

THE CONCEPTUAL FRAMEWORK FOR THE INVESTIGATION OF EMOTIONS

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Abstract

The experimental study of the emotions as pursued by LeDoux and Damasio is argued to be flawed as a consequence of the inadequate conceptual framework inherited from the work of William James. This paper clarifies the conceptual structures necessary for any discussion of the emotions. Emotions are distinguished from appetites and other non-emotional feelings, as well as from agitations and moods. Emotional perturbations are distinguished from emotional attitudes and motives. The causes of an emotion are differentiated from the objects of an emotion, and the objects of an emotion are distinguished into formal and material ones. The links between emotions and reasons for the emotion, for associated beliefs and for action are explored, as well as the connection between emotion and care or concern, and between emotion and fantasy. The behavioural criteria for the ascription of an emotion are clarified. In the light of this conceptual network, Damasio's theory of the emotions is subjected to critical scrutiny and found wanting.

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P.M.S. Hacker

1. *Conceptual elucidation and experimental investigation*

For a long period the experimental study of the emotions was out of bounds for neuro-psychologists and neuro-psychiatrists. Now, ‘thanks to the work of Ledoux¹ and Damasio², emotions are once again a legitimate topic for research’.³ However, as I shall argue, the conceptual structures with which they operate (partly inherited from William James) are misconceived.⁴ Mary Phillips has recently observed that ‘there is at present no generally accepted theoretical framework for human emotion’.⁵ Philosophical analysis, properly conducted, can assist in filling this lacuna.

Philosophy cannot make empirical discoveries, and it is not its task to produce empirical theories. Its task is to describe the conceptual structures in terms of which we articulate our experience and its objects. So while it should not propose *empirical theories* of the emotions, it can elucidate the *conceptual* framework for experimental investigation. Hence too, it can prevent conceptual confusions that vitiate the design of, and the conclusions inferred from, experiments.

Fruitful experimental work requires a correct conceptual framework characterizing the concepts of the phenomena investigated. Unless one is clear what precisely counts as an emotion, one may find oneself investigating phenomena, e.g. appetites, that are only tangentially related to the emotions (cf. Roles⁶). Unless one is aware of the conceptual distinction between the neural states and processes which make it possible for an animal to feel an emotion and the emotion it feels, one will be prone to confuse an emotion with a brain state (cf. LeDoux). Unless one distinguishes between the feelings that are sensations and the feelings that are emotions, one may confuse

¹ LeDoux, J.E.: **The Emotional Brain**

² Damasio, A.R.: **Descartes’s Error: Emotion, Reason and the Human Brain**, London, Macmillan, 1994

³ David, A.S. and Halligan, P.W.: Cognitive Neuropsychiatry: potential for progress, **Journal of Neuropsychiatry and Clinical Neuroscience** 12:4, Fall 2000: 508

⁴ The following discussion is based upon chapter 7 of M.R. Bennett and P.M.S. Hacker: **The Philosophical Foundations of Neuroscience**, Oxford, Blackwell, 2003, which contains a more comprehensive survey of these matters. I am grateful to my co-author for permission to condense our argument for this paper.

⁵ Phillips, M.L., Drevets, M.D., Rauch, S.L., Lane, R.: The neurobiology of emotion perception I: the neural basis of normal emotion perception.

⁶ Roles, E.T., **The Brain and Emotion**, Oxford, Oxford University Press, 2000

sensations engendered by thoughts with emotions (cf. Damasio). And unless one distinguishes between the causes and the objects of emotions, and between feeling an emotion and realizing what emotion one feels, one may think that identifying the cause of an emotion plays a role in emotion-perception (cf. Phillips⁷), whereas in fact there is no such thing as *perception* of one's own emotion, and the ability to say what emotion one is feeling need not depend on identifying its causes but does depend on identifying its object.

2. Feelings

The word 'feeling' is multivalent. It is important not to confuse its different meanings (Fig. 1).

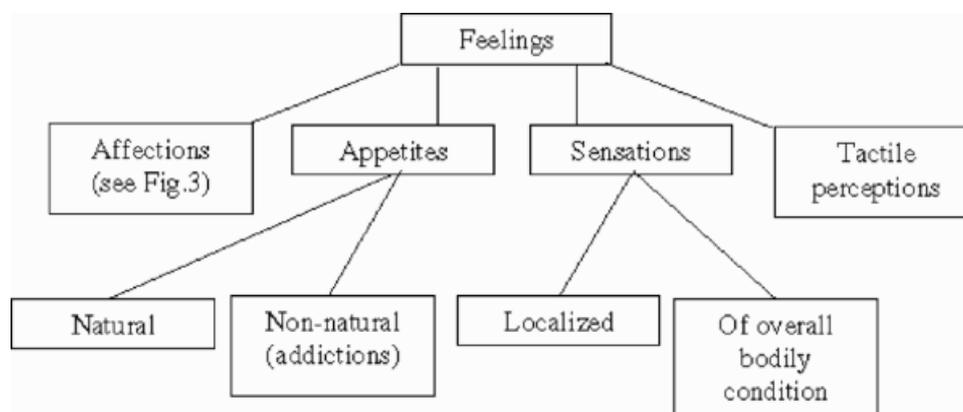


Fig. 1 — *Types of Feelings Distinguished*

We must distinguish the feelings that are perceptions from the feelings that are sensations. To feel the heat, solidity, elasticity or dampness of an object with one's hand, elbow or cheek are forms of tactile perception. To do so is to exercise a cognitive faculty. To feel a pain, tingle or tickle, however, is not a form of perception. To feel a pain is no different from having a pain. Such sensations are localized *in* the body (it always *makes sense* to ask where one feels them), but are not felt *with* any part of the body. Sensations, unlike perceptions, are not correct or incorrect, and the liability to have sensations is not a cognitive faculty. Localized bodily sensations must be distinguished from sensations of overall bodily condition, such as feelings of weariness or lassitude.

Appetites are distinct from affections. Natural appetites are feelings of hunger, thirst or blind animal lust. Non-natural (acquired) appetites are addictions. Natural appetites are blends of sensation

⁷ Phillips, M.L.: Understanding the neurobiology of emotion perception: implications for psychiatry, **British Journal of Psychiatry** (2002), 181, 02-185/1

and desire characteristic of animals (see Fig. 2). The sensations characteristic of appetites are localized — the sensation of hunger is located in the midriff, of thirst in the parched throat. The sensations associated with appetites are forms of unease that dispose one to action to satisfy the appetite. The desire blended with sensation is characterized by its *formal* object (e.g. hunger is a desire for food, thirst for drink, lust for sexual intercourse). Distinctive of desires constitutive of appetites is their lack of a *specific* object (one cannot be hungry for dessert but not for the main course). The intensity of the desire constitutive of appetite is typically proportional to the intensity of the sensation. Fulfilling an appetite leads to its temporary satiation and so to the disappearance of the sensation. Appetites are not constant, but recurrent, typically caused by bodily needs (or hormonally determined drives) consequent upon deprivation of food, drink or sexual intercourse.

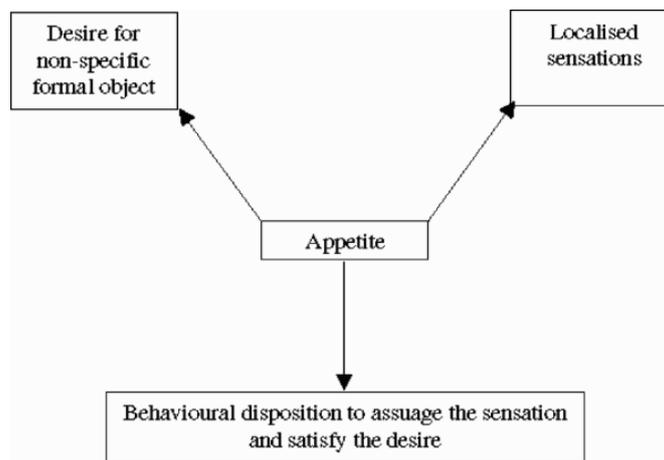


Fig. 2 — *Conceptual Links of Appetite*

Affections, like appetites and sensations, are felt. The feelings that are affections can be divided into emotions, agitations and moods (see Fig. 3). One feels love or hate (emotions), excited or astonished (agitations), cheerful or depressed (moods). Unlike sensations, affections do not have a bodily location and do not inform one about the state of one’s body, even though they are sometimes linked with sensations. One does not feel pride in one’s chest, even though one’s chest may swell with pride, or fear in one’s mouth, even though one’s mouth may feel dry with fear. One’s blush of shame does not inform one of the state of one’s facial arteries, although it may inform one that one is more ashamed than one thought, and one’s tears of grief do not inform one of the state of one’s lachrymal glands, although they may inform one that one loved Daisy more than one thought. Unlike

feelings that are perceptions, the affections do not inform one about the world.

Paradigmatic emotions are such things as love, hate, hope, fear, anger, gratitude, resentment, indignation, envy, jealousy, pity, compassion, grief, as well as emotions of self-assessment such as pride, shame, humiliation, regret, remorse and guilt. The conceptual structure of the emotions will be described below.

Agitations are short term affective disturbances, typically caused by something unexpected. They include such temporary states as: being and feeling excited, thrilled, shocked, convulsed, amazed, surprised, startled, horrified, revolted, disgusted, delighted. They are caused by what we perceive, learn or realize. Because they are disturbances, caused by unanticipated disruptions, they are not motives for action as emotions may be, but temporarily *inhibit* motivated action. One may behave in certain ways *because* one is excited, thrilled or shocked. But one does not act *out of* excitement, thrill or shock in the sense in which one acts out of love, compassion or gratitude. Agitations are modes of reaction: one cries out *in* horror or amazement, recoils *with* revulsion or disgust, is convulsed *with* laughter or paralysed *with* shock. Occurrently felt emotions, by contrast with longer standing emotional attitudes, often bear a kinship to agitations in the perturbations of, for example, the throbbing temples of rage, the trembling, sweating and shallow breathing of fear, the tears and cries of grief.

Moods are such things as feeling cheerful, euphoric, contented, irritable, melancholic or depressed; they are states or frames of mind, as when one is in a state of melancholia, or in a jovial or relaxed frame of mind. They may be occurrent or longer term dispositional states. One may feel depressed for an afternoon, or one may be suffering from a depression that lasts for months. As disposition, a mood is a proneness to feel, during one's waking hours, joyful, depressed, cheerful, etc. Moods are less closely tied to objects than emotions, for one may feel cheerful or depressed without one's mood being directed at any specific object, whereas one cannot feel love without feeling love for someone or something or feel angry without feeling angry with anyone or about anything. Equally, moods are linked not to specific patterns of intentional action, but to manners of behaviour. Cheerfulness, melancholia and depression, unlike love, envy or compassion, do not provide motives for action, but they are exhibited in the manner in which one does whatever one does, in one's demeanour and tone of voice. This is a corollary of the fact that moods colour one's thoughts and

pervade one's reflections.

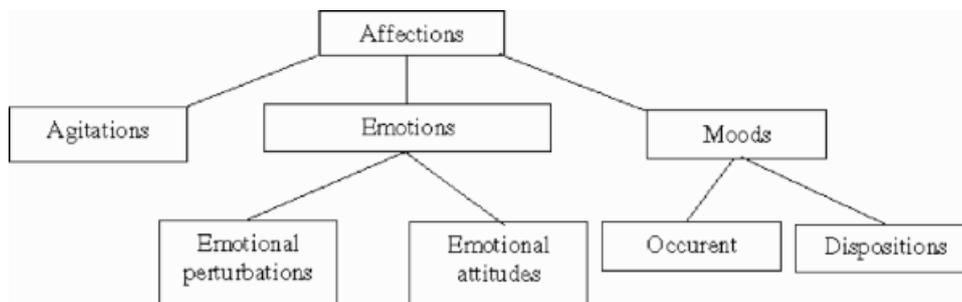


Fig. 3 — *Types of Affection*

It is, therefore, unwarranted to characterize moods, as Damasio does, as emotional states that are frequent or continuous over long periods of time.⁸ One may fear war for a long period, but that does not imply that one is in any particular mood, although, to be sure, one's fear may contribute to one's melancholic mood. Othello's jealousy was persistent and continuous, but unlike his consequent depression, it was not a mood. And frequently to fear things may be to be timorous by nature, but it is not to be in any mood.

The difference between affections in general and emotions in particular, on the one hand, and appetites, on the other, should be evident. Recent work on appetites has been mischaracterized as a result of failure to note it. E.T. Roles (2000) purports to investigate the neural substrate of the emotions. But he takes as paradigmatic examples of emotions, and as the object of his research, thirst, hunger and animal lust. Despite the interest of these investigations, they are not about, and do not obviously have any bearing on, the emotions, for hunger, thirst and lust are appetites, not emotions.

First, emotions are not linked to localized sensations in the same way as appetites are. Some emotions are associated with sensations (fear, rage), others are not (pride, remorse, envy). One does not have a feeling of pride in one's stomach or in one's chest; although there are sensations characteristic of occurrent anger, such as throbbing temples and tension, one does not feel anger in one's temples or stomach muscles as one feels hunger in one's belly. Secondly, emotions have not only formal objects, in the sense that what one fears is what is thought to be frightening or harmful and what one feels remorseful about is a misdemeanour one has committed, they have *specific*

⁸ Damasio, A.R.: **The Feeling of What Happens**, London, Heinemann, 1999, p. 341.

objects, as when one fears tomorrow's examination or feels remorse for lying to Daisy. Thirdly, the intensity of emotions is not proportional to the intensity of whatever sensations may accompany their occurrent manifestation. How proud I am of my children's achievements cannot be measured by reference to sensations. But it may be exhibited in my behaviour, e.g. in the way I praise them, and in the manner in which I talk about them. Similarly, how much I fear heights may be manifest not in the intensity of perturbations I feel on rock-faces (which I assiduously avoid), but rather in the lengths I go to avoid heights. Fourthly, emotions do not display the pattern of occurrence, satiation, and recurrence characteristic of appetites for they do not have the same kind of physiological and hormonal basis as the appetites. Fifthly, the emotions have a cognitive dimension absent from the appetites. The hungry animal wants food, the thirsty animal wants drink, the animal on heat wants sexual intercourse, but no particular knowledge or beliefs are essentially associated with these appetites. By contrast, the frightened animal is afraid of something it knows or thinks is dangerous, a mother is proud of her offspring believing them to be meritorious, the repentant sinner is remorseful, knowing himself to have sinned. Finally, many emotions are exhibited by characteristic facial expression and manifested in typical tones of voice – as in the case of fear, anger, love and affection. Hunger and thirst are not.

The boundaries between emotion, agitation and mood are not sharp. Emotional perturbations (as I shall refer to the typical somatic, expressive and behavioral manifestations of many occurrent emotions) have, as remarked, an affinity with agitations. Emotions may fade into moods, as when terror that abates leaves behind a mood of objectless anxiety. And conversely, a feeling of undirected anxiety may crystallize into a specific fear. The psychological category of the affections displays both conceptual complexity and diversity, the conceptual patterns to be discerned are irregular, and the variations from type to type are considerable. Consequently most generalizations concerning the concepts within the three sub-categories need to be qualified with a 'for the most part' or a 'typically'.

§3. *Emotions*

Emotion words function as names of character traits (loving, affectionate, proud), of motives (acting *out of or from* hatred, envy, jealousy) and of felt emotions. The notion of felt emotion does not discriminate between *episodic emotional perturbations* and longer-standing *emotional attitudes*.

Emotional perturbations (see Fig. 4) resemble agitations in certain respects. Some, e.g. fear or anger, have characteristic somatic accompaniments, both sensations that are felt and physiological reactions that are measurable. Others do not, e.g. feelings of pride, humility, compassion, gratitude and respect. They are manifested in *expressive* behaviour which may take various forms. It may be behaviour that is not action at all, as in the case of blushes of embarrassment or love, and perspiration and pallor of fear. It may be voluntary (the utterances of love and affection, of hope or pride), partly voluntary (raised voice of anger, that can be inhibited) or involuntary action (cry of terror). And it may be exhibited merely in the manner of acting (e.g. *tone* of voice, *impatient* actions of anger). Some emotional perturbations are closely associated with relatively specific forms of intentional and instrumental action or inclinations to act, as in the case of fear of imminent danger (inclination to avoid or flee) or pity (inclination to help). Others, such as regret or hope, are not. Some, in the case of human beings, are directly linked to reasons for acting and to motivated action, e.g. fear of a dangerous object is linked to acting out of fear for the reason that the object is dangerous, and pity is linked to acting to ameliorate the condition of another for the reason that they are suffering. Others have no such direct (but only indirect) links to motivated action. In characterizing someone as ‘being emotional’, we typically mean that he is prone to emotional perturbations, given to outbursts of feeling, which he expresses freely, perhaps to excess, and tends to allow his emotions to cloud his judgement.

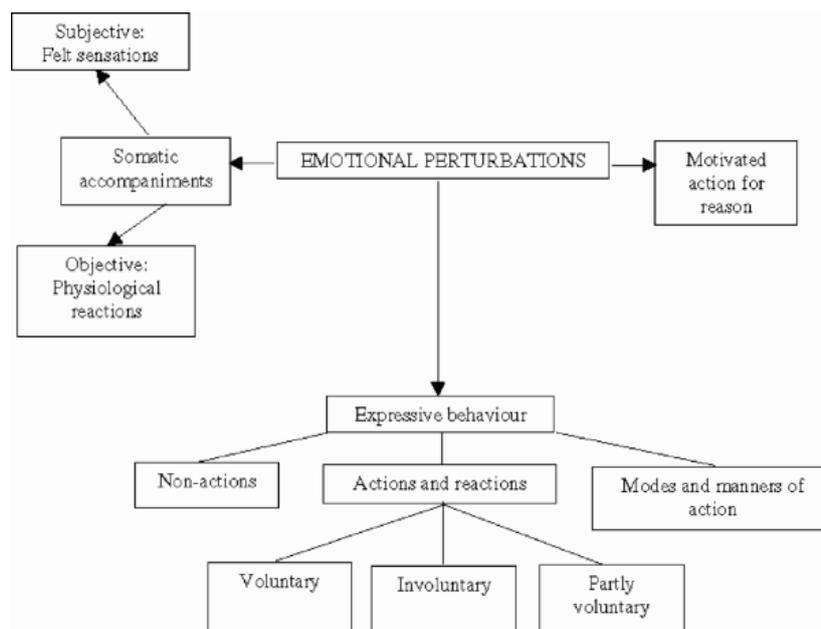


Fig. 4 — *Conceptual Links of Emotional Perturbations*

Emotional perturbations have further attributes which they share with emotional attitudes, e.g. causes, objects, agential reasons for the feelings and for their constitutive beliefs, reasons for acting, appraisal and evaluation. These will be examined below.

It is important not to allow the perturbational aspect of the emotions to occlude their attitudinal aspect, or to think that research on the perturbations characteristic of an emotion can provide an adequate account of that emotion. Neuroscientific work, influenced by the misconceived Jamesian theory of the emotions, has screened out the attitudinal, as well as the motivational, cogitative and fantasy aspects of the emotions. One may love or hate a person, an activity, a cause, or a place for the whole of one's life. One may be proud of the achievements of one's youth for the rest of one's days, and one may respect or detest, be envious or jealous of a person for years. One may be ashamed or guilty of one's misconduct for decades, and one's regret for one's follies may never cease. One's judgement may be clouded not only by emotional agitation and distress (perturbation), but also by one's long-standing resentments, envies or jealousies (emotional attitudes). Love may be felt as a perturbation to which those who are falling in love are susceptible, or as a standing attitude of conjugal, parental, filial or fraternal feeling. The emotional attitude of love is not a disposition to corresponding episodes of loving perturbation, but a lasting concern for the object of love, a standing motive for action beneficial to the beloved, a desire for shared experience, and a persistent colouring of thought, imagination and fantasy. The standing emotion of anger with a person is not a proneness to episodic outbursts of anger, but persistent ill-will and absence of amiability resting on the agent's reasons for his anger. The emotions of love, hate or envy, for example, consist above all in the manner in which the object of the emotion *matters* to one and the reasons for which it is important (one cannot feel indifferent about the object of one's feelings); hence also in the motives that move one to action — for one will act *out of* love, hate or envy. One's emotions are then evident in the reasons that weigh with one in one's deliberations, in the desires one harbours and in the thoughts that cross one's mind in connection with the objects of one's feelings. One's emotions are inseparable from one's fantasy life and imagination, one's wishes and longings (see Fig. 5).

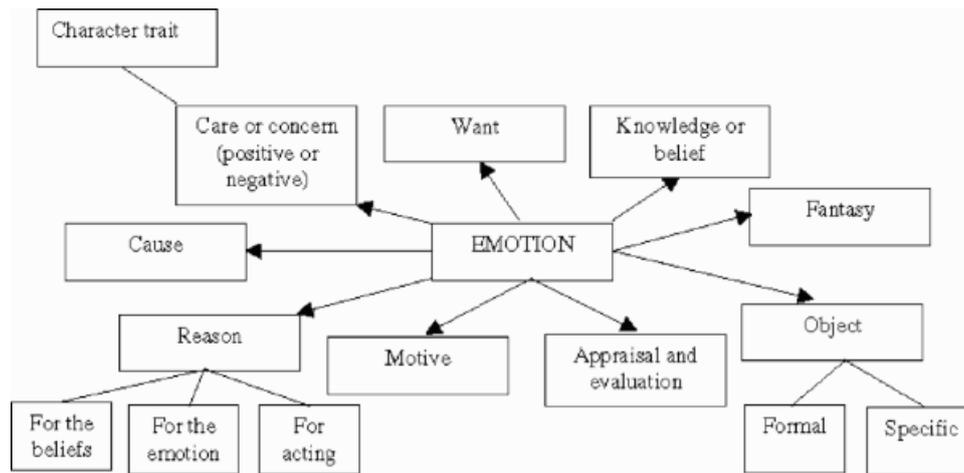


Fig. 5 — *Conceptual Links of Emotion*

It should be obvious that one cannot measure a person's emotion simply by the frequency or intensity of the emotional perturbations he feels. Fear may be manifest in the lengths one goes to avoid the situations that terrify one. Its motivating force cannot be quantified as rises in pulse-, breathing- or perspiration-rates can be. Rather, its strength is evaluated by the extent to which the emotion determines behaviour over time and the kind of behaviour it determines. The depth of a person's remorse is exhibited less in episodic outbursts of remorse, more in the endeavours to make amends and in the obsessive thoughts about his wrongdoing. The strength of a person's love is manifest not just in felt perturbations, but also in his concern for the welfare of the object of his love and in the sacrifices he is willing to make for the sake of what or whom he loves. One may concede that a long-standing emotional attitude *may*, given appropriate circumstances, imply a lower threshold for the onset of corresponding emotional perturbation (e.g. in the case of anger or hatred). But that is, at best, only part of the story, since appropriate circumstances may not obtain (given assiduous avoidance behaviour, as in the case of fear of heights), the agent may exercise self-control, and the relevant perturbational behaviour may not be that of the emotion in question (as in the case of love, which is exhibited in the wide variety of forms of care and concern).

It should be equally evident that the ways in which emotional attitudes are manifest in behaviour over time are highly conditioned by social conventions that partly determine within a social group what may *count* as an expression of love or hatred, gratitude or resentment, affection or contempt. Although there may be a natural foundation of expressive behaviour on which such

conventions are built, they vary greatly from society to society, from one historical period to another, and, within a given society, from one social class to another. Similar variability is exhibited by the grounds for an emotion, since what counts as a *good reason* for pride, resentment, indignation, contempt, etc. is a partial function of the culture and conventions of the society to which the person belongs. So too, the motivational character of an emotion, what forms of behaviour may be warranted by a given emotional attitude, is typically culturally conditioned.

Any experimental investigation of the emotions must take into account the complexity of the concept of an emotion, the conceptual diversity of the emotions, and cultural variability of the reasons for and the motivating character of the emotions to which human beings are susceptible. There is no single paradigm of an emotion that can serve as a conceptual prototype from which to generalize. Equally, one must beware of experiments on non-human animals as a basis for generalizations concerning human emotion. For the horizon of actual emotions as well as the horizon of possible emotions in animals is far narrower than with human beings. It is determined by the fact that animals are not language-using, concept-exercising creatures. They can fear something here and now, but they cannot now fear something elsewhere tomorrow, as we can. And they cannot feel such emotions as remorse, which requires a knowledge of good and evil, an awareness of having done wrong, and a determination to make amends. Animal emotion is neither reasonable nor unreasonable, whereas human emotion may be, since human beings may have reasons and justifications for feeling as they do, and the feelings they have may afford them reasons for acting. The study of human *emotions* is a study of *human* emotions. And the study of *human emotions* presupposes the background of specific cultural forms of human life.

Emotions generally have objects. If one is afraid, one is afraid *of* someone, or *that* something is going to happen; if one feels remorse, guilt or regret, it is *for* doing something; if one feels envy, it is envy *of* someone *for* his good fortune. It is important to distinguish the object of an emotion from its cause, since neuroscientists commonly confuse and conflate them. What *makes* one jealous is not the same as what one is jealous *of*; your indignant tirade may *make* me feel ashamed, but what I am ashamed *of* is my own misbehaviour. What one is frightened *by* is the cause of one's fear, what one is frightened *of* is its object. These can coincide in certain cases, but in others they cannot. For when the object of fear, hope or excitement lies in the future or if it is non-existent (fear of ghosts), what

one is afraid *of*, hopes *for*, or is excited *about* cannot be the cause of the emotion. What causes an emotion may be what sparks it off — a sudden thought, a casual remark or a reminder. What is crucial for the identification of an emotion is not its cause (of which the subject, e.g. an acrophobe, may be ignorant), but its object.

Emotions are linked in complex ways to what the agent knows or believes. For in so far as an emotion must have a proper object in order to qualify as the emotion it is, the agent must take the object of his emotion to satisfy the formal characteristics which determine the object as appropriate. If he fears A or A's action, he must believe that A and A's action are a threat. If he feels pity for another, he must believe that person to have suffered a misfortune. If he feels regret, remorse or guilt, he must believe that he has done something unfortunate or wrong.

This cognitive component in emotions has important ramifications. First, a person cannot ordinarily feel a certain emotion and fail to know what its object is. He cannot feel grateful and yet know neither to whom he is grateful nor what he is grateful for; he cannot feel ashamed and not know what he is ashamed of doing; he cannot feel pity yet know neither for whom nor for what. In *limiting cases*, one may feel objectless fear (*Angst*) or guilt; but these are necessarily exceptions to the rule.

Secondly, one usually has reasons for feeling as one does. If one fears A, it is because one knows or believes that A threatens an interest one has. One will normally have reasons for thinking that this is so, reasons one may adduce to explain or justify one's fear. Hence one's emotions can be reasonable or unreasonable. As already remarked, what counts as a good reason for a given emotion, *a fortiori* for a given form of behaviour motivated by that emotional attitude, is typically historically conditioned and (depending on the emotion in question) a partial function of social norms. So, despite the fact that one cannot feel an emotion at will, it makes sense to say of someone that he *ought* to feel proud or ashamed of himself because of what he did, or that he *should not* feel resentful of A since A could not help doing what he did. If a person's emotional reaction to a circumstance is not warranted, either at all or to the degree to which he feels it, we criticize him for the unreasonableness of his emotional response. It is unreasonable, we may say, to be jealous about something as trivial as *that*; or, while conceding that A's spouse's behaviour *is* an intelligible ground for jealousy, we may criticize A for the intensity of his jealousy, i.e. for his excessive reaction. A person may feel an emotion as a result of a false belief. Normally discovery of the falsity of the belief eliminates the

emotion. If the grounds for one's fear evaporate, the fear will normally evaporate with it. Conversely, things being thus-and-so may be a reason for feeling a given emotion — and those who come to know or to believe that things are so, and *who care*, will normally feel that emotion. They have a reason for so feeling. The reasonableness of emotions lies in such forms of sensitivity to reasons in a given social and cultural context, and it is here that the responsibility a person has for his emotions resides. The emotions we feel are reasonable (within the framework of the culture and times to which we belong) to the extent that they are directed towards an object that warrants the feeling, and to the extent that the intensity of the emotion felt is proportional to its object. Of course, the knowledge of the facts that constitute a reason for feeling such-and-such an emotion do not necessitate any such feeling. But if one does not respond appropriately to the tragic or joyful circumstance, one is deficient in sensibility, and lacks the feeling proper to the circumstance – which is a mark of *not caring* about things which, in general, we think we should care about.

§4. *Misconceptions: Damasio*

Damasio's work on emotionally incapacitating brain damage is renowned, and his insistence on a link between the capacity for rational decision-making and consequent rational action in pursuit of goals, on the one hand, and the capacity for feeling emotions, on the other, is thought-provoking.

Damasio's conception of the emotions is influenced by James, who held that emotions are the feelings of somatic disturbances consequent on the perception of an 'exciting fact'. An emotion, according to James, is not the somatic change, but the agent's perception of it. Every one of these bodily changes is allegedly perceived as soon as it occurs. One cannot abstract from an emotion 'all the feelings of its bodily symptoms' and find anything left behind other than a cold and neutral state of intellectual perception.⁹ Damasio himself sees 'the essence of emotion as the collection of changes in body state that are induced in myriad organs by nerve cell terminals, under the control of a dedicated brain system, which is responding to the content of thoughts relative to a particular entity or event.' (Damasio 1994, p. 139). The somatic changes are held to be caused by thoughts. Damasio's conception of thoughts is firmly rooted in the eighteenth-century empiricist tradition. Thoughts, he

⁹ James, W.: **The Principles of Psychology** (Dover, New York, 1950), vol. ii, pp. 449-51.

claims, consist of mental images (Damasio, 1994, pp. 107f.). The images constituting thoughts are comparable to the images of which perception allegedly consists, differing from them in being fainter or less lively. In this respect Damasio self-consciously but misguidedly follows the footsteps of Hume, thinking that if thought were not exhibited to us in the form of images of things and of words signifying things, then we would not be able to say what we think. But to say what one thinks is to *express* one's thoughts, not to *describe* them or *read them off* something else.

Damasio, unlike James, distinguishes *an emotion*, i.e. 'a collection of changes in body state connected to particular mental images that have activated a specific brain system' from the *feeling of an emotion*. 'The essence of feeling an emotion is the experience of such changes in juxtaposition to the mental images that initiated the cycle. In other words, a feeling depends on the juxtaposition of an image of the body proper to an image of something else, such as the visual image of a face or the auditory image of a melody' (ibid., p. 145). So, an emotion is a bodily response to a mental image, and the feeling of an emotion is a cognitive response to that bodily condition, a cognitive response 'in connection to the object that excited it, the realization of the nexus between object and emotional body state' (ibid., pp. 130, 132). Feelings of emotion, Damasio avers, '*are just as cognitive as any other perceptual image*, and just as dependent on cerebral-cortex processing as any other image'. However,

feelings are about something different. But what makes them different is that they are first and foremost about the body, they offer us *the cognition of our visceral and musculoskeletal state* as it becomes affected by preorganized mechanisms and by the cognitive structures we have developed under their influence. Feelings let us *mind the body ...* Feelings offer us a glimpse of what goes on in our flesh, as a momentary image of that flesh is juxtaposed to the images of other objects and situations; in so doing, feelings modify our comprehensive notion of those other objects and situations. By dint of juxtaposition, body images give other images a *quality of goodness or badness, of pleasure or pain*. (ibid., p. 159)

Accordingly, Damasio proposes the somatic marker hypothesis. The hypothesis is that somatic responses to 'images' (i.e. perceptions and thoughts) serve to increase the accuracy and efficiency of decision processes, screening out a range of alternatives and allowing the agent to choose from among fewer (ibid., p. 173). 'When a negative somatic marker is juxtaposed to a

particular future outcome the combination functions as an alarm bell. When a positive somatic marker is juxtaposed instead, it becomes a beacon of incentive' (ibid., p. 174). So somatic markers, constituted by the somatic response to situations confronting us, assist deliberation by highlighting some options and eliminating them. These somatic responses which we allegedly use for decision-making 'probably were created in our brains during the process of education and socialization, by connecting specific classes of stimuli with specific classes of somatic state' (ibid., p. 177). Culturally inculcated 'gut reactions' provide the basis for rational decision making. This leads Damasio to conjecture that the decision-making and executive deficiencies in patients suffering from lesions in the prefrontal cortices is explained by lack of somatic markers to guide them.

This idea is conceptually questionable.

(i) An emotion is not an ensemble of somatic changes caused by a 'thought' about (i.e. mental image of) an object or event.

First, even if a given emotional perturbation does involve a range of somatic changes, what makes the sensations sensations of fear as opposed to anger, and what makes the blushes blushes of shame rather than of embarrassment or of love is not the 'thought' or mental image, *if any*, that causes them, but the circumstances and the object of the emotion.

Secondly, if emotions were essentially ensembles of somatic changes caused by mental images, i.e. if that is what the term 'emotion' means, then learning the meaning of emotion words and hence learning how to use them would be a matter of learning the names of complexes of bodily changes with specific causes (hence akin to learning the meaning of an expression like 'giddiness' or 'seasickness'). But we do not learn the use of emotion words by learning sensation-names or names of overall bodily condition, but rather by learning what are appropriate objects of the relevant emotions, e.g. of fear (what is dangerous or threatening), of anger (what is annoying, offensive or wrong), of pride (worthy achievement or possessions), of guilt (one's misdemeanours), and so forth, and learning how to use these terms ('afraid', 'angry', etc.) in the expression of one's feelings towards the appropriate objects, in the description of the feelings (but not the sensations) of others, and in the giving of explanatory and justifying reasons for one's reactions and actions.

Thirdly, if emotions were ensembles of somatic changes caused by mental images, then one could not have good reasons for feeling a certain emotion, and would not be answerable for one's

emotions in the manner in which we are. For although there may *be* a reason (i.e. an explanation) why one has a headache, or why one's breathing-rate or heart-beat rises, one cannot *have* a reason (i.e. a ground or warrant) for such things. Given appropriate circumstances, we can say that someone ought to, and has good reason to, feel proud or ashamed, but we cannot say that he ought to raise his pulse-rate or increase his psychogalvanic reflex reactions.

Fourthly, one can feel an emotion E without any E-type perturbation. One can love a person, object (a piece of music, a book or painting, a landscape) or a value (justice, honour) without undergoing any somatic changes distinctive of love when one thinks about them. There need be no somatic changes accompanying the thought that the rate of inflation is likely to rise — but one may well fear that it will. If A did one an important favour in one's youth, one may remain forever grateful — but one need not break out in a sweat whenever one thinks of it. There are no distinctive somatic changes characteristic of pride in something — or of many other types of emotion and many other emotions with certain kinds of object. One might argue that *by definition* to feel an *intense* occurrent emotion does require *some* somatic changes. But even in such cases, the somatic changes do not *identify* the emotion.

To insist on these points is not to deny that there is a link between *certain* emotions and emotions directed to *specific objects*, on the one hand, and types of emotional agitation involving *inter alia* somatic changes, on the other. The emotional agitation may be *characteristic* of that emotion or of that emotion with that type of object, given appropriate circumstances. Nevertheless, the emotion *is* not the somatic changes that might be caused by the thought (or mental image) of the object of such an emotion. Moreover, it would be misguided to suppose that by studying the neural concomitants of artificially induced emotional perturbations (e.g. by pictures or music) and the effects on cognitive performance, one is actually studying the emotion in all its complexity (the kinds of reasons for the emotion (both perturbation and attitude), the kinds of motivation it affords (and why), the kinds of behaviour it motivates, its dependency upon social and cultural norms, the kinds of unreasonableness or irrationality that may be manifest and the reasons and causes of them).

(ii) Perceiving an object or perceiving that things are thus-and-so does not involve *having images* of anything – to perceive Paris is not to perceive or have an image of Paris; and, conversely, to have an image of Paris (as when one dreams or daydreams) is not to perceive Paris. It is equally

misguided to suppose that in order to think something or think of something it is either necessary or sufficient to have an image of anything, let alone an image of what one thinks or thinks of or of words that would, if uttered, express what one thinks or refer to what one thinks of. Moreover, it is mistaken to suppose that one thinks *in* images or that in order to speak with thought one must first say to oneself in one's imagination what one is going to say out loud. One can talk to oneself in the imagination (which involves auditory images) without thinking (as when one counts sheep in the imagination in order to *prevent* oneself from thinking), and one can think without talking to oneself in the imagination (as when one speaks thoughtfully to another).

Since neither thinking nor perceiving need involve images, the somatic changes that *may* be part of a given emotional agitation and which *may* (but need not) be caused by a thought (in the proper sense of the term) or by perceiving something need not be caused by mental images.

(iii) While there is a difference between feeling an emotion (e.g. jealousy) and realizing what emotion one feels (e.g. realizing that one is jealous), there is no difference between having an emotion and feeling an emotion (being jealous and feeling jealous), any more than there is a difference between having a pain and feeling a pain. Damasio's stipulated distinction between emotion and feeling an emotion has nothing to recommend it, since an emotion is not an ensemble of somatic changes and feeling an emotion is not the experience of such changes in juxtaposition to mental images that caused them.

(iv) It is mistaken to suppose that feeling an emotion is a cognitive response to a bodily condition caused by mental images. If, when frightened by a noise at night, I feel frightened that there is a thief in the house, and my pulses race, my (felt) fear is not a response to my racing pulses. What I was frightened *by* was the noise (not an image of a noise), what I was frightened *of* was a burglar's having broken in. I may or may not notice my racing pulses— but whether I do or do not, my fear of a burglary is not a response to them.

(v) Feelings of emotion are not *about the body* at all. What they are 'about' or 'of' is the object of the emotion. What a person is proud of may be his achievements, lineage, children, possessions, etc. — but not any somatic changes that may occur when he thinks of them. What a person feels guilty about are his wrong-doings, not any bodily perturbations that may occur when he thinks about them.

(vi) An emotional response need not be cognitively linked to the cause of the emotion or the cause of the somatic changes that may accompany an emotional perturbation. We are often ignorant of the causes of our emotional feelings. I may not know (and may be mistaken about) what *caused* me to feel love for Maisie or to hate injustice — but what I must know, what *is* ‘cognitively linked’ to these feelings, is *what their objects are*. If the connection of a feeling of emotion to what it is ‘about’, i.e. its object, were a causal one, then unless such causal knowledge is non-inductive, knowing what one is frightened of, angry with or about, proud or ashamed of would be a hypothesis. But I don’t discover the object of my feelings by tracing the causes of the perturbations (if any) that I feel.

(vii) One’s ‘feelings of emotion’, one’s love, hope, or pride, are not ways of finding out facts about ‘our visceral and muscoskeletal state’. Indeed, one’s emotions do not inform one either of the state of one’s body or of the state of the world around one. But one’s emotional perturbations may inform one of one’s emotional attitudes. A pang of jealousy may indicate that I am in the process of falling in love with Maizie, a blush of embarrassment may bring home to me that I am ashamed of having lied, my tears of grief may make me realize how much I loved Daisy. Far from one’s emotions informing one about the state of one’s body, the state of one’s body informs one about one’s emotions.

(viii) Damasio’s somatic marker hypothesis is misconceived. The emotions are not somatic images that tell one what is good and bad. Bodily reactions are not Ersatz guides to action, and do not inform us about good and evil. If one is indignant at a perceived injustice, what tells one that the object of one’s indignation is an evil is not that one feels flushed in association with the thought of the act in question. On the contrary, one is indignant at A’s action because it is unjust, not because one flushes in anger when one hears of it. One knows it to be unjust because it rides roughshod over someone’s rights, not because one flushes in anger. Indeed, the flush is only a flush of anger in so far as one is thus indignant. And one will feel indignant only to the extent that one cares about the protection of the rights of human beings (or of *this* human being).

One might conjecture that although Damasio may be perfectly correct in associating the capacity for rationality in practical reasoning and in pursuit of goals with the ability to feel emotions, the linkage lies in a common feature underlying both. Since the emotions do not let us ‘mind the body’, and since feeling the somatic reactions to circumstances is not a litmus-paper test for good and

evil, or for the beneficial and harmful, it is implausible to suppose that what is wrong with patients who have suffered damage to the ventromedial sector of the prefrontal cortex is that their somatic responses are awry or uninformative for them (as it were, a Pavlovian deficiency). But what might be investigated is whether the brain damage in the kinds of patient Damasio investigated affects the capacity to care or to persist in caring about goals and objectives. For such a deficiency would affect both their emotions and their ability to pursue goals over time. One feels no emotions about things concerning which one is indifferent, and one does not pursue goals efficiently unless one cares, for one reason or another, about achieving them.

Contrary to what Damasio claims, there need be nothing ‘hidden’ about the emotions of others. It is mistaken to say that ‘you cannot observe a feeling in someone else’ (Damasio, 1999, p. 42). It is equally mistaken to think that ‘you can observe a feeling in yourself’. We are prone to confuse the fact that we often do not show our feelings and sometimes indeed make an effort to conceal them, with the misguided idea that the emotions are in some deep sense ‘private’ and ‘hidden’. But this is confused. We can often see delight and rage in a person’s face, joy, anguish or horror in his eyes, contempt or amusement in his smile. We can hear the love and tenderness, the grief and sorrow, the anger and contempt in a person’s voice. We can observe their tears of joy or grief, cries of terror, joy or amazement, and blushes of embarrassment or shame. On the other hand, to feel an emotion oneself, for example, to feel proud or ashamed, is not to observe anything. This has multiple ramifying consequences for psychiatric theories that seek to explain such phenomena as autism in terms of children’s deficiencies in formulating theories about the psychology of others. But that is a tale for another occasion.

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