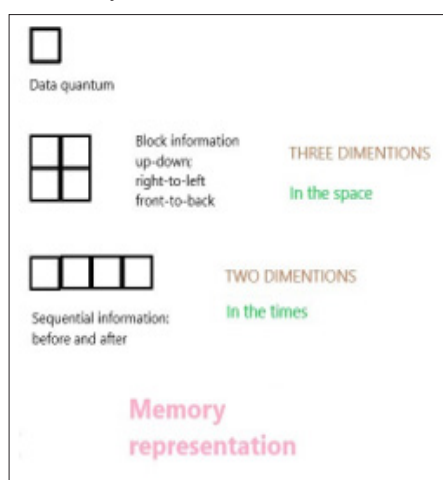


Figure 4

The affective system is sequential and synthetic like music and this one reproduces the rhythm or compass of many repetitive sequences of sound. Those of biological order mainly, that of the different rhythms of the heart, the cerebral pulsations, those of natural phenomena. The compass arises in the beginnings of music, and this one returns to it to nourish itself. This allows music to connect better with vital experiences, related to affective links and autobiographical memory.

It remains for us now to understand what reflection this type of memory storage has on the neurological levels, since the neurophysiological and structural differences between the two remain to be clarified, which would help us to better understand the processes of the psyche, such as affectivity, which are nourished by them.

In Illustration 4, we try to express graphically this idea by which we deduce the greater complexity of the cognitive mode; however, its usefulness is equivalent to that of the affective one.

There is, in addition. A useful deduction, if we verify, the coherence and validity of this approach to the modes of processing information: we have previously said that the expression of affects has to be made, so that they can have their part in our way of understanding and acting in the world. And, if our assertions about sequentiality are true, then the preferred form of expression for the affective mode is music, whose sequential character is difficult to avoid, even if symphonic music pretends to deny it. And this is so, because the sound is produced by a vibration over time, and in the frequency of a vibration in a certain interval of time, one tonality or another is deduced.

The Music

Music has qualities that make it particularly favorable for the development of a more complex and elaborated affectivity.

In fact, if we accept a gradient, with respect to the affections, that goes from a minor to a major complexity, in the first stage will be the primary emotions, triggered before a stimulus established in an innate way, then could be those that are triggered after a conditioning; when this conditioning is something more elaborated, we can already speak of the establishment of a link, because it offers patterns of perception, of reaction and of behavior before one or several stimuli.

Evocation

But we still have to resolve evocation, i.e. to find out when and how the data stored in the various memories are retrieved.

Our Proposal is a Systemic Model

In which, to the two affective systems, we must link the cognitive and other systems. We try to express this idea graphically in Annexes I and II in addition to a III, that we will in a later work. But in these graphs, we try to approximate how the systems we are talking about could be; but we still have many doubts, even if we were to verify that they are close to the truth: for example, how do the brain systems “know” that the storage of information must be sequential or synchronous? which brain systems participate? where and how are these two storage systems (and their derivatives) carried out? In addition, the model that is being drawn appears to be several systems active at the same time, which greatly increases the complexity of its analysis.

Final Reflections

Feelings are Subject to Slow Evolution

They are at the point of interaction of emotion and cognition, because they are in themselves the set of processes that allow the combination of the affective and cognitive modes. For this reason, their evolution or maturation is marked by the maturation of the cognitive system and, presumably, the maturation of the affective system or mode follows the same or similar stages as the former. As we found in 1986 and 2022[4,8]. In the first case with respect to the attachments established and with respect to the feelings elaborated, and in the second only with respect to the type of attachments. That is, to study attachments, we used the object choice subtest (ibid), for which we have data in both samples (1985 and 2012), and to study feelings we used a test that assumed that ontogeny (with respect to social feelings) recapitulates phylogeny. These social feelings were: magical, rationalist, functionalist or universal (each of them subdivided into four others) and provided us with results and data, obtained in 1975, that perhaps we should have replicated and may do so in the near future.

This slow evolution, in comparison with that of emotions, makes attachments and feelings ideal for establishing stages of maturation, appropriate for comparing the scores of an individual with those of his or her normative group, and thus for classifying individuals according to their affective maturation in comparison with their age group, in a similar way as we do with cognitive intelligence.

Emotions are Subject to Rapid Evolution

According to many authors, almost at the moment of birth, we are endowed with primary emotions, which gradually become more sophisticated and develop into other derivatives. But this happens very quickly and, in reality, many of them are not such emotions, but social feelings, bathed in interaction with cognitions.

Since the main repertoire of emotions is at term from early childhood, as we have already assumed since Watson's time, the parameter emotions cannot be used as an indicator of affective development, since it has only one stage and there are no substantial differences between one age and the other [10]. No emotional intelligence quotient can be calculated with it, unless we make twisted changes in the meaning of the term emotion [11-15].

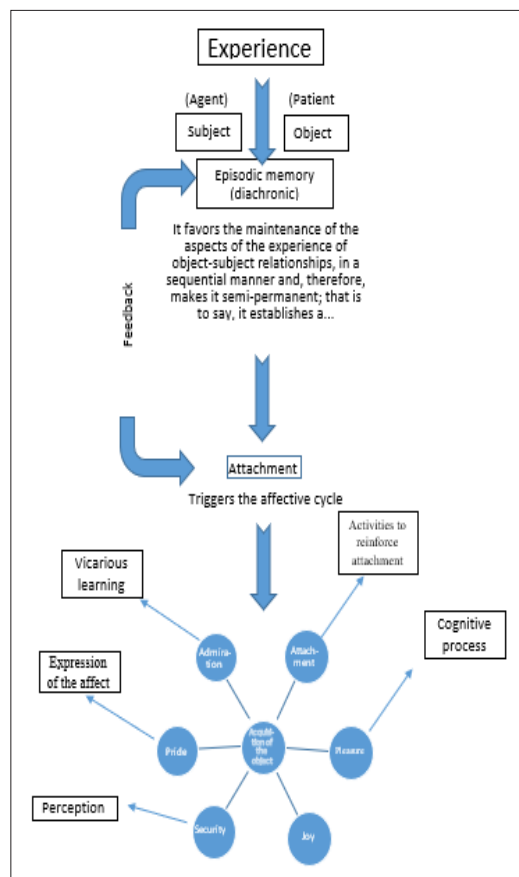
Consequences of this Dyssynchrony are

- Irregular evolution.
- Contradictory behaviours of people.
- Difficulties in planning thinking.

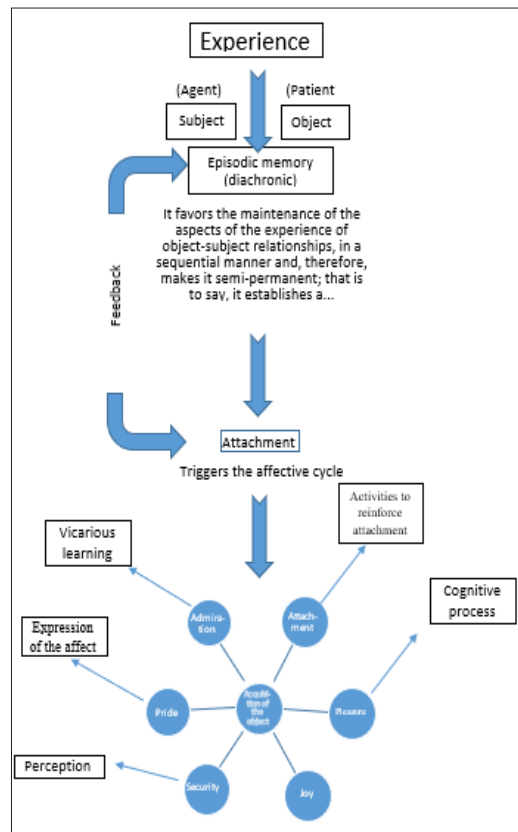
Model Applications

- In the therapeutic field, in principle it seems that one approach to psychopathologies may be (in the absence of empirical demonstration), that the affective cycle stops or slows down at certain points of the circle (it stops in fear -paranoias-, rejection -phobias-, etc.), as if an engine had "seized up". The logical consequence of this is that it must be restarted, developing methodologies, or therapies, that help the individual to move smoothly to the next point of the wheel.
- In the educational field, with a similar methodology that we have proposed in the therapeutic area, although on this occasion, accentuating the prophylactic character.

Appendix I



Appendix II



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