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THE EMBODIED NATURE OF EMOTIONS: ON CHARLES DARWIN AND WILLIAM JAMES' LEGACY

On the essence of emotions

Darwin's book on emotions, *The expression of the emotions in man and animals* (1872), elaborates on the main conclusion of *The descent of man* (1871), that "man is descended from some less highly organised form", through the application of evolutionary principles to a particular and crucial chapter of human bio-psychology, the chapter of emotions. The focus on *expressive behaviour*, rather than *emotional states*, proceeds obviously from Darwin's empirical standpoint as a field naturalist, but it does not allow one to take a fully behaviourist reading of his theory of emotions. Indeed, for Darwin, emotions are *states of mind*, and the so-called expressions are originally nothing but the serviceable actions provoked by those states of mind in order to find relief or gratification. Therefore, the general *natural intentionality* of emotions consists in unleashing adaptive changes of action. In other words, emotions are essentially proactive or motivational; and their functional role is to regulate action by selectively allocating certain magnitudes and intensities of bio-psychological energy to certain goal states. They can be conceived as energetic processes that set goals for action. The expressions of emotions, for their part, tend to manifest the course of action that the organism is going to adopt, and thereby expressions seem to have a *transitive function*, implementing the qualitative change in the individual that will prepare it to act, and a *communicative function*, signalling the change to the social environment in order to mobilise sympathetic resources and provoke symmetric changes.

Emotions and their expressions become intelligible if linked to action. Their intelligibility varies according to our ability to grasp, first, their original usefulness; second, the virtually infinite gradation in their apparent instrumental value; and third, the degree of adaptive and expressive efficacy of autonomous organic reactions. It is under this light that the three principles of expression of emotions must be read. These are as follows:

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I. *The principle of serviceable associated Habits.* – Certain complex actions are of direct or indirect service under certain states of the mind, in order to relieve or gratify certain sensations, desires &c.; and whenever the same state of mind is induced, however feebly, there is a tendency through the force of habit and association for the same movements to be performed, though they may not then be of the least use. [...]

II. *The principle of Antithesis.* – Certain states of the mind lead to certain habitual actions, which are of service, as under our first principle. Now when a directly opposite state of mind is induced, there is a strong and involuntary tendency to the performance of movements of a directly opposite nature, though these are of no use; and such movements are in some cases highly expressive.

III. *The principle of actions due to the constitution of the Nervous System, independently from the first of the Will, and independently to a certain extent of Habit.* – When the sensorium is strongly excited, nerve-force is generated in excess, and is transmitted in certain definite directions, depending on the connection of the nerve-cells, and partly on habit: or the supply of nerve-force may, as it appears, be interrupted. Effects are thus produced which we recognize as expressive. This third principle may, for the sake of brevity, be called that of the direct action of the nervous system. (Darwin, 2006: 1277.)

These principles permit to draw different genealogical lines for expressive actions. That is to say, expressions can originate in instrumental learning, in second-order analogical associations, and in reflex-arc responses or autonomic nervous reactions. This construal of the nature of expressions acknowledges the action and interaction of behavioural learning, cultural history and biological inheritance. However, in his detailed development and fine illustration of those general principles of expression, Darwin clarifies and complexifies the relationship between biology (or physiological constraints), learning (or formation of habits), consciousness (or will or intention) and cultural conventions in human emotional life. Thus, it is possible to identify two different sources of expressions that, perhaps paradoxically, can evolve in such a way that they convert into each other, or simply merge together, sustaining a rather unified and well articulated system of expressions.

The natural history of emotional expressions embodies the *evolution of instinct*. In this evolution, one primal source would reside in – conscious or unconscious – will. For instance, the signs of rage can be the result of an original intention or volition to fight, an intentional and fully instrumental behavioural performance, that would have gradually become a learned habitual response, and ultimately an inherited instinctive reaction, that can be said to function semiotically as an *iconic synecdoche*, a partial and incomplete (and therefore useless) analogical display of fighting (Darwin, 2006: 1283, 1294). The other primal source of emotional expressions would be the uncontrolled discharges of nervous-force due to the excess of stimulation or excitement; those discharges increase the readiness for action, are manifested mainly by circulatory and respiratory phenomena, like acceleration of the heart, reddening of the face, trembling of the muscles or sweating of the skin, and acquire expressive value through their regu-

lar association with other more direct expressive signs. From a semiotic angle, these reflex-like expressions are similar to *indexes*, for their intelligibility depends on the relational context in which they emerge. Without determining their context, they remain fundamentally ambiguous and open, that is, pure symptoms of intensive bodily reverberation.

If, presently, everyone concedes that expressions of basic emotions are mostly innate and inherited, and, in consequence, independent of individual learning or imitation, it does not imply the static nature of emotional expressions. For the very different degrees of their usefulness prove that expressions were not specifically *designed* as such, design presupposing necessarily strict teleology and constant usefulness, but have rather *evolved*, being the fruit of progressive acquisition. Therefore, what appears as static in the individual level must be dynamic in the species level, and what appears now as inherited in individuals must have been, in the history of their species, first performed consciously, then habitually and, finally, instinctively. Only evolution, Darwin argues, explicates the coexistence of more or less useful expressions, their differential utility being a reliable index of their differential time-positions in the evolutionary system. Regarding the principle of usefulness, *Design* must assume its permanent validity, or else design becomes absurd or non-intelligent, whereas *Evolution* endorses a much lighter assumption, that the expression was originally well adapted to a survival goal. Moreover, only evolution can justify the high similarity of expression between the different races of man, even when expressions are of no use (like blushing in dark-coloured people), plain proof of their descent from a single parent-stock. Likewise, the significant expressive affinities between man and lower animals (like the expressions of fear and rage) reveal a strong community and unity of origin.

Although Darwin presents broadly the history of emotions as the process of becoming instinctive of purposeful performances, he discerns various possibilities of non-linear determination between goal-oriented performances and instincts as well as between emotion and cognition. It is worth noting, firstly, that some very simple expressions, such as weeping and laughing, though innate in human beings, seem to follow an *epigenetic principle*; for their full acquisition requires exercise and practice, that gives rise to idiosyncratic expressions. Secondly, certain kinds of conscious or unconscious cognitive processing, called self-attention by Darwin, can generate specific reflex-like expressions. This is the case of blushing, a genuine human expression, in which involuntary expressions proceed from the mere belief that others are depreciating or just considering our physical appearance (Darwin, 2006: 1459-60). Cognitive focalization can therefore, by itself alone, produce autonomic modifications in heart-beat, perspiration, glandular activity, colour of the skin, etc. Thirdly, a still higher order of expressive idiosyncrasy is to be found in the possibility of cultural evolution and acquisition of expressive means. That is, many expressions are learned in the same way as "words of language". With this respect, Darwin highlights the non-universality of several gestures, such as kissing, or nodding and shaking as signs of affirmation and negation (Darwin, 2006: 1468). It is self-evident then that, because they encompass a part of arbitrariness, those cultural or symbolic gestures require a process of exposure, learning and imitation in order for their being operant. But once this learning is well established their conventional rules become as efficacious as instinctive reflexes. Fourthly, in the personal realm,

there is always room for creative self-styling through the strategic usage and control of bodily manifestations. In fact, independently of their natural or cultural origin, expressions allow both bottom-up and top-down determination. Free expression as well as simulated expression intensify – or even generate from scratch – an emotional state with its cognitive correlates; while, conversely, the willed repression or regulation of expression decreases the corresponding emotion and saves cognitive elasticity (Darwin, 2006: 1476). Expression contains always an irreducible "truth-value" and "truth-generative power" making that even intended simulation betrays itself as simulation.

Expression cannot be severed from recognition and comprehension; otherwise it would be an entirely void behaviour. The evolution of forms of expression must be concomitant with symmetric forms of comprehension, and thereby they possess the same evolutionary function and structure. Their function lies in an increase of welfare, due to the possibility of immediate coordination of intersubjective frames of mind and actions (sympathy and sympraxy), that prove vital for social or interdependent beings. Their evolutionary structure must also have followed the same pattern, "the becoming instinctive of intentional performances". However, one can speculate that the massive sharing of constitutional characteristics, both between individuals and between species, allows one to conceive a sort of dominant bio-ontological monism, graphically presupposed in Darwin's "tree of life", that would be translated into the circular immediacy of life-expression-understanding (or recognition). In metaphysical terms, following W. Dilthey's (1927) ontology, life is unceasing self-expression. And self-expression is the means of self-understanding, through which life actualizes and enlarges itself. In the human case, Darwin emphasizes that the range of expressive means depend mainly on the circulatory and respiratory systems that pose defining constrains on our universal grammar of emotions. To express and understand an emotion is to instantiate a meaningful constellation of bodily actions. Some emotions, like rage, have very distinctive expressions because of their linkage to very distinctive projects of action; other emotions, for example love, display very fluid expressions because of their non-univocal relation to action.

2. Emotion and Expression: Darwin and James

William James, contrarily to Darwin, tends to reduce emotions to bodily expressions, refuting the idea of a cognitive moment or dimension in emotion, although he contradicts his bold somatic definition of emotion by recognising the possibility of cognitive arousal of emotions. Indeed, James' theory of emotions asserts that: an emotion is "nothing but the feeling of a bodily state, and it has a purely bodily cause" (James, 1950: 459). Thus, emotion consists of a simple physiological and mechanical process, without any teleology and any "mind-stuff". The bodily expression is more than the revelation or manifestation of an emotion: it is the whole emotional phenomenon.

> A purely disembodied human emotion is a nonentity. [...] The more closely I scrutinize my states, the more persuaded I become that whatever moods, affections, and passions I have are in very truth constituted by, and made up of, those bodily changes which we

ordinarily call their expression or consequence; and the more it seems to me that if I were to become corporeally anaesthetic, I should be excluded from the life of the affections, [...] and drag out an existence of merely cognitive or intellectual form. (James, 1950: 452-53).

The notion of *immediacy* fulfills a capital function in this anti-mentalist conception of emotion. For the reduction of emotion to the feeling of bodily changes follow the paradigm of a reflex action and presupposes: (1) that objects produce immediate bodily changes; (2) that bodily changes produce immediate feeling or consciousness; (3) that feeling or consciousness do not add any new quality (say mental or ideal quality) to the those bodily changes. *Coarser* and *subtler* emotions alike, that is, emotions with strong observable bodily reverberations (e.g. grief, fear, rage, and love) and emotions associated with intellectual, moral or aesthetic experiences, are all emotions solely in virtue of synchronously *felt* bodily changes. Despite this mechanical theory, James refers to emotional differences between individuals in terms of *revivability* or *imagination*, and he goes on to concede, surprisingly, that the cause of an emotion can be a mere idea:

> *The revivability in memory of the emotions*, like that of all the feelings of the lower senses, is very small. We can remember that we underwent grief or rapture, but not just how the grief or rapture felt. This difficult *ideal* revivability is, however, more than compensated in the case of the emotions by a very easy *actual* revivability. That is, we can produce, not remembrances of the old grief or rapture, but new griefs and raptures, by summoning up a lively thought of their exciting cause. The cause is now only an idea, but this idea produces the same organic irradiations, or almost the same, which were produced by its original, so that the emotion is again a reality. [...] *An emotional temperament on the one hand, and a lively imagination for objects and circumstances on the other, are thus the conditions, necessary and sufficient, for an abundant emotional life.* (James, 1950: 474-75.)

The Darwinian framework becomes self-evident in James when he presents the replacement of description taxonomy by genetic hypotheses as a major scientific progress. For a genetic approach denotes the pursuing of a higher level research oriented towards general unifying principles. Now, the principles James enumerates are essentially slight variations of Darwin's and Spencer's idea of the original (practical and/or physiological) usefulness of expressions, though adopting a somewhat "cognitive" phraseology. In fact, the degrees of decreased usefulness are thought of by James as if they were "reverberations in imagination" (at once in contrast and in consonance with previous "bodily reverberations"), synaesthetic associations as symbolic displacements, and autonomous direct actions of the nervous system as "idiopathetic effects of the stimulus":

> [1] Some movements of expression can be accounted for as *weakened repetitions of movements which formerly* (when they were stronger) *were of utility to the subject*. [2] Others are similarly weakened repetitions of movements which under other conditions were *physiologically necessary effects*. Of the latter reactions the respiratory disturbances in anger and fear might be taken as examples-organic reminiscences, as it were, reverberations in imagination of the blowings of the man making a series of combative efforts, of the pantings of one in precipitate flight. [...] [3] Another principle, to which Darwin perhaps hardly does sufficient justice, may be called the principle of *reacting similarly to analogous-feeling stim-*

uli. There is a whole vocabulary of descriptive adjectives common to impressions belonging to different sensible spheres-experiences of all classes are *sweet*, impressions of all classes *rich* or *solid*, sensations of all classes *sharp*. [...] [4] [T]here remain many reactions which cannot be so explained at all, and these we must write down for the present as purely idiopathetic effects of the stimulus. (James, 1950: 478-82.)

3. Opening up

A contemporary version of the Jamesian account may be identified in Damasio's (1994, 2003) hypothesis of the "somatic marker" but the need for a cognitive, semiotic and hermeneutic work at the heart of emotion had already been voiced by C. S. Peirce:

> [...] [P]leasure and pain can only be recognized as such in a judgment; they are general predicates which are attached to feelings rather than true feelings. But mere passive feeling, which does not act and does not judge, which has all sort of qualities but does not itself recognize these qualities, because it does not analyze nor compare – this is an element of all consciousness to which a distinct title ought to be given. [...] [E]very phenomenon of our mental life is more or less like cognition. Every emotion, every burst of passion, every exercise of will, is like cognition. (Peirce, 1960: 199.)

Most evolutionary and pragmatic views are currently articulated with "cognitive appraisal" and "instrumental learning" (Lazarus, 1991; Oatley & Jenkins, 1996; Rolls, 2007) that require the combination of adaptive and interpretive processes. Under the angle of interpretation or meaning-construction, and depending on the *locus identified as generative of selfhood*, an emotion becomes either the meaningful "synthetic wholeness of consciousness" (Sartre, 1938: 26) or a form of "relatedness", a "relational construction" (Gergen, 1994: 214).

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