

Lecture 6: Emotion: psychological background

1. A basic – one might say founding – discovery that characterized the emergence of the ‘new behavioral neuroscience’ in the late 1980s was the finding, usually attributed to psychologists Antonio Damasio and Joseph LeDoux, that routine cognitive judgments are seriously impaired in people who have suffered damage to brain areas associated with emotional processing. This has been widely taken as undermining the traditional philosophical and popular idea that cognition and emotion are essentially opposed styles of thought and evaluation. It also makes it implausible to think that people either do or can make economic decisions by simulating an emotionally unengaged form of rationality. To the extent that we think it worthwhile to study the neural correlates and basis of economic choices, then, we are bound to find ourselves observing processes that implicate emotions.
2. But what *is* an emotion in the first place? Both popular and philosophical traditions tend to identify, or at least very strongly associate, emotions with *feelings*. These may be thought of as the subjective experience of urges to *approach* some stimuli in ways that enhance positive arousal, and to *recoil* from other stimuli in ways that precipitate relief. Feelings are of course the standard evidence people cite in reporting their emotions. However, *identifying* emotions with feelings amounts to denying the possibility of subconscious emotions – that is, emotions of which their bearers are unaware. There is massive evidence that people respond to stimuli in ways associated with standard emotions without being aware of doing so, and while indeed denying that they

are or were emotionally aroused. For example, people presented with obviously harmless pictures of snakes will often report no subjective fear or other negative feeling, but then exhibit significantly more symptoms of nervousness (e.g., sweating, restlessness, maintenance of bodily distance from neutral stimuli) than control subjects in conditions following the presentation of the pictures. There is repeated experimental evidence of this kind for each of the major 'universal emotions' (which we will identify in a moment).

3. There are also physiological effects, including skin conductance responses and involuntary movements of facial muscles, that are reliable predictors of people's emotional responses under subsequent manipulations, but of which they report being unaware prior to the manipulations.

4. The psychologist Paul Ekman, following an earlier hypothesis of Darwin's, accumulated evidence which he interpreted as showing that there are six basic emotions that have standard facial and postural expression recognized by people from all human cultures (including very young children). The expressions in question are labeled (in English) happiness, sadness, fear, anger, distrust, and surprise. Here are examples of each. Can you tell which is which?



5. For these facial expressions of basic emotions, there has been substantial research aimed at establishing the neural basis of both recognition and muscular responses that trigger them. However, the attempt to determine how much of this is culturally learned, and how much reflects innate distinctions, is highly inconclusive. The attempt to find six *autonomic neural programs* that produce the six patterns has so far failed.
6. What about states popularly thought of as 'emotions' that are more like standing dispositions to react to recurrent instances

of a particular person or situation in a specific person's life, as opposed to standard responses to generic stimuli (like disgust at the smell of feces)? For example, are guilt (over a specific episode) or love (of a specific person) emotions in the same sense as Ekman's basic six?

7. What about complex emotions, such as 'resentment of another's underserved social status'? These clearly implicate sophisticated cognitive judgments. So are these emotions or expressions of preference? As Phelps says, emotions, conceived of as motivations to seek or respond aversively to states of affairs, are difficult to conceptually distinguish from preferences.
8. Remember that economists have traditionally thought of preferences as exogenous likes and dislikes (and, therefore as the arationally derived *basis* for choice). If we *don't* identify emotions with subjective feelings, the distinction between standing dispositions to particular emotional reactions, on the one hand, and preferences, on the other hand, threatens to collapse.
9. We might respond by distinguishing between preferences a person would rationally affirm – e.g., 'I would prefer (and pay costs) not to be around a live snake' – from preferences they express in subconscious behavior – e.g., 'I don't like to see pictures of snakes' – but would *not* rationally affirm (or choose to pay costs to avoid). Consider in this respect the various 'emotional' responses reviewed by Zweig that interfere with investors' efforts to maximize their returns. Zweig clearly assumes that people would not rationally affirm these responses, since he thinks that by pointing them out to his readers he supplies motivation to the readers to try to suppress them.

10. We can distinguish between emotional reactions to specific stimuli and *moods*. An elated or bummed-out mood might be triggered by no specific stimuli (at least, that anyone can identify), but then color the valence the person associates with *all* stimuli for the duration of the mood in question. To the extent that moods cause one and the same type of situation to be considered desirable one day and aversive the next, influence of moods on economic choice seems directly incompatible with the economist's idea of valuation as based on the standing utility or disutility of a state of affairs.
11. Moods can readily be induced by drugs, which reveals their neural basis. This also applies to standing dispositions to make specific emotional judgments. For example, the hormone oxytocin, which mediates bonding between mates and between mothers and offspring in mammals, can be administered artificially and cause people to report warm feelings about circumstances and people they previously felt neutral about or disliked.
12. We thus seem to be at something of an impasse. Insofar as emotions, conceptualized as standing dispositions to like or dislike, to approach or recoil, are *standing judgments* (accompanied by feelings), the economist can regard them as *indicators* of preferences or as *causes* of preferences. Insofar as emotions are *transient*, but influence choice, the economist might be led by their significance to regard preferences as *state-dependent*. For example: 'Agent *i*, when in a good mood, prefers comedies to tragedies, and when in a bad mood prefers tragedies to comedies.' Next week, we'll review research involving emotions by economists and neuroeconomists with a view to evaluating how much difference these alternatives make to evaluation of empirical results.