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## PLEASURE

Pleasure and displeasure comprise a bipolar dimension that is the most important ingredient of core affect. As such, pleasure and displeasure provide texture to conscious experiences and form the foundation of emotions and moods. Furthermore, pleasure and displeasure have long been considered by many philosophers and psychologists as powerful motives. Pleasure is of particular interest to exercise psychologists because, unlike many other health behaviors, exercise can induce substantial changes along the pleasure–displeasure dimension, and these may, in turn, influence subsequent exercise behavior.

### Pleasure–Displeasure as the Core Affective Dimension

In 1896, Wilhelm Wundt wrote that, among the “manifold of feelings,” one can distinguish certain “chief affective dimensions,” the first of which consists of “pleasurable and unpleasurable feelings.” In the 1950s, Charles Osgood found that the first dimension to emerge from factor analyses of semantic differential items comprised such adjective pairs as pleasant–unpleasant, good–bad, and positive–negative. This factor explained well over half of the accounted variance. Subsequent analyses of affective adjectives, facial expressions, and emotional ratings of environments have confirmed that the first dimension, accounting for the majority of the variance, refers to pleasure–displeasure.

An interesting question is whether one can feel both pleasure and displeasure at the same time. For example, some runners say that running “hurts so good.” While empirical analyses consistently show

that pleasure and displeasure are polar opposites (i.e., reciprocally related) and cannot co-occur at the exact same time, cognitive appraisals may be independent. Thus, someone can feel “pleased” about the fact that exercise induced a 10-pound weight loss and “displeased” that exercise takes so much time. In these cases, the “pleasure” and “displeasure” reflect conflicting cognitive appraisals. Likewise, a runner may experience “hurt” (a direct, unpleasant sensation from the body) while running but also feel “good” when appraising running as the means to enhanced fitness and better running performance.

### Adaptational Properties

In the early 1900s, Herbert Spencer proposed that pleasure and displeasure represent evolutionary adaptations. Their functions make sense when considered within the context of what John Bowlby later called the “environment of evolutionary adaptedness,” the environment that shaped hominid evolution. From this perspective, pleasure and displeasure spread through the population because they conferred a crucial adaptational advantage. Pleasure signifies usefulness and provides an inducement to approach stimuli that promote Darwinian fitness (i.e., survival and reproduction). Displeasure signifies danger and acts as a deterrent.

These ideas also apply to exercise-induced changes in pleasure and displeasure. Exercise can be “useful” in a Darwinian sense, since it provided the only means of subsistence for hunters and gatherers and it can maintain health and vitality. Therefore, it would make adaptational sense to link exercise to pleasure as a means of facilitating this useful activity. On the other hand, exercise can also increase the risk of injury (e.g., skeletal, muscular, cardiovascular) and death (e.g., from heat exhaustion or cardiac arrest). So it would also make adaptational sense to link exercise to displeasure as a means of maintaining exertion within safe parameters.

### Alliesthesia

Physiologist Michel Cabanac coined the term *alliesthesia* to describe a phenomenon whereby the same stimulus may induce pleasure or displeasure, depending on the condition of the organism. For example, a certain room temperature may feel comfortable in the summer but cold in the winter. Similarly, a level of exercise intensity may be pleasant under normal circumstances but aversive

or intolerable under conditions of homeostatic perturbation (e.g., sleep deprivation, fever, dehydration, hypoglycemia, high ambient temperature and humidity).

### Pleasure as “Common Currency”

Ethologists have long grappled with the problem of the forces that determine the behavior of an animal. Animals are subjected to numerous internal and external factors that can influence their behavior. Some of these may be in conflict (e.g., “go” and “stop” or “approach” and “avoid” signals). However, since an animal can only do one thing at a time (move in one direction), there must be a “behavioral final common path,” a mechanism that coverts these factors to a common scale (a “common currency”) so that they can be compared.

Michel Cabanac proposed that pleasure is this common currency. Pleasure is an integral component of all experiences. Furthermore, evidence indicates that events register in memory not solely as factual information (i.e., what, where, when) but also in terms of the pleasure or displeasure that accompanies them. Pleasure is, therefore, ideally positioned for this role.

Cabanac offered evidence for his hypothesis by investigating behavior under conditions of conflict. In one study involving use of a treadmill, he kept the speed of the treadmill fixed and allowed the participants to choose the slope or kept the slope fixed and allowed the participants to choose the speed. He hypothesized that the choices the participants would make would be intended to maximize pleasure and/or minimize displeasure. Indeed, the choices the participants made were reciprocal, resulting in approximately constant power and constant ratings of pleasure. Moreover, their choices could be predicted from ratings of pleasure–displeasure.

### Varieties of Pleasure and Their Implications

Research by Daniel Kahneman has shown that the pleasure–displeasure experienced at different phases of an episode (e.g., a medical procedure) have different implications for subsequent behavioral decisions. Specifically, the peak pleasure or displeasure (called the “peak rule”) and the pleasure or displeasure at the end of the episode (called the “end rule”) are weighed more heavily. On the other hand, how long the episode lasts and, therefore, the total amount of pleasure or

displeasure experienced appears inconsequential (called “duration neglect”).

These principles have interesting implications for exercise. For example, an implication would be that, as long as exercise practitioners ensure that (a) pleasure is not reduced during exercise, so as to induce a negative “peak” and (b) a cooldown is provided, to create a pleasant “end,” the duration of the activity can be extended without adverse consequences for motivation. A study by Britton Brewer and collaborators showed that, in fact, participants prefer a longer and more energetically costly bout as long as intensity is reduced at the end to increase pleasure.

*Panteleimon Ekkekakis*

*See also* Addiction, Effects of Exercise on; Affect; Affective Responses to Exercise; Emotional Responses; Hedonic Theory

### Further Readings

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## POSITIVE THINKING

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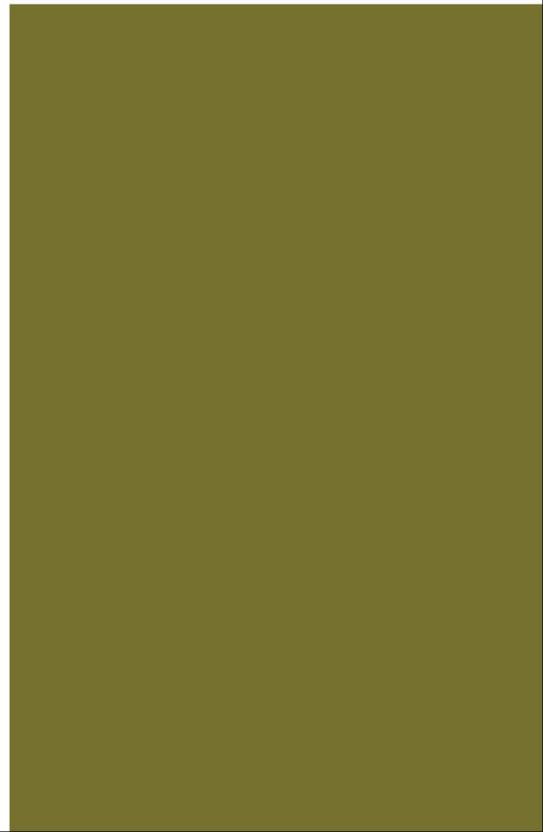
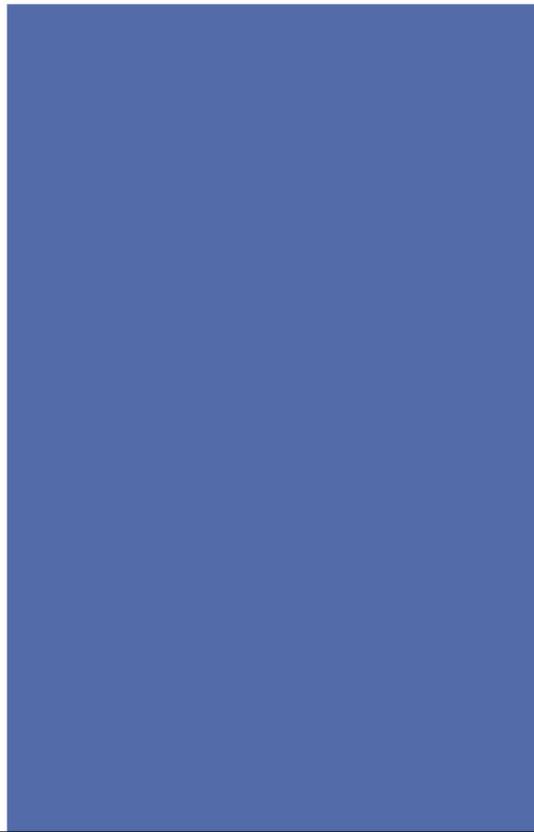
Traditionally, sport psychologists have placed great value on athletes thinking positively about upcoming and imminent performances. Compared with practicing sport psychologists who have demonstrated a keen interest in positive thinking, theorists and researchers have not. As a result, a systematic and thorough knowledge base regarding what positive thinking is and why it is so sought does not currently exist. However, it would be reasonable to state that positive thinking is a broad term

**Robert C. Eklund | Gershon Tenenbaum**

Editors

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