



Some Reflections on the Goal-Directed Theory of Emotion

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Abstract

In this paper, I discuss the goal-directed theory of emotion as advanced and defended by psychologist Agnes Moors. I give some reasons for supporting one of its main tenets, namely, that emotional episodes involve decision-making processes. I will however object that the theory has trouble to account for some aspects of positive emotions and in general to accommodate some instances of extremely positive and extremely negative emotions. I will also argue that, in order to account for the irrationality involved in emotional recalcitrance, some sort of duality of emotional mechanisms is also required.

Keywords Emotions · Goal-directed theory · Emotional valence · Emotional action · Theories of emotion

1 Introduction

Quite recently, some psychologists, notably Agnes Moors, have been advancing a new theory of emotion: the goal-directed theory (Moors, 2017a, b, 2022a, b; Moors et al., 2017). It is an interesting idea which, in many ways, abandons deep-seated convictions on emotions, like that they typically lead to fast but suboptimal behavior. Moors used to favor the (multidimensional) appraisal theory (see Scherer et al., 2001, for a review), which she says she has finally abandoned due to unfavorable empirical tests (Moors, 2022b, p. xiv).

The main idea is that most emotional episodes involve decision-making processes, the main difference with non-emotional decision processes just being that in the emotional case the goals at stake are more valued by the agent. It is, as Moors

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emphasizes, a difference in degree and not in kind. Also, these emotional decisions are mainly subserved by what psychologists call goal-directed processes, meaning that they select an action tendency by processing¹ expected utilities of action options, just as we are supposed to do in conscious deliberation. In this sense, emotions are rational in how they reach their output, at least as rational as conscious deliberation processes, and they are able of more flexible responses than typically assumed by traditional ways of thinking of emotions. Both are again two aspects of the goal-directed theory which clearly distinguishes it from common views. So, it is an exciting theory, with very interesting novelties which are good discussing.

For ease of exposition, I will break down the goal-directed theory into a few theses. This will prove helpful, I think, when I turn to my discussion of the view. Also, I defer discussion of the valence of emotional episodes according to the goal-directed theory until the second section, when I discuss some problems for the theory.

(D-M) What we call emotions are in fact decision-making processes (mainly) subserved by goal-directed mechanisms.²

(S) A (emotional) decision process starts with a noticed mismatch or discrepancy between a stimulus and a goal had by the agent (let us call this, “triggering goal”).

(G) The main difference between emotional episodes and non-emotional decision-making processes lies in the value the agent attaches on the triggering goal, which is high in the emotional case. All other differences (like the sense of urgency or the intensity of the feelings involved) originate in this fact.

From (D-M) and (G), we can infer an eliminativist stance towards emotions which is worth highlighting:

(E) Emotions, as we currently understand them, are not any scientific (or natural) kind. They are named as such what in fact are simply decision-making processes involving a valued triggering goal.

In my discussion of the goal-directed theory, I will highlight the appealing aspects of viewing emotional episodes as involving decisions, yet I will lay out considerations that problematize the theory. These considerations concern the role of bodily changes in some positive emotions; the valence of some extremely positive and some extremely negative emotional episodes; and some irrational emotional behavior, most notably emotional recalcitrance. In the last case, concerning emotional

¹ According to Moors and the proponents of the goal-directed theory, the processing of expected utilities may involve computation (as in the deliberation case) or mere activation of representations of outcome values and expectancies previously stored. For expository reasons, I prefer to concentrate on the case of computation of expected utilities for the time being. Later on, when I discuss irrational emotions, the other possibility, mere activation, will become very relevant.

² The goal-directed theory confers only a residual role to stimulus-driven mechanisms (for the notion of stimulus-driven mechanism, see below). They may intervene only when two action options appear equally attractive or when they activate a specific action tendency which is a way of implementing a more abstract tendency activated by a goal-directed mechanism. It is also claimed, however, that these two roles can also be played by goal-directed mechanisms (Moors, 2022b, pp. 224–5). Also, notice that (D-M) is only a first stab at the theory’s main idea, for expository purposes. Later, when I start the discussion of the theory, I will replace it with a more precise statement.

recalcitrance, I will conclude that the goal-directed theory needs to postulate some sort of duality of mechanisms subserving emotional decision-making processes.

2 The Goal-Directed Theory

I will first begin by laying out what I take to be the essentials of the goal-directed theory. So, this will try to be merely descriptive and clarificatory. I will then turn to my criticisms in the next section.

I will start with a clarification of (D-M). Psychologists distinguish between two types of mechanisms leading to a response after detecting a stimulus: the stimulus-driven and the goal-directed mechanism (Dickinson & Balleine, 1994). In the stimulus-driven case, a response is selected by activating an associative link between a representation of the stimulus and a representation of the response. Since I will be concerned in this paper with mechanisms subserving decisions to act, we can consider the response representation to be here an action tendency, a mental disposition to perform a certain behavior. When the mechanism is stimulus-driven, such an action tendency is activated by virtue of the existing associative link between the representation of the stimulus and the action tendency without the intermediation of the representation of any goal.

Moors claims (Moors, 2022b, ch. 7) that most extant theories of emotion, both psychological and philosophical ones, assume that the core of the process leading to an emotional response from an emotional stimulus is subserved by a stimulus-driven mechanism, including the affect program theory (Ekman, 2007), the perceptual view (Tappolet, 2016), the Jamesian theory (James, 1884), neo-Jamesian views such as Prinz's (Prinz, 2004), the attitudinal view (Deonna & Teroni, 2012, 2015, 2022), the motivational view (Scarantino & Nielsen, 2015), the aforementioned appraisal theory, and network theories (Lewis, 2005).

It is important, however, to make some clarificatory qualifications here. The aforementioned views differ widely as to what sort of things are emotional stimuli or emotional responses. For instance, according to many versions of the affect program view, stimuli will be specific or concrete like the presence of a bear or other specific stimuli associated to innate fear elicitors (still, in some versions of the view, appraisals enter also the picture, see Tooby & Cosmides, 1990). According to the perceptual view, however, the emotional stimulus could be said to involve a molar appraisal, in the sense that emotion involves a phenomenological representation of (the instantiation of) an evaluative property, for instance, fear of a bear would involve feeling the presence of the bear as dangerous, while according to the appraisal view it will be a pattern of molecular appraisals, namely, that the presence of the bear is goal relevant, goal incongruent, and difficult to control.³

What matters in order to sharply demarcate the goal-directed theory from all these other theories is that according to the other theories the mechanism leading from

³ Some versions of the appraisal view, like Lazarus', include a molar appraisal too, a sort of summary of the molecular ones (Lazarus, 1991).

these (allegedly varied in character) inputs to the emotional responses is a stimulus-driven mechanism. Also, emotional responses may differ across all these theories, sometimes not being, or not including only, action tendencies, but also autonomic changes and feelings (as is the case with the affect program view, the appraisal view, or the Jamesian view). Again, what matters is the nature of the mechanism leading to these responses. The crucial issue is that these emotional responses, and notably action tendencies, are triggered, according to these theories, when an appropriate stimulus occurs, in a merely associative process which does not involve the activation of an outcome representation. As Moors says: “once the key [the right stimulus configuration] fits the lock, the door pops open” (Moors, 2022b, p. 208).

Another important qualification is that most of these theories allow that an emotional response can be influenced, or even disregarded, by the intervention of regulative processes. Importantly, this emotion regulation will typically take the shape of a goal-directed process. This is so even in the case of the affect program view. Display rules (Ekman, 1992) are supposed to regulate emotional behavior by weighing goals that the agent may want to attend to. For instance, I may conceal my being afraid of giving an academic talk in front of an exigent audience and so try to satisfy my goal of appearing self-confident and competent.

Emotion regulation may also involve weighing the emotional recommendation against other motives. Thus, it is generally conceded that the emotional recommendation for action can be disregarded by the agent, even in cases where the emotion is powerful. Suppose I am a soldier confronting an impending peril of death. I am of course terrified, but I may resist my tendency to flee from the army if I happen to have some sort of Kantian sense of duty, or if I want to avoid the sort of social marginalization reserved to cowards and traitors. Here I am weighing different goals, self-preservation, social acceptance, and patriotic duty, as well as expectancies of fulfilling them. Hence, emotion regulation can occur before the action is initiated. It is also claimed that emotion regulation can be antecedent even to the eliciting stimulus if the subject finds it likely that such stimulus will take place (Gross & Thompson, 2007). Importantly, Moors distinguishes between emotion regulation and emotion competition. In emotion regulation, there is a goal about the emotion (for instance, the goal of counteracting the emotion) while in emotion competition the action tendency involved in the emotional process may simply compete with others, without there being any goal about controlling or counteracting the emotion. This may occur as the same stimulus may be discrepant with different goals and two different actions can be called for in order to reduce the discrepancy. The example about the soldier may of course go in either of these two ways, regulation or competition, depending on the specific details of each particular case.

Also, in the case of theories suggesting that the crucial emotional response involves an action tendency, like the appraisal view, the attitudinal view, or the motivational view, it is insisted that such action tendency may be abstract and may or may not translate into overt behavior. Suppose again that I have spotted a bear and, as a result of a stimulus-driven process, I activate the action tendency of fleeing. Still, this more or less abstract action tendency needs to be concretized in another tendency adapted to the contextual circumstances. Suppose there is a fence in front of me, but I feel I am not in good shape to jump over it, hence I will consider an

alternative way of fleeing, say, by running and hiding behind a nearby oak tree. All these theories suggest that this search for ways to implement the goal of fleeing by defining contextually sensitive subordinate goals (like, running and hiding behind a certain tree, or jumping over a fence) is actually subserved by a goal-directed process, that is to say, a mechanism by which the agent considers the best way, in the contextual circumstances, to fulfil a goal.

So, most if not all theories of emotion agree that goal-directed mechanisms have an important role to play during the process of eliciting emotional behavior: by helping to implement different mechanisms for emotion regulation, like weighing the emotion's recommendation against other goals the agent may also harbor (see, e.g., the rational control phase in Scarantino & Nielsen, 2015, pp. 2989); or by helping to translate an abstract action tendency into a concrete and successful action.

Now the originality of the goal-directed theory of emotion lies in that it postulates that the emotional action tendency (which may or may not translate into overt behavior) is also activated as a result of a goal-directed process. How this goal-directed process specifically operates will be explained in a moment, when I comment on thesis (S). For the moment, we must clarify the notion of goal-directed mechanism. The main idea is that, when applied to a decision-making process, the mechanism is goal-directed when it activates the action tendency corresponding to the action option with the highest expected utility. This means that the mechanism crucially involves processing the expected utility of different action options, that is to say, which goals will each action help to fulfil, how valued are such goals, and which is the expectancy that the action will actually fulfil them. The system chooses that course of action that maximizes the satisfaction of most cherished goals. In a nutshell, and in more common terms, the goal-directed mechanism consists in devising a good strategy for fulfilling an important or, in the circumstances, salient goal of the agent.

This is what typically occurs in cases of conscious deliberation. Suppose, for instance, that I am tired and must decide whether to continue working on my paper till late or to leave it for tomorrow. When deciding which course of action to take, I may consider which goal to give preference here, namely, my getting some rest or my finishing the paper, and the expectancy for each action to reach each goal. For instance, I may think that given how tired I am is unlikely that I do a good job in finishing the paper without taking some rest.

As Moors stresses at different places, the fact that emotional behavior is subserved by a goal-directed mechanism gives to the emotional response a flexibility and adaptability to the contextual circumstances which is characteristic of such mechanisms and is typically absent from the aforementioned emotion theories. This is consistent with the common observation that the same emotion may give rise to different responses to the same stimulus in different circumstances. For instance, an animal detecting a discrepancy between a predator and the goal of self-preservation may in some cases freeze or even fight instead of fleeing. The goal-directed theory nicely explains this. Depending on the perceived circumstances, the animal may consider that the goal of reducing the said discrepancy may be better served by freezing or fighting rather than fleeing; or it may directly consider the expected utilities of concrete avoidance actions.

To anticipate an objection, let me hastily add here that the goal-directed theory, like so many recent views in psychology, does not adhere to the well-known two-systems theory (Kahneman & Frederick, 2005). On this traditional view, the stimulus-driven mechanism would be part of system 1 mechanisms, and hence be fast, automatic, unconscious, associative, and suboptimal, while the goal-directed mechanism will be system 2 and, therefore, slow, conscious, rule-based, and optimal. Moors joins the recent consensus in psychology that there is no good reason to think that all these features tend to go together and moreover she points to empirical evidence that goal-directed mechanisms can run unconsciously and automatically, so that they can be what selects an action response, or what processes expected utilities for action options (Moors, 2022b, p. 223). I shall not question this contention in this paper.

Let us now turn to thesis (S). According to the goal-directed theory, all decision-making processes start with a noticed mismatch or discrepancy between a stimulus and a goal had by the agent. This in turn originates the search for reducing this discrepancy. There are three possible strategies. The first, called assimilation, consists in engaging in behavior, following a goal-directed process leading to an action which reduces or eliminates the said discrepancy. The second, called accommodation, consists in swapping the discrepant goal with another goal. The third one, called immunization, consists in reinterpreting the stimulus situation so that it no longer appears as goal-discrepant. For instance, suppose I have a sudden craving for yoghurt. I look in my fridge and see there is not much left. I may decide to go to the store to buy some more (assimilation); or I may decide that since I am on diet I should not eat anything till dinner time (accommodation); or I may decide that the yoghurt I have left in my fridge is enough to satisfy my craving (immunization). Also, in the case of assimilation, if the outcome of the action does not eliminate completely the discrepancy with the triggering goal, another cycle will start where a new response will be selected to reduce the remaining discrepancy. This process will go on until there is no discrepancy left or other goals take over.

As explained, according to the goal-directed theory what happens when we are undergoing an emotional episode, say, Jones is angry with his boss and is considering retaliation, is not different from the yoghurt case in processual terms. Hence, something the boss has done, overloading Jones with work while they are more lenient with other employees, is interpreted by Jones as being disrespectful and thus appears discrepant with Jones' goal of being respected by his boss (and workmates). So, Jones may consider retaliation (assimilation), say, by reporting badly on his boss when his company asks him to do so, assuming that such action will discourage further disrespectful behavior; or he may give up the goal to be respected by his boss and concentrate instead on the goal of maintaining his job and being paid for it (accommodation); or (immunization) Jones may decide that the boss overloads him with work because they think Jones is their best and most competent worker. The only relevant difference with the yoghurt case (thesis G) is just the intensity and heat of Jones' case by comparison with my banal dilemma about yoghurt. This would be due, according to Moors, to the fact that the goal at stake, the goal triggering the process, is more valued by Jones than how I value my goal for yoghurt.

Expanding on thesis (G), it follows from the goal-directed theory that the intensity of the emotional episode will be correlated with the degree of importance the agent attaches to the goal triggering the process. Moors suggests that what we call unemotional decisions are in fact standard decision-making processes involving a poorly valued triggering goal. Also, the degree to which an action tendency is felt depends on the level of activation of such response, which is influenced by the value of the goal at stake. From a cold and unemotional decision to the frenzy of spotting a bear in the middle of the woods, there lies a continuum with no other theoretically relevant difference than the value attached to the triggering goal, according to the goal-directed theory. What we call emotions, therefore, cannot be singled out as involving a special-purpose mechanism, nor as concerning specific stimuli, goals, or action tendencies. So, no relevant scientific category corresponds to emotions (thesis E).

3 Some Assets and Some Concerns About the Goal-Directed Theory

I will now discuss some assets and concerns of the goal-directed theory as related to each of the three main highlighted theses, (D-M), (S), and (G).

3.1 On Thesis (D-M)

Regarding thesis (D-M), I find the idea that emotional episodes involve decision-making processes quite appealing. There are three considerations that I think back up this hypothesis or at least make it worth considering. First, there is the well-known fact that emotional episodes are usually accompanied with bodily changes. This is really characteristic of emotions. Other mental phenomena, like beliefs, for instance, are not. Many theorists conjecture that these changes are not arbitrary, but they rather prepare the body for taking action (see, among others, Panksepp, 1998; Prinz, 2004; Deonna & Teroni, 2012). Assuming that this conjecture is correct, then thesis (D-M) would offer a straightforward explanation of it: emotional episodes are decision-making processes, so bodily changes emerge in order to allow the body to perform the action emotionally selected. Actually, and using the framework of the goal-directed theory, we may conjecture that bodily changes occur as they prepare the body to implement the action tendency activated (Moors, 2022b, p. 217).

Second, emotional episodes also typically involve action tendencies that we can feel. Now, sometimes, in the heat of emotional action, emotional action tendencies can fail to be phenomenologically conspicuous. But consider emotions in fiction. When watching a terror movie, one will not of course flee in panic from the cinema, because one knows one is being exposed to a fictional situation. But when undergoing intense fear by watching a particular scene of the movie, I bet one can feel the tendency to flee from the scene, very conspicuously. As we do not for a moment think of translating such tendency into behavior it is, as I say, a case in which the action tendency can be clearly felt and becomes phenomenologically salient.

Cases of emotion regulation also make action tendencies phenomenologically salient. Thus, when really enraged with someone, one can clearly feel the tendency to aggression, even though one appears calm and unmoved. Now, what is the point of action tendencies being involved in many emotional episodes? Again, thesis (D-M) provides us with a straightforward answer: because emotional episodes are decision-making processes, the action tendency being in fact the upshot or end result of them. As Moors rightly points out, action tendencies can be more or less abstract, some of them being subordinate to others (e.g., a tendency to avoid, a tendency to flee, a tendency to jump over a fence, a tendency to move up one's right leg first...), just as regular desires are (a desire to get a promotion, a desire to work harder, a desire to finish a paper tonight...).

Yet I think that action tendencies are not the analog of desires but rather the analog of intentions, as they should be according to (D-M), given that intentions are the upshot or end result of a deliberation. And Moors (2022b, p. 217) concurs. A reason for thinking of emotional action tendencies as intentions is some of their functional role properties. As famously pointed out in Frijda (1986, 2007), emotional action tendencies typically take control precedence, meaning, among other things, that they persist in the face of obstacles and that they tend to interrupt other ongoing plans for action. This is consistent with the functional role of intentions as they are mental states which exert an immediate control of action (Bratman, 1987; Searle, 1983).⁴ Hence, to sum up, action tendencies are typical of emotional episodes, and they are intention-like mental states. The goal-directed theory, and in particular claim (D-M), can nicely integrate this feature as action tendencies, just as intentions in non-emotional decision-making processes, can be regarded as the upshot of emotional decision-making processes.

Third, and most importantly, thesis (D-M) can also easily account for the fact that sometimes emotional episodes do not involve action tendencies nor somatic phenomenology (Ballard, 2021; Mitchell, 2021). Adduced examples here involve regret, nostalgia, or sadness. Consider sadness. Rather than action, sadness leads to a general suspension of the interaction with the world, some even think of sadness as involving an "inaction tendency" (Scarantino & Nielsen, 2015). Episodes of sadness are commonly thought to arise as responses to situations which involve the loss of something valued by the agent, for instance, the loss of a beloved one (Prinz, 2004). Now, in a case like this there is no way to take action and repair the mismatch with the goal of being in the company of the deceased person. So, to use the terminology of the goal-directed theory, it is most probable that an accommodation strategy arises in this case as the agent considers a different goal and learns to live with the impossible satisfaction of the other one. For instance, the subject may consider the goal of interacting with the deceased in a symbolic way and try to attain it by putting photographs of the deceased in places where they can look at them frequently, by doing those things the deceased liked or appreciated, or by pretending that they are dialoguing with this person.

⁴ Frijda himself, and in spite of all these similarities, distinguished, however, between emotional action tendencies and intentions (Frijda, 1986).

This last point is worth emphasizing. Some emotion theorists rightly noticed the connection of emotion with action. “Emotions gear up for action,” said Nico Frijda. This is, I think, an insightful point and one worth making given the prominence of emotion theories that only remarked their cognitive, or their phenomenological, aspects (like judgmental theories –Nussbaum, 2001; Solomon, 1976– or Jamesian theories). Yet, some theorists have tended to embrace the extreme view that emotional episodes always involve action tendencies, thus leaving an explanation of episodes of regret or sadness an almost impossible task to accomplish (Deonna & Teroni, 2015; Cochrane, 2018; Hufendiek, 2016). Again, thesis (D-M) is very illuminating in this respect, because not all decision-making processes end with an action tendency. In some circumstances, and after carefully considering the matter, we may decide to do nothing in particular. I may decide, for instance, not to alert my nephew about a mistake I think he is committing as I think it is better that he realizes this by himself and so do nothing about it. To sum up, if emotional episodes are decision-making processes, then the connection with action (tendencies) is precisely the one we commonly observe: quite frequently, but by no means always, emotions involve action tendencies. And when they do not, this is so because that is the upshot of the decision-making process in question.

3.2 On Thesis (S)

Moors justifies (S) in a very appealing way: “behavior only occurs when there is need for it, when there is a discrepancy between a stimulus and a goal” (Moors, 2022b, p. 220). This seems straightforward. The machinery of the decision-making system is engaged only when it appears to be the case that what goes on in the world is not according to some goal of the subject. Yet, accepting (S) makes it difficult to make sense of some aspects of positive emotions. Let us see why.

According to the goal-directed theory, valence (the negative or positive character of an emotional episode) is to be accounted for in terms of goal-discrepancy. Goal-discrepancy amounts to an appraisal of goal congruency, with goal congruence giving rise to positive valence and goal incongruence to negative valence. That explains the direction of valence (positive/negative) whereas the magnitude of congruency or incongruency would explain the extremity or intensity of valence (more/less positive/negative) (Moors et al., 2021). It is important to note that, according to the goal-directed theory, valence is felt and so its negative or positive character is supposedly phenomenologically represented, therefore involving certain positive or negative feelings.⁵ Thus, for instance, a largely goal-discrepant stimulus (that is to say, a stimulus appraised by the agent as largely goal incongruent) will give

⁵ This is more easily understood as a case of cognitive phenomenology, since the mere apprehension of the congruency of a stimulus with a goal, or the mere estimation of expectancies, does not seem to involve any sensory component. As it is well known, the existence of cognitive phenomenology is hotly contested in philosophy. I cannot, however, dwell into this issue in this paper. In any event, it is good to note that, according to Moors, the phenomenology of emotional valence also involves a sensory component as the subject typically imagines the outcomes of possible actions or the consequences of inaction (see Moors, 2022b, p. 222).

rise to an episode with strong or intense negative valence involving intense negative feelings. Similarly, appraisals of goal congruency will generate positive valence, its intensity depending on the magnitude of the match noticed between stimulus and goal.

Importantly, according to the goal-directed theory, valence in an emotional episode is not only generated by comparison between stimuli and goals but also by the expectancy that an outcome of an action will reduce a given goal-discrepancy, high expectancies giving rise to positive valence and poor expectancies to negative valence (Moors, 2022b). Also, some goal-directed theorists, notably Moors, see valence as “a bipolar dimension of feelings ranging from extremely negative to extremely positive...an increase in positive affect entails a decrease in negative affect. Mixed affect is only possible if different entities are evaluated” (Moors et al., 2021, p. 2). Now, if we take into account that there are different valence-generating moments along a given emotional episode (comparison goal-stimulus, expectancies of reducing a goal-discrepancy, a remaining goal-discrepancy after an action has been performed, which would start a new action cycle until a perfect match is achieved or other goals take over...), it is plausible to assume that the valence of an emotional episode may vary across the unfolding of the whole episode. I will also be assuming that its valence at a particular moment will be the net result of the amount of positive and negative valence contributed by different elements of emotion generating valence up to this point.

Now, this account of valence, when coupled with theses (S) and (D-M), leads to some problems when trying to account for positive emotional episodes.

As Moors says, a selection of an action tendency only starts when the agent notes some discrepancy with a goal. Now, some positive emotions do not seem to lead to any particular action nor, more importantly, to initiate any decision-making process, in the sense of selection of an action option. I can experience pride when reading a complimentary review of a book of mine, without willing to do really nothing about it. Or, I may feel amused at a joke, again without feeling inclined in the least to do anything about it. It is true that not all decision-making processes end up with an action, or even with an action tendency. I discussed previously some examples in this regard. But the problem with some positive emotions, like being amused at a joke or proud of a compliment, is that they do not seem to initiate any decision process. The subject in these cases does not seem to be inclined in the least to start a decision-making process.⁶

Moors sees such episodes of positive emotions as cases in which, as a perfect match is detected with a goal, a process leading to a selection of an action option for that goal is aborted, that is to say, it never takes place (Moors, 2022b, p. 216). What

⁶ As we saw, in some negative episodes, notably in sadness, the subject may not feel any inclination to act, but notice that this is different from the case of positive emotional episodes like some cases of pride or of joy. In the case of sadness, as the subject will detect a strong mismatch between the stimulus and a cherished goal, they will initiate a decision-making process often favoring some accommodation strategy. In less technical words, the subject will try to find ways to cope with their loss.

we have in these cases are then states with perfect or extreme positive valence, a thesis aligned with our intuitions.

Doubts emerge, however, as to whether cases like these are to be regarded as genuine decision-making processes. After all, no selection of an action option is even initiated in these cases. Yet, as implied in some of her most recent writings, and as she has made clear to me in personal communications, Moors actually regards emotions as goal-directed cycles, rather than decision-making processes. Such cycles would comprise a discrepancy detection phase and, in case a discrepancy has been noted, an action selection phase. Positive emotions leading to no action selection, like the above cases of pride or amusement, would then only comprise the discrepancy detection phase, as no discrepancy with a goal is noted in these cases.

All this means is that the formulation of theses (D-M) and (S) should be revised to take into account these cases of (extreme) positive emotions. Perhaps the most obvious way would be to replace (D-M) with (D-M)*, where (D-M)* would read: “emotions are goal-directed cycles, comprising a discrepancy detection phase and an action selection phase.” Also, (S) should then be replaced with (S’): “an action selection phase starts with a noticed discrepancy with a goal.” In fact, however, if we identify decision-making processes with the action selection phase of Moors’ goal-directed cycles, then one may well leave (S) unchanged and change only (D-M). Hence, instead of (D-M), one may write (G-D-C) (for goal-directed cycle):

(G-D-C) What we call emotions are in fact goal-directed cycles,⁷ comprising a discrepancy detection phase typically followed by an action selection phase, or decision-making process, a process mainly subserved by goal-directed mechanisms.

I should also slightly modify claim (E) as follows:

(E)* Emotions, as we currently understand them, are not any scientific (or natural) kind. They are named as such what in fact are simply goal-directed cycles involving a valued triggering goal.⁸

It would then seem that (G-D-C) coupled with (S) and (G) can nicely account for cases of positive emotions leading to no action nor action exploration. Yet, some problems still remain. First, recall that I argued for three explanatory virtues of (D-M). Two of them, involving the role of action tendencies in emotion as being typically but not always present, are still retained by (G-D-C). But the first one appears doubtful now. I hypothesized that the goal-directed theory can account for the bodily changes involved in emotional episodes as a way for the body to prepare for the action option selected. But if this is correct, in cases where no decision-making process starts because a perfect match with a goal is detected, we would

⁷ Recall that these are meant to be cyclical processes, in that (the representation of) an outcome is fed back as a new input which starts a new goal-directed cycle until no discrepancy with the triggering goal is left.

⁸ The notion of triggering goal would also require a minimal adjustment, now meaning the goal triggering a goal-directed cycle.

expect then no bodily changes to occur. Yet, this is plainly not so in cases of pride or amusement as the ones discussed above. There, typical bodily changes occur, most notably in the case of amusement. But what is the point of such changes if no action selection phase occurs in these cases?

Second, some positive emotions, unlike the above examples of pride and amusement, typically lead to action exploration. In fact, it is a common view that positive emotions tend to lead to an expansive attitude, increasing both the agent propensity to think and explore and their propensity to act (in spite of exceptions, like in the cases of our first problem) (Fredrickson, 2001). Moors takes this into account when she says that the matching of a stimulus with a goal can still initiate a decision-making process because the match may not be perfect and should then still be reduced to a certain extent or because satisfaction of one goal may just open up the quest for satisfaction of another goal (Moors, 2022b, p. 220). Yet, notice that as a positive emotion opens up possibilities for action and initiates decision-making processes, then of course noticed discrepancies with goals will occur instilling a certain degree of negativity to the whole process. Now, even though one may perhaps argue that the net result of the whole episode may still be positive (because of the initial perfect or quasi-perfect match with the triggering goal or estimated high expectancies), still it follows from the theory, as we have seen, that the resulting valence would not be as positive should these decision-making processes not occur. This seems counterintuitive. An euphoric, or an enthusiastic, subject in a frenzy of activity would probably report extreme positive valence, not somewhat diminished positive valence.

Third, extreme negative emotions seem also perfectly possible according to the goal-directed theory. They will be cases in which a large mismatch is noticed with a goal, as large as you want, and the desperate agent cannot find responses with a minimal expectancy to reduce such discrepancy. Yet, this may not cover all cases of extremely negative emotions. For instance, an episode starting with a noticed large goal-discrepancy but such that it selects a response with an estimated very high expectancy of eliminating such discrepancy would seem to deliver a mild valence, as the source of negative valence and the source of positive valence, both powerful enough, would seem to cancel each other. But, again, this seems counterintuitive in some cases. Consider, for example, an enraged agent who devises a rude but effective way of restoring their respect and clearing up the offense. It is hard to think that during all this violent episode the valence is not intense enough, and negative. Also, as usually observed, intense anger tends to linger on, with its intense negative valence remaining even when the subject thinks they have responded appropriately.

3.3 On Thesis (G)

One explanatory virtue of (G) which is good pointing out here is that it explains the control precedence of emotional action tendencies as described by Frijda. If the goal involved in emotion is the one most cherished by the agent, it is of course to be

expected that emotions tend to interrupt other ongoing decisions or that they involve an urge and haste to complete them.

I think, however, that the goal-directed theory has also trouble to account for the irrationality of emotion. As we have seen, Moors stresses that on the goal-directed theory the emotional response appears as more flexible than as thought by most other theories of emotion. This is good as far as it goes. But it can also be a *prima facie* problem when considering irrational emotions, since such irrational responses typically show rigidity or insensitivity to changes of values or to updated information.⁹

Consider the spider phobic who is aware of their condition and goes to therapy as they are convinced that their phobia is irrational and should be treated and, eventually, overcome. Suppose that this person undergoes exposure therapy and, as they are put a small spider on their hand, they experience dreadful fear, and they have pains to control themselves and not get rid of the spider and flee from the scene. From the perspective of the goal-directed theory, as the goal at stake, namely self-preservation, is presumably the one most cherished by the subject, it would appear that escaping behavior would become quite rational after all (in fact, controlling themselves and avoiding flight would appear, counterintuitively, as irrational). Recall that what happens to the subject according to this theory when the spider is put on their hand is that such event is perceived as being goal-discrepant with safety and then a goal-directed mechanism is engaged issuing as the action with the highest expected utility just getting rid of the spider and running away as fast as possible.

Or consider more mundane cases of emotional recalcitrance. These are more subtle cases of irrationality the explanation of which is surely more challenging. Consider the person who is perfectly aware that flying is the safest way of travelling but still panics as soon as they consider the prospect of taking an airplane. Or the case of the accomplished musician who suffers from stage fright (for what I know, even experimented professional musicians suffer from stage fright, at least to a certain degree). The musician in question knows that their fright is unfounded as their technical level greatly surpasses the difficulties of the pieces they have to play. Moreover, they rightly know that fright will seriously worsen their performance, enhancing the possibility of making mistakes and affecting the sonority of their performance. But still, as soon as they are on the stage and they notice the audience in silence paying attention to them and that the baton of the conductor is about to lower, well, then they have big trouble managing their intense fear.

Emotional recalcitrance is specially challenging because in many cases where subjects note a conflict between their emotional responses and their best judgment, they manage to suppress their inappropriate emotion, often without much effort. Consider for instance this typical case. I enter home and I hear a noise. I may feel intense fear until I remember that it is Friday and my household assistant should be in. After this, my fear abates. Or this other case: I read in the paper the result of the weekly lottery and see that I have won. I start to jump out of joy. Then, I realize I have been looking into the wrong lottery. In fact, I have won nothing, and

⁹ I am of course understanding rationality here as instrumental rationality, as it is commonly done when discussing the explanation of action.

my joy rapidly vanishes. There are countless of cases like this. But in some cases, like the stage fright case, the emotion becomes recalcitrant and stubbornly defies the subject's best efforts to suppress it. I think it is inescapable to conclude, when considering the phenomenon of emotional recalcitrance, that we need to postulate two different emotional mechanisms and that, depending on the mechanism at work, the emotion can, or cannot, be suppressed.

Moors is of course aware of the problem of accounting for irrational emotions and considers some things that may go wrong in a goal-directed mechanism and hence result in irrational behavior (Moors, 2022a). One thing is that the agent misconceives which is their most cherished goal. This however does not seem to apply to the phobic. If we ask them, they will agree that their most cherished goal is indeed self-preservation. So, the irrationality of their phobic behavior should come from another quarter. Another possibility is that the agent miscalculates some expected utilities. It could perhaps be argued that the subject wrongly computes their holding a spider on their hand as having a high expectancy of leading to a deadly event. This seems a quite reasonable diagnosis of the case, but the trouble is that the phobic subject may be quite aware of this and moreover they may wholeheartedly endorse that such expectancy is utterly low and should in fact be ignored. But if so, what then explains their (irrational) emotion?

One can explain, from a third person perspective, why we think that the behavior of the phobic is irrational by relying on Moors' suggestion: such behavior involves a mistake, on the part of the subject, when computing expected utilities. But, of course, one cannot explain, in the same way, why the behavior of getting rid of the spider appears as irrational also from the first-person perspective. If the subject really thinks that it is ridiculously unlikely that the spider on their hand causes any serious trouble and emotions involve decision-making processes subserved by goal-directed mechanisms, then they should not get rid of the spider, nor feel inclined to do so. To suggest that they do not really think it unlikely sounds preposterous in this case. After all, the subject's willingness to undergo therapy stems from their conviction that common spiders are no real danger for them.

Similar remarks apply to more mundane cases of emotional recalcitrance. For the musician, delivering a good performance, or pursuing their professional career, is clearly their most cherished goal in that context. And they of course think their stage fright is irrational and, in fact, counterproductive, as it may ruin what otherwise could be a brilliant performance.

When considering such cases, it seems inescapable that emotions, if decision-making processes, cannot simply be subserved by one single goal-directed mechanism. Our phobic person quite consciously and quite consistently holds that an encounter with a common spider is no reason for concern nor for fleeing from the scene. Somehow, the emotional system seems to disagree. Likewise, the musician knows their technical level makes it unjustified for them to be afraid of their performance. It seems that it is a case of two decision mechanisms colliding here; otherwise, it is hard to explain irrationality from a first-person perspective.

In a recent writing, Moors anticipates this objection and suggests two ways out for the case of phobias (Moors, 2022b, pp. 229–230). First, she suggests treating

believing that spiders are not dangerous as a mental action which would fulfil the goal of epistemic consistency (as it is a belief whose content sits well with the contents of other beliefs had by the agent) while running away from an inoffensive spider would be a way of trying to fulfil self-preservation. As self-preservation is supposed to be the most cherished goal in this case, then its satisfaction would win the competition. One trouble here is that it is again unclear why would the subject consider running away from a spider as a way to secure self-preservation if they hold the belief that the spider in question is not dangerous.

A second suggestion, which can be seen as partly addressing the problem of the first, is that a discrepancy with the goal of safety may be activated by (a perception of) the discrepancy with their goal for safety without the phobic subject actually endorsing its truth. The problem with this suggestion is that in this case there is no rational conflict at all. A subject may consistently think that a spider is not dangerous and consider the proposition that it is so without conflict if they do not endorse the truth of such proposition. Compare: I may believe that I am not rich and at the same time consider what would I do if I were. This is perfectly consistent because my considering to be rich does not involve endorsing that I am rich. It is tempting to think that this is what happens in cases of phobias. For instance, one may think that in the case of our phobic subject, they both think that the spider is not dangerous but at the same time consider—without endorsement—what they would do if it were dangerous, thus giving rise to a decision-making process and, a fortiori, to an emotion. This is perhaps what Moors has in mind with her second way out. But this cannot be the case, because it cannot explain why the phobic subject thinks their emotional behavior, and actually their emotion, is irrational and they should get rid of it.

In fact, it can be argued that none of these two suggestions seems to really tackle the real problem. The real problem is that the phobic subject actually undergoes a conscious decision-making process involving their belief that the spider is not dangerous and issuing as a result that they should not make a fool of themselves by running away. How then the subject ends up with two discrepant decision-making processes appears puzzling unless they are subserved by two different mechanisms.

More mundane cases of emotional recalcitrance only reinforce this conclusion. Recall the observation that in many cases of noted conflict between an emotion and a sound judgment, a subject is able to suppress the (discrepant) emotion. Only in some cases the emotion stubbornly remains, in spite of the desperate efforts by the subject to eliminate it. Again, this strongly suggests that emotional responses themselves are underpinned by two different mechanisms.

Moors seems to invoke to something like this dual mechanism account when she writes: “goal-directed processes do not have to rely on rule-based computation, but can also be based on the activation of preset knowledge via an associative operation” (Moors, 2022b, p. 223). The idea here is that some goal-directed processes involve the activation, rather than the computation, of representations of outcome values or expectancies. And this activation may occur in virtue of the existence of an association between a (possible) response and an outcome value or expectancy. Something like this associative mechanism would also implement cases of activation without endorsement as part of Moors’ explanation of phobias I just discussed. In spite of this associative element in the operation of such a mechanism, it would still count

as goal-directed as the response representation, the action tendency, would still require the activation of an outcome representation (by contrast to a stimulus-driven mechanism).

One model proposed for such associative operations in goal-directed mechanisms is this. After extensive experience, or training, one may acquire the tendency to pair a response with a certain outcome. When the value of such outcome is suddenly changed or degraded, the emotional response may still follow according to the old outcome under poor operating conditions, thus issuing a suboptimal or inappropriate behavior. The reason for this would be that extensive training, or experience, would make the associative link between a response and the old outcome stronger than any connection involving the new outcome. This makes the former more susceptible to be activated when operating conditions are poor, for instance, when subjects act under time pressure or when their attention is drawn away from what they are doing.

That would be a goal-directed explanation for action slips such as typing, out of custom, the wrong old password, when the action is done in a frenzy, or attention of the agent is distracted from the typing. Recent work has collected evidence for this sort of model (Buabang et al., 2023; Van Dessel et al., 2024). Hereafter, let me call such models “associative” goal-directed mechanisms, for short. In these experiments, the outcomes of certain responses were changed (or, to be more precise, their value was reversed) after extensive or mild training. After subjects showed they had assimilated these changes, their performance was tested under time pressure. Subjects were also asked and tested about the outcomes of their responses. It was found, consistently with this associative goal-directed model, that errors in performance were more abundant among subjects who underwent extensive training with the old outcomes and that errors about the outcomes were again more abundant among subjects with an extensive training.

So, we can see how this goal-directed model can account for behavior which appears rigid and insensitive to changes in the outcomes of possible responses. This is so, I think we can presume, because on this model, albeit being a goal-directed mechanism, the operation crucially involves an associative element. What is not clear, however, is whether such a model can account for cases like phobias or mundane emotional recalcitrance. On the face of it, one crucial element for this model is missing in these cases, as the operating conditions are not in general poor. The phobic subject has plenty of time to consider their confronting a spider and we can bet that all of their attention is devoted to this event. And the same goes for the accomplished musician suffering from stage fright. Yet, that operating conditions are poor is a crucial factor in the goal-directed explanation of action slips and the evidence adduced for it, since mistakes are measured for subjects who show they know about the new outcomes and tests are made under time pressure. One may presume that if they were allowed to respond without time limitation, most mistakes would be avoided. It is only when conditions are poor, so the model goes, that the stronger association with old outcomes wins the competition for action delivery.¹⁰

¹⁰ In fact, the results of the experiments in Van Dessel et al. (2024) seem to support this presumption. In these experiments, the subjects' responses were given along a time interval spanning between 400 and 1200 ms. It was found that incorrect responses were more frequent when they lay at the beginning of this interval than at the end.

It is true that in the psychological literature, stimulus-driven mechanisms are invoked to explain suboptimal behavior when operating conditions are poor, as the subjects would be supposed to rely on crude associations between stimulus and responses instead of computing outcome values and expectancies and act accordingly. By devising “associative” goal-directed mechanisms and giving evidence for them, Moors and her colleagues have convincingly shown that suboptimal behavior when operating conditions are poor can also be shaped by a goal-directed mechanism. Yet, this by itself does not afford us with a goal-directed explanation of irrational behavior occurring under ample, or normal, operating conditions, as seems to be the case in phobias or mundane recalcitrant emotions.

Here, one would say that by appealing to a stimulus-driven mechanism one could offer the following explanation. No matter what the subject knows about the real value of the outcomes of their response, since this response is the result of a direct association between it and a stimulus situation, without the activation of any outcome representation, the response occurs and defies the subject best efforts to suppress it (Adams & Dickinson, 1981).

The friend of the goal-directed theory of emotion would need to argue that such associative goal-directed mechanisms may be responsible for an action even in cases where subjects know about the (new) value of the relevant outcomes and operating conditions are normal. They must argue that, for some reason, the association with old outcomes is too strong and wins the competition.

Of course, one cannot say, on mere reflection, whether they are right or stimulus-driven mechanisms are required. This is an empirical matter that can only be settled by gathering evidence through experimentation. But the important point that we must drive home is that some forms of irrational emotional behavior, such as phobias and most notably the phenomenon of emotional recalcitrance, require the postulation of a duality of emotional mechanisms. Whether this requires stimulus-driven and goal-directed mechanisms or it rather requires goal-directed mechanisms involving two different sorts of operations—associative versus non-associative—is, as said, an empirical issue that remains to be settled. But that some sort of duality in the mechanisms responsible for emotional responses is required, that seems secure.

4 Conclusions

I have been arguing that one crucial tenet of the goal-directed theory, namely, claim (D-M), later reformulated as claim (G-D-C), should be seriously considered. I have advanced some considerations which make it attractive to think of the emotional system as a decision-making system. Yet, I have also expressed some doubts about the goal-directed theory. So, what can we make of all this discussion?

First, I have argued that, though the idea that emotions involve decision-making processes is suggestive and plausible enough, it seems to face a problem with positive episodes which do not involve an action selection phase but such that they do involve bodily changes.

Second, I have argued there are also some problematic aspects regarding the valence of some emotional episodes. First, cases of extreme positive emotions, like

euphoria cases, actually would involve, according to the theory, episodes generating negative valence. Second, cases of extreme negative emotions, like rage when the subject envisages an optimal way to deal with their frustration, do not involve a balanced or nuanced negative valence, as the theory would seem to recommend, but rather an extreme negative one. It would then seem that the theory needs to develop and adjust its account of valence to effectively deal with these problems.

Finally, I have tried to argue that in order to account for the irrationality of some emotions, at least from the first-person perspective, a duality of mechanisms, or in the way in which emotional mechanisms operate, is required. At the very least, the goal-directed theory should incorporate, on my view, a mechanism for action which is insensitive to outcome devaluation, even in cases of normal operating conditions, as allegedly stimulus-driven mechanisms are thought to be.

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