

H

happiness The emotion of happiness is a subjective, valenced reaction to a positive experience or event (Ortony *et al.* 1988). Happiness can be conceptualized as an umbrella term that encompasses a variety of positive feelings, ranging from the low-intensity states of *contentment, *enjoyment, serenity, and *amusement to the high-intensity states of elation, *joy, and euphoria. These positive states are typically experienced when a person is making progress towards the realization of *goals (Carver and Scheier 1998), and, notably, signal that the environment is benign and safe for both relaxation and exploration (Schwarz and Clore 1983). As such, researchers had originally conceptualized a happy emotion as producing a form of 'free activation' that is conducive to creativity and divergent thought (Frijda 1986, Isen *et al.* 1992). Extending this idea, Fredrickson's (2001) broaden-and-build model argued that feelings of happiness are functional, such that they open people up to creative endeavours and novel approaches to problem-solving, as well as building social, physical, and intellectual resources that prepare them for future challenges (see POSITIVE EMOTIONS). Consistent with this reasoning, the frequency of happy emotions has been found to be positively related to approach-related motivation, effective coping, physical health and longevity, strong social support, satisfaction with social relationships, pro-social behaviour, productivity in the workplace, and other markers of success (Lyubomirsky *et al.* 2005a). In short, happiness is more than a hedonically pleasant state. It is the means to a variety of positive ends that have value for both the individual and the society at large.

In the light of these benefits, it is natural to wonder whether the frequency with which people experience happy emotions can be increased and maintained. Some cite evidence suggesting that people have a genetically determined set point for experiences of happiness—namely, a baseline to which they gravitate following triumphs or setbacks (Lykken and Tellegen 1996). In addition, temporally stable and cross-situationally consistent personality traits such as *extraversion and *neuroticism are highly predictive of a person's reports of happiness (Costa and McCrae 1980). Although these observations highlight the futility of pursuing lasting improvements in the frequency of happy emotions, there are also reasons

for optimism. Recent research has found that an individual's experiences of happiness can be significantly bolstered by the regular, committed practice of activities such as counting blessings, expressing optimism, and performing acts of kindness (Lyubomirsky *et al.* 2005b). In sum, frequent happiness is a highly valued goal that is partially a function of *temperament, but can also be attained through effortful intentional activity.

SONJA LYUBOMIRSKY AND JAIME L. KURTZ

hatred Hatred, the noun, and to hate, the verb, do not completely coincide in their semantic ranges. Hatred carries with it more intensity and greater seriousness than many of our most common uses of the verb. Hatred is unlikely to apply aptly to one's feelings about broccoli, though it would be perfectly normal to register one's aversion to it by saying 'I hate broccoli'. In daily speech, hate can be used to indicate a fairly strong but not very serious aversion to a film, novel, or food, all the way to desiring, with varying seriousness, the extermination of an entire people. The word hate can thus mark a powerful moral/immoral *sentiment, or merely register a negative *preference. In this it tracks Latin usage, where the verb, *odi*, and the noun *odium*, can be used to register both simple aversion and also an intense passion of all-consuming detestation.

Attempts to get at the substance of hatred in the philosophical tradition focus mostly on how to distinguish it from *anger. Both anger and hatred accompany and inform relations of hostility, but not in quite the same way. Following Aristotle, the usual view is that anger is tied up with claims for redress against a particular person for particular wrongs, whereas hatred need no personal involvement; we can hate a person for what or who he or she is even without knowing them. Thus whole groups can be hated. Aristotle (384–322 BC) gives thieves and informers as examples. The grim history of the 20th century would add whole peoples based on religion, ethnicity, or race. Anger, Aristotle says, is curable and can be repaired via compensation, revenge, or apology. Unlike anger, which can exhaust itself within moments, hatred decays slowly if at all; it endures. The angry man might feel pity, says Aristotle, but not the hater; for the angry man wants the person he is angry at to suffer, while the hater wants

health/clinical aspects (of affect)

him not to exist. Roughly then, anger is about acts, hatred about the mere existence of the hated.

Folk wisdom, not incorrectly, sees a link between *love and hate, each tied up with the other, not just as opposites but also as marking the roil and turmoil of close relations. It is disputed whether both can be co-experienced, though a good portion of the world's best known literature and not a little of our own experience would be incomprehensible if they could not be. Their relation is not symmetrical: hatred does not bring about the conditions for love, though love (spurned, betrayed) can readily supply the conditions for hatred. Both hatred and love share a focused intensity; both, strangely, involve caring. Both love and hatred are held to be character defining for those who feel them, with hatred maybe beating out love in this regard, for it seems we derive as much (or more) of our sense of who we are from our hatreds as from our loves. Thus it may be that though haters want their objects dead, they may find they need to resurrect them or reinvent them in order to maintain their own sense of self: to wish, in Othello's idiom, the hated one a thousand lives so he can keep on killing him.

Many of the distinctions between anger and hatred break down on closer inspection. We can hate individuals no less than groups. Consistently being angered by someone can lead to hate, and hate can easily trigger anger.

Darwin (1809–82), with his usual perspicuity, recognized that hatred mixes and mingles with other closely related sentiments depending on the relative status of the parties. Hatred for the lowly is not just tied up with disgust and contempt but disgust and contempt may in fact be the form hatred of the low takes. Hatred of the high by the low, he says, is closely annexed to fear, if not also a form of it. Nietzsche's (1844–1900) well-known account is that morality itself owes its very being to a particular form of hatred the weak have for the strong: *ressentiment*. But the genocides of the 20th century have shown that hatred has an even more remarkable transformative power: it allows the strong to invest the weak with magical and phantasmal powers of control, insinuation, infection, and pollution. A true history of hatred would have to come to terms with anti-Semitism.

Much routine hatred is experienced less as an emotion than as a quasiformal attitude of opposition, of obligatory enmity. And, when experienced as an emotion, hatred may never exist uncoloured variously by anger, disgust, contempt, fear, envy, competitiveness, and all-consuming love. For this reason too it has not been studied systematically in the scientific way anger has; it encompasses too many disparate inner states and outer settings for traditional psychological experimentation to get at. Even the most brilliant of philosophers despair. Thus David Hume's (1711–76) observation: "Tis

altogether impossible to give any definition of the passions of love and hatred'.

W. I. MILLER

health/clinical aspects (of affect) *see* addiction; alexithymia; anhedonia; antisocial behaviour; anxiety; apathy; autism; bipolar disorder; cognitive behaviour therapy; cognitive bias; denial; depression; disinhibition; disorder (affective, emotional); dysphoria; eustress; health and emotion; hypomania; illness cognitions and emotion; impulsivity; inflammation (and mood); mania; mood disorders; narcissism; obsessive-compulsive disorder; pain (biological perspectives); pain (philosophical perspectives); panic disorder; paranoia; phobias; post-traumatic stress disorder; psychopathy; psychoneuroendocrinology; psychoneuroimmunology; psychosomatic disorders; repression; resilience; risk factors for emotional disorders; risk-taking; rumination; separation anxiety; stress; unipolar disorder; violence; vulnerability; well-being.

health and emotion According to the World Health Organization health is defined as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. While the regulation or dysregulation of emotion has clearly been identified as a key factor in mental health (see DISORDER 'AFFECTIVE, EMOTIONAL'), whether or not emotion plays a role in determining physical health outcomes is more controversial. References to the idea that emotions influence physical health can be found in the Bible and repeatedly throughout history. While many aspects of early ideas about *how* emotion influences physical health have been refuted, there is sufficient evidence of linkage that the relationship continues to be actively investigated (Kubzansky 2005). As research methods and technologies have improved, investigators have been able to explore the question with more compelling and methodologically rigorous studies than was previously possible.

Emotion might be related to physical health in a variety of ways. Emotions might influence the development of disease. Alternatively, emotions may exacerbate symptomatology or trigger acute disease-related events. Additionally, emotion may affect the progression of disease. Emotions may also affect compliance with medical regimen and disease management. Disease may also influence emotion states, since being ill is distressing.

To understand how or why emotions influence health, it is important to know how the term 'emotion' is conceptualized. Specific emotions are considered to be biologically based, and mediate between continually changing situations and the individual's behaviour (Frijda 1986). A major task of early childhood is developing the ability to regulate emotions (see CHILDHOOD

EMOTIONAL DEVELOPMENT), and both the social environment and *personality play an important role in shaping regulatory capacity and the resulting emotional experiences. Positive and negative feeling states represent distinct emotional forces, and effective emotion regulation (see REGULATION OF EMOTION) is probably related to the achievement of some form of balance between positive and negative emotion (Rozanski *et al.* 2005). Thus, emotions may be considered to be adaptive and functionally appropriate processes which have dysfunctional consequences when the frequency, strength, or duration with which they occur is excessive (see FUNCTIONALIST THEORIES OF EMOTION). Failure to learn appropriate strategies for emotion regulation in childhood may set up a chain of risk, whereas effective regulation may lead to accruing resilience in relation to physical health.

Emotions have identifiable cognitive, neurobiological, and behavioural components. The experience of most emotions occurs along a continuum ranging from normal to pathological, and the components of emotion are essentially similar regardless of where on the continuum an emotion reaction lies (Clark and Watson 1994). As a result, effects of emotion on physical health may occur across the emotion continuum. Interestingly, studies using symptom measures of negative emotion have not suggested a threshold at which damaging effects are more likely to occur; rather risk appears to increase with each additional symptom (Kubzansky and Kawachi 2000).

Most emotions may be seen either as transitory *states* brought on by specific situations, or as *traits*, i.e. stable and general dispositions to experience particular emotions (Frijda 1994). Thus, emotions may directly affect the development of disease via biological alterations that occur as a result of either cumulative effects of repeated emotion experiences or an acute emotion episode. For example, negative emotions activate a 'stress response'. This involves a cascade of hormonal and neural activity whereby stored energy is converted to a usable resource, and growth and repair functions are inhibited (see STRESS). Emotions may also indirectly influence the development of disease via behavioural, cognitive, and social processes. For example, emotions motivate health-related behaviours and influence the availability of coping resources. Negative emotions have been linked to smoking, excessive alcohol consumption (see ADDICTION), and lower physical activity, and in turn these processes are risk factors for an array of diseases. Emotions influence cognitive and decision-making processes like symptom perception and health-care use, and may also disrupt or promote social relationships, which are themselves associated with health outcomes.

Findings from experimental, prospective observational, and animal studies have converged to suggest that emotions significantly influence physical health outcomes (Everson-Rose and Lewis 2005, Kiecolt-Glaser *et al.* 2002). The best evidence has been provided in relation to cardiovascular diseases. However, evidence has also been presented in relation to numerous other outcomes including diabetes, cancer, infectious diseases, lung function, disability, and mortality. While most studies have focused on the harmful effects of negative emotions, limited work has also found positive emotions to have a protective effect.

Although evidence increasingly supports the role of emotion in determining health outcomes, we have not yet reached a detailed understanding of this relationship. For example, we have not established the duration or intensity of emotion experience that is needed to influence health, nor determined whether such effects are reversible. The importance of the social environment in shaping and modifying emotional processes and their subsequent health effects needs to be considered, with attention given to how these experiences unfold and accumulate across the life course. Additional understanding may be used to develop strategies for preventing disease and promoting health.

LAURA D. KUBZANSKY

Everson-Rose, S.A. and Lewis, T.T. (2005). Psychosocial factors and cardiovascular diseases. *Annual Review of Public Health*, 26, 469–500.

Rozanski, A., Blumenthal, J.A., Davidson, K.W., Saab, P., and Kubzansky, L.D. (2005). The epidemiology, pathophysiology, and management of psychosocial risk factors in cardiac practice: the emerging field of behavioral cardiology. *Journal of the American College of Cardiology*, 45, 637–51.

heuristics A heuristic is any procedure which simplifies a calculation, choice, or judgement, either by restricting the amount of information that is considered or the complexity of ways in which it is combined (see BOUNDED RATIONALITY). For example, the rule of thumb for converting degrees Celsius to degrees Fahrenheit ('double and add 30') is a heuristic; it replaces a more difficult operation (multiplying by 1.8 and adding 32) with something simpler. Like many other heuristics, this causes predictable errors (overestimating temperature when it is cool and underestimating temperature when it is hot), but it approximates the correct calculation and is often close enough (Simon 1978).

Many heuristics are designed to simplify choices among multidimensional alternatives (for reviews see Payne *et al.*, 1993, and Gigerenzer *et al.*, 1999). For example, a lexicographical (or 'take the best') heuristic selects the alternative that is superior on the most important attribute, neglecting all other information.

history of emotion

Such choice heuristics are degraded versions of optimal procedures which have, by necessity and design, been stripped down to accommodate cognitive limitations in short-term memory and computational capacity. These heuristics are viewed as heuristics by the people who use them, who will readily describe what they are doing as a simplifying strategy.

Not all heuristics, however, are best conceived as *deliberate* simplifying strategies. Some reflect differences in the fluency of mental operations required to process the different types of information relevant to the requested judgement (Kahneman *et al.* 1982). For example, when asked to predict the future outcome of a woman with a history of political activism, people generally considered it more likely that she turned out to be both a bank teller *and* an active feminist than that she became 'just' a bank teller (Tversky and Kahneman 1983). This reflects the fact that one piece of information relevant to such predictions (the similarity between her history and her life's outcome) is 'computed' much more readily than the other key piece—the statistical incidence of feminists, bank tellers, and feminist bank tellers. Although basing probability judgements on a computation of similarity has the effect of conserving effort (because the presence of a plausible answer terminates the judgmental process), people do not generally regard their judgement as resulting from a simpler version of another procedure they might instead perform.

Kahneman and Frederick (2002, 2005) proposed a general model of heuristic judgement called *attribute substitution*. They argued that people frequently answer a slightly different question from the one they were asked without being aware of the substitution. This can occur whenever the attribute being judged (e.g. probability) is less readily accessible than some conceptually related attribute (e.g. similarity). These intuitive judgements can be overridden when people are cued to consider other inputs or search for logical flaws, but often are not. Moreover, the power of intuitions remains and continues to compete with more careful and deliberate analyses, and even a thorough understanding of the logic does not always dislodge a contrasting intuitive impression. When reflecting on the bank teller problem, Stephen Jay Gould (1991) remarked: 'I know [the right answer], yet a little homunculus in my head continues to jump up and down, shouting at me – "But she can't just be a bank teller; read the description".'

SHANE FREDERICK

history of emotion The history of emotion refers here not to the emergence of emotion in the course of human evolution (see *EVOLUTION OF EMOTION*) but to how emo-

tions and the concept of emotion may have changed over historical time. The topic borders on the cross-cultural variation of emotion (see *CULTURAL SPECIFICITY*), from which it differs in that history involves a certain chronological continuity; but a single society at diverse stages may well exhibit greater disparities than contemporary but apparently unrelated cultures. To the extent that emotions vary in response to new historical conditions, they will appear to be culturally constructed (see *CONSTRUCTIVISM*). But change presupposes a substrate that undergoes modification, which suggests that there are some transhistorical constants, although these may be at the level of emotional components rather than emotions themselves (see *COMPONENTIAL THEORIES*). The history of emotion is thus a site at which constructivist and universalist (see *UNIVERSALITY OF EMOTION*) theories of emotion may fruitfully intersect.

'Emotion' is a relatively recent term in English, having won out over *'passion', 'affection', and 'sentiment' only in the past 200 years. These words vary in meaning and in the range of responses they cover. Still greater discontinuities are to be expected over longer periods of time and across languages. The ancient Greek term *pathos* (plural *pathê*), which most closely corresponds to 'emotion', can refer to almost any experience, but even in the affective sphere it embraces, in one list, pleasure, pain, desire, and contempt and in another love, anger, drunkenness, and ambition (*Rhetoric to Alexander*). Aristotle (384–322 BC) in his *Rhetoric* analyses anger and the allaying of anger, love, hatred, fear, confidence, shame, gratitude, pity, indignation, envy, emulousness, and contempt, which are nearer to modern inventories; still, only two of these figure among Ekman's *basic emotions.

Individual emotions may also change over time. *Jealousy, for example, has evolved over the past two centuries in the United States in tandem with the conception of romantic love (Stearns 1989), and no term in classical Greek or Latin exactly corresponds to it (the Greek root *zêlos* means something like 'competitive zeal'; Konstan 2006). English *'envy' derives from Latin *invidia*, but in ancient Rome *invidia* signified not just malicious spite but also righteous indignation (Kaster 2005). The conception of pity has shifted over time from a positive emotion to a religious duty to a negative attitude bordering on contempt. Even so fundamental an emotion as *anger may vary. A modern dictionary defines anger as 'a strong feeling of displeasure and usually of antagonism' (Merriam-Webster, <http://www.merriam-webster.com/>), whereas Aristotle defines *orgê*—the closest analogue to anger—as 'a desire, accompanied by pain, for a perceived revenge on account of a perceived slight'. Aristotle's view that insult is the sole cause of anger corresponds to a society highly

hot cognition

conscious of status and honour; subsequent centuries witnessed a greater emphasis on anger control (Harris 2001). Attitudes toward expressions of grief and weeping (male and female) have also varied considerably; ancient Rome legislated the length of time allowed for mourning—less for newborn than for older children. But change does not necessarily imply progress or a ‘civilizing process’, in Norbert Elias’ phrase, according to which ostensibly primitive emotions are refined over time (cf. Harris 2001, Rosenwein 2006). Recent research, for example, has emphasized the intensity of familial affection in the early modern period despite high infant mortality rates.

A historical perspective on emotion can help attune investigators to the provisional or transient nature of modern categories. It may also enrich modern theoretical approaches (see EMOTION THEORIES AND CONCEPTS (PHILOSOPHICAL PERSPECTIVES)). Aristotle’s treatment of emotions depends crucially on appraisal (for example, an insult that arouses anger must be intentional), and his definition of *pathê* as ‘those things on account of which people change and differ in regard to their judgements, and upon which attend pain and pleasure’ is highly cognitive in character (see APPRAISAL THEORIES). In classical antiquity emotions were often assumed to be subject to persuasion and were discussed in treatises on rhetoric, like Aristotle’s, but it is only recently that experimental psychologists have begun to examine how emotions motivate beliefs. Emotions were often expressly related to status and relations of power—Romans denied that slaves experienced shame, and anger was a prerogative of royalty for some medieval writers; power, however, is often elided in modern analyses. Emotions were also conceived principally as reactions to the behaviour of morally responsible agents; but the central role of *agency is a relatively new theme in modern treatments of emotion.

Understanding how the emotions of past societies may have differed from ours and how they evolved requires the meticulous interpretation of sources, both scientific and literary, together with a thorough acquaintance with modern emotion research. The fruits are of more than antiquarian interest; but the work is still only beginning.

DAVID KONSTAN

Gross, D.M. (2006). *The secret history of emotion: from Aristotle’s Rhetoric to modern brain science*. Chicago: University of Chicago Press.

Reddy, W.M. (2001). *The navigation of feeling: a framework for the history of emotions*. Cambridge: Cambridge University Press.

hope Hope has figured in Western discourse at least since the myth of Pandora, and the reader may remem-

ber that hope was housed with other evils, implying that it could be as dangerous as greed or sorrow. However, hope also kept humanity from being filled with *despair, and so had considerable value. A later meaning of hope is found in Christian theology, which groups it with faith and charity as theological virtues and defines hope as the desire and search for a future good. With God’s help, even a difficult good could be attained. The current meaning of hope is similar but secular: a wish or *desire accompanied by some *expectation of its fulfilment.

Although a much more recent arrival on the lexical scene, *optimism* is a close cousin of hope, and research psychologists may use the terms interchangeably. If one is careful about meanings, though, hope is more emotional and carries connotations of perseverance, whereas optimism is more cognitive and purely expectational.

The best-known psychological work on hope was done by C. Rick Snyder, who created several versions of a Hope Scale, a brief, face-valid, self-report survey that measures two components of hope as he conceived it. The first component is *agency* (someone’s determination that goals can be achieved) and the second *pathways* (someone’s beliefs that successful plans can be generated to reach these goals). Studies show that hope thus measured has a variety of desirable correlates and consequences, including *well-being, *happiness, and general *life satisfaction.

CHRISTOPHER PETERSON

Peterson, C. (2000). The future of optimism. *American Psychologist*, 55, 44–55.

Snyder, C.R. (ed.) (2000). *Handbook of hope: theory, measures, and applications*. San Diego, CA: Academic Press.

hot cognition Hot cognition has been proposed as one of two central constructs for clarifying the interaction of emotion and cognition within the hot system/cool system framework (see COOL COGNITION). The hot system is the basis of emotionality—fears as well as passions. It is impulsive, rigid, simple, and fast. Initially responsive to innate releasing stimuli, with experience it becomes responsive to conditioned stimuli. It is fundamental for classical conditioning and is thought to centre on the *amygdala. Characterized by stereotypy and affective primacy, it is triggered selectively by fear-provoking and appetitive stimuli, generating feelings of *fear or of *desire, and impulsive urges. The hot system contributes the feeling components to the phenomenology. The contrasting cool system, which is emotionally neutral, flexible, strategic, and slow, constrains the hot system.

If unconstrained, the hot system can give rise to an inability to delay gratification, explosive temper, unbridled violence, and unchecked sexual impulses, with

hypomania

their obvious personal and social consequences. It may also produce unwanted emotional states including cravings and anxieties. The crucial balance between the hot and cool systems is determined by stress, developmental level, and the individual's self-regulatory dynamics, and may be influenced by disease, pharmaceutical interventions, priming, or learning. While the hot system, if poorly controlled, can produce negative emotional or social behaviours, this system is, nevertheless, necessary for appropriate motivations, contributes affective value to our mental life, and is at the heart of human vitality.

JANET METCALFE AND W. JAKE JACOBS

LeDoux, J.E. (2000). Emotion circuits in the brain. *Annual Review of Neuroscience*, **23**, 155–84.

Metcalfe, J. and Jacobs, W.J. (1998). Emotional memory: effects of stress on 'cool' and 'hot' memory systems. *Psychology of Learning and Motivation*, **38**, 187–221.

hypomania Hypomania is defined as a period of elevated or irritable *mood which lasts for at least 4 days and which represents a significant change from

the individual's typical mood state. The symptom criteria for hypomania (bipolar II) are identical to those for *mania (bipolar I) but the time criterion is shorter (4 days instead of a week). Additional differences are that hypomanic symptoms are associated with a clear change in functioning (as opposed to marked impairment in functioning or the need for hospitalization characteristic of mania) and that unlike some forms of mania there are no accompanying psychotic symptoms. Bipolar II disorder criteria are met when an individual has experienced one episode of hypomania and at least one episode of major depression (American Psychiatric Association 2000). Bipolar II disorder has a prevalence rate of around 3% in population studies. There is evidence that hypomania may be missed in routine clinical practice, with some researchers arguing that 40–50% of individuals diagnosed with unipolar depression have actually also experienced diagnosable hypomanic episodes (Hantouche *et al.* 1998, Ghaemi *et al.* 2000).

STEVEN JONES