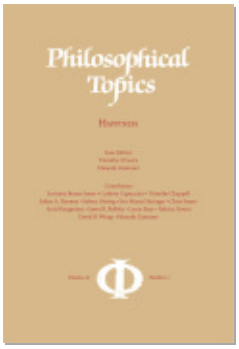
The Two Facets of Pleasure

Laura Sizer



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The Two Facets of Pleasure

Laura Sizer
Hampshire College

ABSTRACT. Several tensions run through philosophical debates on the nature of pleasure: is it a feeling or an attitude? Is it excited engagement during activities, or satisfaction and contentment at their completion? Pleasure also plays fundamental explanatory roles in psychology, neuroscience, and animal behavior. I draw on this work to argue that pleasure picks out two distinct, but interacting neurobiological systems with long evolutionary histories. Understanding pleasure as having these two facets gives us a better account of pleasure and explains the persistent tensions in the concept. This account of pleasure also sheds light on happiness and well-being.

I. INTRODUCTION

One cannot talk about happiness for long without running into the topic of pleasure. For hedonist conceptions of happiness, of course, pleasure is central. But even non-hedonists will agree that, whatever happiness is, it ought to be fairly pleasant at least much of the time. And yet the meaning and use of the term 'pleasure' is varied and unsettled. Philosophers disagree over whether it is a feeling, an attitude, or something else; whether it is the excitement that accompanies the pursuit of certain activities, or the contentment that marks the satisfaction (or cessation) of desires.

Outside of philosophy, in fields such as animal behavior, neuroscience, and psychology, pleasure is viewed as a basic affective or reward state that helps guide and shape cognition and behavior. The mechanisms that give rise to pleasure in human beings are thought to be the result of a long history of selection, and homologous with mechanisms in nonhuman animals. Philosophers too have pointed to the long and distinguished natural history of pleasure. As Bentham notes in the opening lines of his *The Principles of Morals & Legislation*, "Nature has placed mankind under the governance of two sovereign masters, *pain* and *pleasure*. It is for them alone to point out what we ought to do, as well as to determine what we shall do" (Bentham 1781/1988, 1). My project in this paper is to bring the natural history of pleasure to bear on some of the philosophical questions about pleasure. Thinking about pleasure as an evolved trait whose mechanisms we share with many other species gives rise to new perspectives and constraints on theories of pleasure. I will argue that it also forces us to reconsider whether 'pleasure' picks out a unitary phenomenon.

II. THE CHALLENGES OF DEFINING PLEASURE

The way we know pleasure best is through how it feels. Indeed it perhaps seems obvious that pleasure is *essentially* a feeling. Several philosophical accounts of pleasure hold that pleasure is essentially a feeling, and therefore what makes something a pleasure is how it feels. I shall refer to all such accounts of pleasure as "feeling views of pleasure," with the recognition that there is a variety of ways this gets cashed out. In this section I will contrast feeling views with attitudinal views, which identify pleasures through certain propositional attitudes such as desiring or wanting. Neither approach I will argue can be used to satisfactorily identify or define pleasure.

Feeling views are intuitively very compelling; what is pleasure if not a sensation or feeling? The claim that pleasure is essentially a feeling raises problems, however. On the one hand, if the claim is interpreted to mean that there is some feeling or sensation that all pleasures share (and, indeed, it is that feeling property that identifies it as a pleasure), then that seems to fly in the face of our experiences of many radically diverse and distinct types of pleasure. However, if one allows that pleasures can feel different from each other, that there is no shared qualitative property, then it is hard to say what it is that makes them all pleasures without appealing to some non-felt property.

A monistic feeling view of pleasure claims that there is some felt property that all pleasures share. Fred Feldman, in his critique of such a view, refers to this as the 'Distinctive Feeling View' or DFV (Feldman 1997). Bentham suggests such a view with his contention that all pleasures differ only with respect to quantity. G. E. Moore held another version of this view, where he describes pleasure as

marked and identified in terms of "a certain definite feeling called pleasure" which is "… the same in all the various degrees and in all the various kinds of it that there may be" (Moore 1965, 12).

This view of pleasure quickly runs into problems after even a cursory review of the wide variety of experiences we tend to call pleasurable. Smuts (2010) refers to this as the *heterogeneity problem*: "various forms of pleasure differ experientially to such an extent that one cannot find a common, distinctive feeling among them. The heterogeneity of pleasurable experience is thought to make it something of a mystery as to why we call these things by the same name" (Smuts 2010, 242).

Certainly it is difficult to identify a felt quality shared by the pleasures of eating a tasty meal, going for a walk on the beach at sunset, and reading an engrossing novel. But even if we restrict our examples to one sensory modality, say gustatory pleasures, similar problems of comparison arise. Does the pleasure I get from that first taste of ice cream on a hot day share some felt property with my pleasurable sip of a wonderful cabernet? What about an exhilarating and eye-watering bite of spicy chili? Even simple or 'lower' sensory pleasures are incredibly complex experiences, sensitive to all sorts of expectation, memory, and context effects (Rozin 1999).

Smuts argues for a different version of DFV, what he calls the 'Feels Good' theory, which is similar to C. D. Broad's 'hedonic tone' theory (1930). It does not require that all instances of pleasure share a distinctive and identifiable feeling. Instead the analysis, as I understand it, rests on the simple idea that all pleasurable experiences share the fact that they feel good, where feeling good does not imply a distinctive and isolatable sensation. As Smuts states, "'feeling good' is about as close to an experiential primitive as we get" (Smuts 2010, 254).

This suggestion is at once frustrating and intriguing. On the one hand, resting the identification of pleasure on such a vague experiential property as 'feels good' does not seem to add anything new and informative to the analysis. The very problem that we are trying to solve is that lots of different things feel good; indeed the same thing at different times might feel good and then not. The feels good theory seems to simply embrace this without adding much else to the analysis. However, perhaps Smuts is right that this is as far as an analysis of pleasure in terms of its experiential properties can go. Perhaps the *only* thing we can say about the feeling of pleasure is that some things sometimes feel good. Be that as it may, I am tempted to read the Feels Good analysis as deflating the possibility of identifying and defining pleasure in terms of its felt properties.

Other philosophers have agreed that a feelings-based account of pleasure is hopeless. Often citing the heterogeneity problem, they reject attempts to identify pleasure with feelings and have instead moved to define pleasure in terms of the propositional attitudes taken toward experiences or states of affairs. Sidgwick, for example, argued that for something to be pleasurable, it must "be apprehended as desirable" (Sidgwick 1874, 127); Heathwood, likewise, argued that pleasures are experiences that are 'intrinsically desired' (Heathwood 2006, 57); and Brandt

defined pleasures as experiences that "one wishes at the time to prolong for itself" (Brandt 1959, 307). With each of these 'attitudinal' approaches what is doing the work of identifying something as pleasurable is the propositional attitude.[1]

One of the most interesting recent versions of this approach is offered by Feldman (1997, 2002), who identifies pleasures with a propositional 'pro attitude'.

> Although I cannot define this attitude, I can say a few words about it. I think that when we take pleasure in a certain state of affairs, we "welcome" it in a certain way; we are "glad that it is happening"; we like it in a very familiar way. In typical cases, if we take pleasure in some state of affairs, we may want this to continue, although this is not universally true. I call this attitude "propositional pleasure" since it is a propositional attitude. (Feldman 1997, 142)

Elsewhere he describes his attitudinal pleasure as "a mode of consciousness. It is a way of being aware of a state of affairs" (Feldman 2002, 607). Feldman's attitudinal pleasure avoids the heterogeneity problem by letting the pro attitude do the work of identifying pleasure instead of a particular sort of feeling. Feldman also allows that it works well for a wide variety of pleasures. One can take a pro attitude toward reading *Jane Eyre* just as readily as toward eating chocolate cake or getting a backrub.

All these versions of the attitudinal approach nonetheless encounter some significant problems. One serious charge is that they seem to get the analysis backward. As Smuts (2010) puts it, focusing on Feldman's 'pro-attitude' approach, the analysis suffers from a "Euthyphro problem": it claims that something is pleasurable *because* we take a pro attitude toward it, when it seems more sensible to say that we take a pro attitude toward it because it is pleasurable. The pleasure explains the attitude, not the other way around (Smuts 2010, 249).[2]

Another set of concerns has to do with the requirement that for something to be pleasurable, it must be represented by an appropriate propositional attitude. That is, for an activity or state of affairs x to be pleasurable, the subject must have a propositional attitude state with content, roughly, of "I am glad that x" or "I welcome x." This gives rise to two sorts of problems. One is that the analysis seems to introduce an extra requirement for pleasure that, if realized, may actually interfere with the pleasure. This is particularly the case for certain mastery or aesthetic pleasures where one is entirely focused on and consumed by the painting or the music or the intricate logic puzzle. It seems unlikely that, in that moment, one also forms the propositional attitude: "I am glad that I am looking at this painting/listening to this piece of music/solving this puzzle." Indeed, these experiences are often characterized by the subject's being totally immersed in the activity and finding enjoyment in that immersion. The attitudinal approach to pleasure seems to introduce an additional requirement that, in some cases, if met, might actually interfere with the pleasure.[3]

Another problem is that such a requirement seems to put pleasure out of reach for nonhuman animals, human infants, or anything that lacks the cognitive/

conceptual resources to form propositional attitudes.[4] Feldman responds to this criticism, arguing that,

> In order to take up any of these attitudes toward some state of affairs, one must be able to conceive that state of affairs. This is not to suggest that one must be able to express the state in words—even an inarticulate person can hope for a drink of water, or fear that there might be something under the bed. As I see it, it does not take tremendous intellectual sophistication to have such attitudes. By the wagging of her little tail, my dog Pippin indicates that she takes pleasure in the fact that we are about to take a ride in the truck. (Feldman 2002, 607)

This suggests that the sort of attitude that Feldman has in mind is cognitively quite elemental, and probably does not involve propositions of the traditional sort (that is, sentence-like representations of states of affairs). If nonhuman animals such as dogs and primates are capable of pleasure in Feldman's sense—that is, capable of taking a pro attitude toward some state of affairs, then the cognitive/representational requirements for such an attitude must be something of which such animals are capable. There is a great deal of debate over whether nonhuman animals such as apes and baboons are capable of propositional thought, or whether their thought is less structured and more imagistic.[5] However, the case for *propositional* thought becomes increasingly difficult to maintain as one moves on to consider other nonhuman animals such as rodents, and describing such thought as propositional starts to erode any useful meaning or distinction by the term. Surely mice can lay as much claim to pleasure as Feldman's dog, Pippin, even if their thoughts are not propositional. The behavioral and neurobiological evidence does not give us any reason to draw a line between mice and dogs or humans and apes with respect to their capacities for pleasure, so our definitions of pleasure should not put it out of their reach.

Perhaps, then, Feldman should weaken the claim that it is a *propositional* attitude that is involved. Perhaps the most plausible analysis of it is as a state of pure pro attitude; more like "yay, x!," or even, "x ☺" rather than "I am glad that x." The anticipatory pleasure that Pippin feels about the ride in the truck may be *about* the ride in the truck in some sense, but the requirement that this be propositional in structure probably sets the bar too high.

So far I have argued that a feelings view of pleasure is problematic; the most plausible claim is that what pleasure experiences have in common is the fact that they feel good or have a positive hedonic tone. However, attitude-based accounts also encounter difficulties, particularly if the cognitive requirements for pleasure must be something that many nonhuman animals can meet. A nonpropositional version of Feldman's pro attitude might be minimalist enough to fit the bill. Notice that at this point these two accounts start to collapse into each other. An otherwise not specified positive hedonic tone could be interpreted as a nonpropositional pro attitude, and vice versa; both gesture at an elemental affective or attitudinal marker of acceptance or positivity.

This is similar to what psychologists refer to as valence—a positive or negative hedonic tone or marker that is a feature of many psychological states. Affective states are often described as either positively or negatively valenced, with sadness, fear, and anger being negatively valenced, and happiness and pride being positively valenced.[6] Prinz (2004) argues that valence should be understood in terms of inner reinforcers or labels that are not necessarily conscious but that contribute to our affective states in important ways. Aydede (2000) similarly argues that pleasure should be thought of as a primitive affective reaction. Perhaps, then, this is as far as we can go in characterizing pleasure, at least with respect to its content and feel: the experience of pleasure is a fundamental, primitive marker and motivator that collapses together the 'good' of feeling good with the 'good' of acceptance, welcoming, or desire.

III. THE SCIENCES OF PLEASURE

It may be useful at this point to move away from thinking about pleasure in terms of how it feels or is identified through our thought processes, and turn to consider its broader functions and roles. In the fields of psychology and animal behavior, pleasure and pain are viewed as basic and innate reward/punishment systems that play profound roles in shaping wide varieties of cognition and behavior. Indeed in the psychology literature 'pleasure' is often synonymous with reward. As a result of psychology's behaviorist legacy and the need to operationalize the objects of analysis, pleasure tends to be cashed out in terms of reinforcement, reward, or behaviors such as approach, acceptance, or prolonged interaction. Pleasure just is the "yes," "go," "good," "more" indicator.

Two examples where pleasure is defined help highlight the role of behavioral indicators in characterizing pleasure.[7] Paul Rozin defines pleasure as "a positive experience state that we seek and that we try to maintain or enhance" (Rozin 1999, 112). Nico Frijda describes pleasure as "the sense of accepting some stimulus, action or event, interaction or personal state. Pleasantness is the perceived property of that stimulus or other object of inviting you to accept it, or ones sensed willingness to have that stimulus or other object continue" (Frijda 2010, 102). The focus on behavioral evidence allows for the study of pleasure in nonhuman animals and nonverbal humans. This evidence includes signals (such as a smile) and behaviors that invite and extend the interaction, along with 'acceptance wriggles': "movements that intensify or expand the perception of the stimulus" (Frijda 2010, 101). These might include sniffing food, rolling a tasty wine around in our mouths to savor the flavors and aromas, kissing and caressing a loved one, even, Frijda suggests, certain cognitive engagements such as turning an idea over in one's mind in order to explore it and interact with it. While all of these modes of accepting or prolonging a pleasurable stimulus can occur nonconsciously, conscious feelings of pleasure can arise from these processes and further amplify them.

The claim that there are psychological systems that serve a reward or pleasure function is bolstered by neurobiological evidence for brain mechanisms that seem to perform those functions. In 1954 Milner and Olds accidentally discovered that rats with an electrode placed in a particular spot in their brains (the medial septum) would perform actions repeatedly that caused the electrode to activate that brain region, and would do so to the exclusion of all else. The rats preferred to stimulate the brain region rather than eat, drink, mate, care for their young, or any other activities. If they were not removed from the apparatus, they would allow themselves to starve to death while they self-stimulated. Olds and Milner decided that they had identified a pleasure center in the brain, and subsequent research has provided evidence of very similar pathways in humans (Linden 2011). Sometimes referred to as the 'pleasure circuit' these brain systems involve the dopaminergic pathways that run along the midline of the brain, through the ventral tegmental area, the nucleus accumbens, the medial forebrain bundle and lateral hypothalamus (Linden 2011; Panksepp 2012). Similar dopamine-mediated pleasure circuits are found throughout the animal kingdom, in mammals (Berridge and Kringelbach 2007), and even in reptiles and a species of roundworm, *C. elegans*, that is hundreds of millions of years old (Linden 2011).

The behavioral evidence along with the neurobiological evidence provides significant support for the argument that the systems that give rise to pleasure in humans are the result of a long history of evolution and natural selection. Pleasure is found across many species, plays important adaptive functions in the shaping and regulation of behavior, and is served by specific neural mechanisms that have been conserved across species. As Linden notes, "this evolutionary conservation, from worms to humans, speaks to the central role of pleasure in the development of behavior" (Linden 2011, 24).

This 'pleasure circuit' account provides a neurobiological description of the mechanisms serving our experiences of pleasure and explains some of its oddities (our now dangerous love of fat, sweet, and salt, for example). But it can also serve as the basis for an explanation for how more cognitively complex and perhaps specifically human pleasures may have developed. As Francois Jacob pointed out,

> natural selection does not work as an engineer works. It works like a tinkerer—a tinkerer who does not know exactly what he is going to produce but uses whatever he finds around him whether it be pieces of string, fragments of wood, or old cardboard … Evolution does not produce novelties from scratch. (Jacob 1977, 1163)

It is likely that the wide variety of complex pleasures available to human beings, including such intellectual pleasures as listening to beautiful music, working through philosophical arguments, and reading great literature, make use of our capacity for more simple, sensory pleasures.

Rozin (1999) makes just such an argument. He argues that sensory pleasure is evolutionarily and developmentally prior, but through human evolutionary history has been extended to give rise to more complex, Mill would say 'higher',

aesthetic, and mastery pleasures. Our pleasures at hearing a beautiful piece of music or solving a thorny logic puzzle are rooted in this evolutionarily ancient pleasure system. Specifically, Rozin hypothesizes that "these very different types of pleasure (viewed from the input side) funnel together somewhere into a common neural substrate. A common neurochemical mediator, in the endorphin and/or dopamine systems, might be implicated" (Rozin 1999, 129). In other words, the brain mechanisms of pleasure in humans may be involved in both sensory and more cognitive and aesthetic pleasures.[8]

From hereon out this is what I will call the *traditional view* of pleasure in the brain: pleasure is a reward system associated with a system of dopaminergic pathways in the brain that has been conserved through evolution. The system functions to reward adaptive behaviors and in some species has been modified and harnessed to reward other sorts of goods such as intellectual challenges, aesthetic appreciation, and advantageous social relationships.

IV. COMPLICATING THE TRADITIONAL VIEW: DISTINGUISHING TWO FACETS OF PLEASURE

However, a closer look reveals a more complicated and interesting picture. The neurobiological evidence suggests that the increased activity in the dopaminergic pathways actually occurs *before* the attainment of the desired/needed goal, and drops significantly right before the goal is reached. At that point another system identified with the activation of opioid sensitive pathways kicks in. If we think of pleasure as a reward, an "ahhh" upon the attainment of some desired goal, then the brain systems identified with the traditional 'pleasure circuit' model aren't doing that work.

Evidence suggests that there are actually two distinct processes that play a role in pleasure. The traditional view of pleasure lumps together two systems that are intertwined, but dissociable: a wanting (or seeking) system and a liking system. In this section I will review this research and argue that recognizing this distinction better explains several features of our pleasure responses, including the mechanisms of addiction. It also helps make sense of some of the tensions in our intuitions about pleasure and use of the term, and can shed light on aspects of our conceptions of happiness.

Kent Berridge (1996, 1999, 2002) argues that we must distinguish between two core affective processes. *Wanting* is a system associated with anticipations of pleasure or 'incentive salience', and motivations to seek out the stimulus in question. It is distinct from *liking*, which provides positive feedback at the consumption or attainment of the stimulus. These two processes are psychologically and neurologically dissociable, even though they are usually experienced as intertwined.[9] Panksepp has similarly argued for a SEEKING system that is distinct from

pleasure or reward.[10] The SEEKING system, Panksepp argues, is one of our most fundamental primary affects, and is probably involved in the appetitive aspects of most other emotions. It may also be what is malfunctioning in some cases of severe depression (Panksepp 2012; Badt 2013).

Berridge argues that although wanting and liking are usually closely intertwined, they are distinct systems that are dissociable behaviorally, phenomenologically, and neurobiologically. The wanting or SEEKING system is associated with the motivation to pursue, seek out, and attain objects and activities that are represented as good or attractive.

> Wanting is best viewed as a kind of hybrid core process that combines motivational, associative, and perceptual features. This process transforms the representation within the brain of external stimuli and events. The transformation, which is altered by the dopamine manipulations, imbues forebrain representations of objects and events with *incentive salience*. Attributions of incentive salience enables an event to grab attention and to be perceived as attractive, making it a sought-after incentive in its own right. (Berridge 1999, 542)

Panksepp argues that the SEEKING system is involved in all appetitive and approach behaviors. It "is a general purpose system for obtaining all kinds of resources that exist in the world, from nuts to knowledge, so to speak. In short, it participates in all appetitive behaviors that precede consummation" (Panksepp 2012, 103). Wanting and SEEKING motivate the drive to acquire ideas and information as well as more biologically basic resources.

Panksepp describes the felt experience of SEEKING as "excited, euphoric anticipation" (2012, 95) or "anticipatory eagerness" (96). It is the experience of wanting to engage, explore, a sense of curiosity and openness to the world. When its functioning is compromised, Panksepp hypothesizes, we suffer debilitating depression, a condition marked as a loss or numbing of caring, an inability to engage with the world, to strive or interact. "If you take the SEEKING system away, your mental life is so compromised, you cannot live happily" (Panksepp quoted in Badt 2013).

Similarly, Berridge describes the subjective feeling of wanting as "a sudden feeling that things, people and places were suddenly more attractive, desirable and compelling to pursue, and that generally the world was a better and brighter place" (2003, 117). However, he notes that the phenomenology of wanting as distinct from liking is hard to pin down, and may in some cases be absent altogether. He describes two case studies in which patients who stimulated electrodes implanted in the ventral forebrain report simply that such stimulation "feels good" or "I just feel good."

In some cases wanting seems to occur outside of conscious awareness altogether. Berridge (1999) points to studies with recovering drug addicts who were able to choose to self-administer one of two different infusions, some containing cocaine at varying doses, others containing saline (Fischman and Foltin 1992). These studies showed that even when the subjects reported no subjective

difference between a saline infusion and a very low dose of cocaine, and believed that both were saline, they chose to self-administer the very low doses of cocaine far more often. This has been interpreted to show that the subjects wanted (i.e., chose to self-administer) the cocaine even when they had no conscious experience of it. Other studies (Lamb et al. 1991) have reached similar conclusions about the dissociation of wanting from subjective experience.

Both Berridge and Panksepp identify the brain systems associated with wanting or SEEKING with the mid-brain dopaminergic pathways that run from the ventral tegmental area (VTA) to three main locations: (1) the medial forebrain bundle and lateral hypothalamus, (2) nucleus accumbens, (3) medial pre-frontal cortex via mesolimbic and mesocortical dopamine pathways. In other words, Berridge and Panksepp hold that the 'pleasure circuit' that Milner and Olds identified is more accurately a wanting or SEEKING circuit; it drives us to identify, seek out, and acquire the objects of our desire. It is distinct from liking, the positive feedback we receive upon consummation or achievement of a goal. Once we have what we want, the activity in the dopaminergic pathways quiets; wanting becomes, at least temporarily, replaced by liking.

Liking is associated with consumption and consummation, with the pleasure of achieving one's goal, of having what you want. Just before consummation or consumption of a sought-after object, activity in the dopaminergic pathways of the wanting system actually subsides. Liking is associated with positive hedonic feels, and, in rats, is associated with patterns of 'liking' behavior that include tongue protrusions and paw licking.[11]

The neural processes associated with liking, Berridge argues, are distributed throughout the brain, particularly along opioid transmitter pathways.

> If affect can be "free floating," as pleasure not assigned to a particular object, it may be in part because the neural instantiation of "liking" is distributed widely, including brain stem systems incapable of representing events as targets. By contrast, "wanting" may always have an object of desire. And wanting is mediated by forebrain systems tied to representations of objects and events. (Berridge 1999, 539)

Berridge's description suggests another distinction between wanting and liking: wanting takes an object; there is always *something* that is wanted, even if that something is fairly abstract. Liking, however, is not necessarily object directed; it is a nonspecific, 'free floating' positive feeling or hedonic value.

Berridge argues that wanting and liking are doubly dissociable; wanting can be blocked or altered without affecting liking, and vice versa. Some of the most powerful evidence comes from the identification of distinct neural systems for wanting and liking, illustrated through brain manipulations that can disable wanting circuits without affecting liking. Administration of dopamine receptor blocking drugs results in a temporary cessation of wanting behaviors (Berridge 1999). Rats given dopamine antagonists will stop seeking out food or other rewards, and even stop consuming food that is made available to them. However, when

force-fed, their hedonic reactions to sweet foods (a favorite) remain the same. In other words, even if they do not *want* the food, they still *like* it once they consume it. In circumstances where lesions have permanently knocked out crucial dopamine neurons, animals will not pursue food even if starving and surrounded by good food. But again, if fed, they show normal liking reactions.

Berridge argues that drug addiction exemplifies a dissociation in the other direction: an increase in wanting without a similar increase (indeed usually a decrease) in liking. Certain drugs of abuse sensitize the dopamine neurons, making them hyper-reactive to a wide variety of triggers (sounds, smells, social contexts, etc.). Addicts become gripped by a powerful want for the drug, one that is only slightly and temporarily quenched by actually consuming it. As Linden describes it, "as addiction and tolerance, dependence, and cravings emerge, the euphoria produced by the drug gradually drains away. Pleasure is replaced by desire; liking becomes wanting" (Linden 2011, 52).

In sum, there is strong evidence that what we tend to think of as pleasure has two distinct and dissociable components: wanting or SEEKING, and liking. They are served by distinct neural systems and, when conscious, can result in slightly different feelings and experiences.[12]

V. THE EVOLUTION OF WANTING AND LIKING

Why would this two-faceted system have evolved? Let us assume that wanting plays the function that pleasure did in the evolutionary argument I presented earlier; it is wanting that gets us to pursue adaptively advantageous objects and activities: nutritional food, sex, adequate shelter, and so on. If wanting plays the adaptive or functional role of getting us to engage in adaptive activities, what additional role does liking play?

The case of the drug addict illustrates why wanting is not enough. We need to not only be motivated to seek out and acquire objects and events that are good for us, we need to recognize when we've got them, mark the occasion for the future, and switch gears. Liking is both the diminution of wanting and the feeling of satisfaction and contentment upon consummation. It allows for a sense of accomplishment and a resetting of goals (perhaps making room for the wanting of something else). I suggest that both wanting and liking play important adaptive roles, and together allow us to respond to environmental, biological, and psychological needs in ways that keep us in balance and moving forward.

The idea that a sense of liking or satisfaction helps us reset goals and re-allocate attention is consistent with Carver and Scheier's theory that positive feelings help regulate the flow of behavior by providing information that satisfactory progress on a goal is being made (Carver and Scheier 1990; Carver 2003).[13] One of the challenges facing any organism, though perhaps especially humans, is the need to

make progress on multiple goals at once, and to continually monitor that progress in order to determine if their actions are not enough, too much, or just right. Energy is a precious commodity that must be allocated appropriately to ensure that an organism is putting sufficient effort into the right things and not squandering energy on unproductive or fruitless activities. Carver and Scheier's argument is that positive feelings let the organism know that it is making sufficient progress on a goal and that attention and energy could be scaled back and diverted elsewhere.[14]

For this to be the case the two facets of pleasure must receive appropriate information about the states of the organism and its needs. Panksepp describes the SEEKING system as being responsive to bodily homeostatic mechanisms. He argues that "specialized nerve cells known as interoceptors (or, 'need detectors'), found in ancient medial regions of the brain and also in some other bodily organs, gauge homeostatic imbalances that lead to thirst and other affective indicators of bodily needs" (2012, 99) such as sex hormone levels and core body temperature. In addition, he argues, the SEEKING system is responsive to affective changes, particularly negative affective states that may arise from psychological pain, stress, and social rejection or loneliness. As human social organizations became more complex, social relationships and the cognitive capacities needed to pursue and sustain them became just as necessary for survival as food and water. Panksepp argues that one of the greatest sources of distress is social rejection and abandonment, and one of the greatest sources of joy is a sense of social approval, acceptance, and connection. The SEEKING system, he argues, is involved in social, affective, and intellectual affairs as well as bodily and sensory ones.

Frijda (who does not distinguish between wanting and liking in his discussion of pleasure) and other psychologists have made a similar argument: that pleasure, or reward, plays a role in monitoring overall well-being. Frijda argues that pleasure is informed by and responsive to systems that monitor well-being and that "pleasure reflects well functioning. It reflects well functioning of one's functions, skills, and competences: bodily, motor, perceptual, cognitive, emotional, social," especially when well functioning is not routine (Frijda 2010, 108). Putting these different claims together, we can describe wanting and liking as two sides of a coin: one as a response to information about need or homeostatic imbalance, and the other as a response and signal of a meeting of need or return to balance. Well functioning and well-being in the larger sense are associated with both sides of this coin, kept spinning easily.

I should at this point note that, in making this claim about the adaptive functions of a two-faceted pleasure system, I am not denying the fact that, like many adaptations, the systems are prone to error and exploitation. Wanting is not an unerring motivator toward the good, and liking is not an infallible signal of its attainment. We enjoy sex that is not reproductive, and crave fatty, salty, sweet foods that are terrible for us. Drugs of abuse exploit and overwhelm our neurochemistry and do terrible long-term damage. Associative learning and recall allow us to form new desires and attachments, some of which are lovely, others, strange.[15] One of

the virtues of the two-faceted account of pleasure I am describing is that it provides a basis for understanding many of the errors and exploitations as well as the standard cases.

VI. TOO MUCH PLEASURE: HOW TO RECONCILE THE WANTING AND LIKING SYSTEMS WITH OUR CONCEPTIONS OF PLEASURE

So far I have argued that 'pleasure' actually picks out two distinct but interacting neurobiological systems: wanting and liking. In most cases the activities of the two systems are closely intertwined, but they can be pulled apart neurobiologically, functionally, and phenomenologically. At this point it may seem that we ended up with several accounts of pleasure where what we wanted was clarity about just the one. How should we reconcile the information about the wanting and liking systems with the notion of pleasure?

One plausible position is that pleasure should be identified only with wanting. The wanting system plays the adaptive functional role traditionally assigned to pleasure, that of motivating us to pursue activities and objects that are of evolutionary value. Some of the things we think of as paradigmatically pleasurable: sexual activity, drugs, eating when hungry and drinking when thirsty, all involve activation of the dopaminergic wanting circuits. This is the traditional 'pleasure circuit' view I described earlier. Therefore, perhaps we should think of the activity of the wanting system as pleasure and consider the liking system to be something else—satisfaction or contentment perhaps.

There are several drawbacks to identifying pleasure solely with wanting. For one, it would seem to require us to say that what drug addicts experience in their intense craving for the drug is pleasure. But there is little in their behavior or self-reports that would support this. The focused engagement and excitement of wanting is pleasant, but being in the grips of unquenchable wanting is wretched. A pleasure-as-wanting view would seem to generate the conclusion that in such cases too much pleasure is *un*pleasurable, a difficult claim to make coherent if wanting just *is* pleasure.

Too, we are faced with the fact that activity in the dopaminergic wanting system drops just *before* achieving the object of want, implying, on this analysis, that actually getting what one wants is not pleasurable. In short, the equation of pleasure with wanting raises several puzzles and violates some of our core intuitions about pleasure. It makes sense of the view of pleasure as a sort of excited engagement or eagerness, but not of pleasure as a kind of intense satisfaction, an "ahhh" upon consummation or consumption.

We might therefore choose to identify pleasure with liking. This is what Berridge seems to do (he describes the feelings of liking as feelings of pleasure). Identifying pleasure with liking allows us to avoid saying that addicts experience pleasure from wanting the drug, though they do experience (increasingly fleeting)

pleasures from consuming the drug. Likewise, while the pursuit of desirable things such as sexual activity involves the activation of the dopamine systems associated with wanting, orgasm itself involves a sharp drop in dopamine and a spike in activation of the opioid systems (liking). Orgasms are pleasurable, if anything is; therefore, one might argue, surely it should be the liking system that is associated with pleasure.

But this too runs afoul of some of our intuitions about pleasure. For one thing, it would require us to rethink claims about the functions of pleasure. As I argued previously, the hypothesized evolutionary functions of pleasure are those associated with the wanting system. If we identify pleasure with liking then pleasure is not what motivates us to approach, explore, consume goods; it is perhaps what marks success or acquisition. Too, while the subjective experience of liking does capture some of what we think of as pleasurable, the experiences of wanting, as "excited, euphoric anticipation" and "feeling good" do as well.

In picking either wanting or liking (but not both) to identify with pleasure we end up needing to discard some of our intuitions or revise some aspects of the concept. Of course another option is to decide that the concept of pleasure is simply incoherent and should be abandoned. We could be eliminativist about pleasure and throw the concept aside in favor of more neurologically precise talk of wanting or liking (or, increased activation in relevant dopaminergic or opioid pathways).

However, there is no need to jettison the concept of pleasure altogether. Pleasure plays a fundamental role in both our folk and scientific psychologies, as is evidenced by the definitions and descriptions I gave earlier. The concept of pleasure picks out, and is explained by, features of both the wanting and liking systems, but is not otherwise incoherent. Too, while wanting and liking can be dissociated, revealing interesting and important differences, under normal circumstances they work together. When I take pleasure in something, good food, a great novel, a challenging puzzle, it is in the sense that these pursuits activate both my wanting and liking systems. Taking pleasure in something is a dynamic process.

I argue, therefore, that we should think of pleasure as identified with the interaction and interplay of both the wanting and liking systems. The pleasure systems together motivate and shape behavior in profound ways, encouraging organisms to seek out and explore perceived goods, and rewarding them for doing so. Both anticipation/ exploration and attainment/ consummation are pleasurable, albeit in slightly different ways, laying the groundwork for the dizzying array of human pleasures, from food and sex, to novels and symphonies.[16]

VII. RESOLVING CONFLICTING INTUITIONS ABOUT PLEASURE

The tug and pull of intuitions at play here has a long and distinguished history in the philosophy of pleasure. Epicurus made a distinction between active or *kinetic*

pleasures, which derive from the activity of satisfying desires (drinking when thirsty, for example), and static or *katastemtic* pleasures, which is a state of having satisfied one's desires, of not having occurent desires. Pain, for Epicurus, was associated with want and desire therefore the states of *ataraxia* (freedom from pain in the soul) and *aponia* (freedom from pain in the body) were for him the highest good. "When, therefore, we maintain that pleasure is the end [*telos*] … (we mean) freedom from pain in the body and from trouble in the mind" (*Letter to Menoiceus*, 1926 Bailey translation).

In *The Republic* and, in more detail, the *Philebus*, Plato advances a view about pleasure that is somewhat similar to the Epicurean notion of kinetic pleasure, as a replenishment of lack, a relief of pain or deficiency. Examples of bodily replenishments such as drinking when thirsty play a central illustrative role here. But Plato does include intellectual pleasures (pleasures of the soul) as well. He expands his pleasure-as-replenishment analysis to include unrecognized deficiencies such as deficiencies in knowledge. These pleasures are, therefore, perhaps even more sweet since we do not perceive the pain of deficiency. For Plato, all pleasure involves the replenishment of a lack or deficiency.

It is this point that Aristotle challenges in the *Nicomachean Ethics*.[17] Aristotle notes that the pleasures that accompany the activity of replenishing a lack are distinct from the pleasures that occur afterward (1153a 2–6; see discussion in Van Riel 2000). Drinking that cold drink when you are thirsty is marvelous, as is the feeling of not being thirsty, but they are different pleasures. In the first case, there is pain along with the pleasure. In the second case, there is no pain. But even more problematic for the Platonic view, Aristotle points out that there are pleasurable activities that do not involve any lack or deficiency at all, perceived or otherwise. A pleasure-as-replenishment view is simply not adequate.

Instead Aristotle argues that pleasure is best regarded as something that accompanies and completes activities, with the best activities giving rise to the best pleasures. Pleasure is not the replenishment of a lack or deficiency and it is not an event that shows up at the end of an activity and marks the completion of it. "Pleasure completes the activity not as the corresponding permanent state does, by its immanence, but as an end which supervenes as the bloom of youth does on those in the flower of their age" (*NE* 1174b 39). The best pleasures, as Aristotle famously argues, supervene on activities that are complete in themselves at every moment, the paradigm example being the activity of contemplation. Contemplation, the activity that expresses the full flourishing of human functioning for Aristotle, is certainly not associated with deficit or lack.

It is tempting to map wanting and liking on to kinetic and katastemtic pleasures, respectively; the pairs of pleasure types are similar in many ways. But the picture is more complicated and interesting than such a mapping implies. As Aristotle argues, activities that do not involve deficit or lack can be intensely pleasurable in their pursuit and not just in their completion. Perhaps this is one of the hallmarks of what Mill refers to as 'higher pleasures'; reading a book, solving a puzzle, listening to a piece of music are activities that are driven by appetites such

as curiosity, an intellectual need to understand or solve, that are themselves pleasurable. This is captured in the contemporary psychologist Csikszentmihalyi's idea of flow: a sense of complete absorption and effortless but energetic engagement (Csikszentmihalyi 1990).[18] The debates between Plato, Aristotle, and (more indirectly) Epicurus echo the distinction between wanting and liking, the pleasures of pursuit and engagement versus the pleasures of contentment and consummation, but also—Aristotle in particular—encourage us to enrich the concept of wanting to recognize that not all forms of this pleasure are drawn by deficits or lacks. We also form wants of intellectual curiosity or aesthetic engagement.

Tensions in our intuitions about and uses of the term 'pleasure' have marked the philosophical debate over the nature of pleasure from the beginning and persist in contemporary discussions in both the philosophical and psychological literature.[19] Instead of deciding either that wanting is really pleasure, or liking is really pleasure, or that pleasure as a concept should be eliminated, I recommend that we continue to hold on to *both* facets of pleasure. The existence of two interacting neural systems associated with pleasure helps *diagnose* the cause of tension, but not eliminate it. Indeed, as Berridge points out, most of the time, "in our conscious experience of emotions, we want the things we like, and we like the things we want" (1999, 534–35). Looking again at the arguments about the adaptive functions of these two systems, we can see that they are meant to work together, with neither wanting nor liking able to capture all of the uses of the word 'pleasure'.

I suggest, therefore, that 'pleasure' picks out two distinct, but interelated and interacting things. This would explain the tensions in our intuitions about it, without requiring us to decide that one category of intuitions is wrong or mislabeled. Pleasure doesn't break apart only when one looks at its instantiation at the level of neural mechanism; in fact, the fissures are evident all the way through the concept and its applications.

VIII. PLEASURES, FEELINGS, AND ATTITUDES

Taking seriously the idea that 'pleasure' is served by, and picks out, two distinct but closely related systems—the wanting system and the liking system—provides new insight into the challenges of trying to cash out the conception of pleasure in terms of conscious feelings or attitudes. The pleasure systems (as I shall now refer to the pair of wanting and liking) are fundamental to the operations of most other affective and behavioral systems, and involve evolutionarily basic neurobiological mechanisms. The pleasure systems influence thought, behavior, and feeling in myriad ways, but are not identifiable with particular thoughts, behaviors, or feelings. This is why attempts to analyze pleasure in terms of feelings or attitudes are unsuccessful. Looking to conscious feeling or propositional attitudes in order

to capture the nature of pleasure is simply the wrong level of analysis; the pleasure systems surely exact profound influences on our conscious feelings and cognitive attitudes, but from the bottom up. To borrow an analogy from Berridge, looking at feelings and thoughts to identify pleasure is akin to using the ripples on the surface of a pond to understand what sorts of fish are swimming far below.

One of the consequences of the view of pleasure that I am advocating is the perhaps jarring idea that pleasure is not necessarily conscious. The activities of the pleasure systems influence conscious experience, and many, perhaps most, pleasures, result in conscious feelings. But the pleasure systems can do their work outside of conscious experience. We can be affected by wantings and likings that subtly modulate our thoughts and behavior without registering in consciousness. Perhaps a better way to put this is that it is not primarily through conscious experience that pleasures perform their functions. Conscious feelings simply can't do all the work that we assign to pleasure.[20]

If we were to insist that pleasures are necessarily conscious, then we would have to give up on a lot. For one thing, much of what we currently think of as the functional roles of pleasure must be assigned to something else, as much of that work happens outside of consciousness. Too, an identification of pleasure with what is conscious would conflict with the neurological and evolutionary pictures of pleasure that I have reviewed. Instead, I argue, we should recognize that certainly (and happily) we feel our pleasures, but what we feel does not exhaust everything about pleasure. In this way pleasure is similar to pain. As Hardcastle (1997) and others have argued, much of pain processing occurs prior to, and sometimes independently of, the sensation of pain. It is not the feeling of pain that motivates you to move your hand away from the stove; your hand has already started to move long before (in neural processing timescales) you consciously feel the pain. Pleasure is similar. It is not necessarily the conscious feeling of pleasure that motivates or satisfies us; we are motivated and satisfied, and under certain circumstances, this feels pleasurable.

IX. PLEASURE AND HAPPINESS

The claim that I am making is that our intuitions about pleasure actually capture and pick out the activities of two distinct, but interacting neurobiological systems: wanting and liking. These labels pick out two sets of mechanisms that give rise to (through the actions of many other cognitive and behavioral systems) the wide variety of thoughts, feelings, and activities that we describe as pleasurable. This account allows us to identify moments of calm satisfaction as pleasurable and allows that excited engagement and pursuit are also pleasurable, albeit in different ways.

The cases where these two systems become *dis*-entwined, where wanting outpaces liking (as in drug addiction), or wanting is curbed without affecting liking

(as with depression), suggests that, while the activation of either system feels good and is perceived/appraised as good, what one wants is a balanced interaction between the two. Here is one way to draw a connection between pleasure and happiness. Happiness, surely, requires a balance between wanting and liking, between as Kekes puts it, "doing and having what one wants" (Kekes 1982, 360). This balance is what keeps us productive, engaged, and moving forward in adaptively productive ways. The two facets of the pleasure system motivate and modulate our thoughts and behaviors in order to keep us meeting our needs, working toward our goals, and switching to new goals as necessary. The pleasure system is a vital part of what keeps us engaged with the world, and keeps our needs and interests in balance with environmental demands and resources.

Happiness, however, requires more than a balance between the activities of the wanting and liking pleasure systems. The two facets of pleasure serve as online, in the moment, goads and markers that encourage us to pursue interesting or useful activities and give us a sense of satisfaction when we have met a goal. Happiness is similar, but operates over longer time frames, involves a wider repertoire of thoughts and affects, and is connected with an individual's overall sense of well-being. Many philosophical accounts of happiness tie happiness to well-being and then go on to discuss well-being in terms of the ability to form personal goals that are meaningful and important, and to be able to make progress on those goals (Kekes 1982; Kraut 1979, e.g.). Happiness requires the ability to take on challenges but also and importantly to feel that you can meet those challenges. If the environment or circumstances set challenges that are too hard to meet, then frustration and unhappiness ensue. If one has few demanding goals or challenges, then complacency and boredom set in.

Setting long-term meaningful goals and assessing our progress on them is not something the pleasure systems are designed to do. Such activities require processes of reasoning, judgment, memory, and anticipation. But the pleasure systems can imbue those goals (or the relevant subgoals) and activities with incentive salience, making them wants—objects of striving in their own right, and can mark our achievements with satisfaction, giving us a sense of progress and accomplishment. Positive psychology texts are full of advice about how to pursue happiness through creating both long-term meaningful goals, and breaking them down into concrete, manageable steps (Lyubomirsky 2008, e.g.). If we can see a smaller goal (getting a good time in a 5k race) as a step toward a larger, more abstract, goal (becoming a world-class runner), it allows the pleasure systems and the affect systems that interact with them to react to it as an object of pleasure in its own right.

The pleasure systems arguably contribute to happiness in another way—by making our capacity for happiness possible. The pleasure systems are evolutionarily primary and play a role in the evolutionary development and functions of other affective systems. Panksepp (2012) describes SEEKING (wanting) as *the* most fundamental or primary affect system, and as giving rise to and playing a role in other positive affects such as euphoria, desire, joy, and pride. Likewise our

capacities for affiliative, social affects such as maternal care and love may depend on the opioid systems associated with liking (Keverne 2005). Our capacity for a wide range of positive affects is arguably dependent on our capacities for pleasure.

Both pleasure and happiness are closely tied to well-being and welfare, in both the narrower psychobiological sense and in the broader sense of what it means to live a full and satisfying human life. I have argued elsewhere that happiness is both a barometer of our well-being and a means of cultivating it (Sizer 2010). The pleasure systems are an essential part of a more extensive network of affective and cognitive systems that support happiness, helping us to form worthy goals, pursue them with vigor, and interest, and feel our own sense of competence and satisfaction when they are met.

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NOTES

1. Mill, too, defined pleasure in terms of desiring: "desiring a thing and finding it pleasant, aversion to it and thinking of it as painful, are phenomena entirely inseparable or, rather, two parts of the same phenomenon—in strictness of language, two different modes of naming the same psychological fact; that to think of an object as desirable (unless for the sake of its consequences) and to think of it as pleasant are one and the same thing; and that to desire anything except in proportion as the idea of it is pleasant is a physical and metaphysical impossibility" (Mill 1861/1979, 38).
2. Labukt 2012 makes a similar argument.
3. Katz 2006 makes a similar point. Interestingly, Sidgwick also makes a similar point, but with respect to feelings: "The pleasures of thought and study can only be enjoyed in the highest degree by those who have an ardour of curiosity which carries the mind temporarily away from self and its sensations …. In all kinds of Art, again, the exercise of the creative faculty is attended by intense and exquisite pleasures: but it would seem that in order to get them, one must forget them" (Sidgwick 1874, 49).
4. Sumner raises this concern in his (1998) review of Feldman's *Utilitarianism, Hedonism & Desert.*
5. For the argument that primates such as baboons are capable of propositional thought, see Cheney and Seyfarth 2007. For the position that primates are not capable of propositional thought, see Bermudez 1995; D. Davidson 1985; Glock 2000.
6. Prinz argues that while many emotions are intrinsically valenced, some complex emotions, such as nostalgia, may combine the emotions joy and sadness and therefore have two conflicting valence markers (Prinz 2004, 165).
7. These definitions capture ideas similar to the attitudinal approach, but cash them out in terms of behavior.
8. Kringelbach (2010) makes a similar argument: "Such higher order pleasures might be conceptualized as higher-dimensional combinations of basic pleasures and as such may reuse some of the same brain mechanisms" (203).
9. As Berridge notes, "in our conscious experience of emotions, we want the things we like, and we

like the things we want. Wanting and liking seem so closely entwined that we might almost regard the words as referring to the same basic emotion. But the underlying core processes of positive emotion may not fit into this familiar psychological category of reward" (1999, 534–35).

10. Panksepp capitalizes the labels he has assigned to the basic or primary affect systems, in part because he wants to underscore that these labels are not intended to capture folk psychological categories, but instead pick out "real physical and distinct networks for various emotions … in mammalian brains" (2012, 2).
11. Patterns of behavior have been identified as indicative of positive and negative hedonic or affective reactions in both human and nonhuman animals such as rats. Rats, like humans, love sweet tastes and dislike bitter tastes. Sweet tastes elicit tongue protrusions and paw licking. Bitter tastes produce mouth gape, headshake, face wash, and forelimb flailing—quite similar to our own reactions to bitter and sweet. These behaviors in response to sweet/bitter persist even when dopamine antagonists have knocked out all wanting/SEEKING behaviors (Berridge 1999).
12. From hereon out I will stick with Berridge's terminology of 'wanting' and 'liking' unless I am discussing Panksepp's work.
13. The positive feelings that Carver is arguing signal that satisfactory progress has been made are distinct from the positive feelings of approach/wanting/SEEKing (see Davidson 2000).
14. Per Carver, positive feelings are a signal that "you are doing better at something than you need to" (2003, 243) and therefore can pull back or cease that activity. I disagree that positive feelings always signal that one is doing *better* than necessary. Particularly with feelings of liking, it is more apt to say that the feeling signals a kind of success or consummation, and that this allows the organism to choose to either extend that activity or switch gears. The fact that experiences of liking fade quickly and are susceptible to satiation effects further undermines the idea that such experiences signal that we are doing better than necessary.
15. See Bloom's (2010) *How Pleasure Works: The New Science of Why We Like What We Like* for a discussion of some of our more lovely and strange pleasures.
16. This picture of pleasure is consistent with some theories about pleasure from music. Leonard Meyer (1956) argued that music that we find particularly enjoyable tends to strike a balance between subverting our expectations and coming to satisfying resolutions, engaging both our curiosity and our sense of satisfaction as the music unfolds. The work of psychologists of music, Sloboda and Juslin (2001), has reached similar conclusions. As philosopher Jenefer Robinson concludes in her discussion of this work, "emotional thrills and chills are the result of the way music plays with our expectations: mixing the interestingly unexpected with the satisfyingly expected" (2005, 363). One way to think of this is that pleasure from music involves the engagement and interplay of both wanting and liking systems.
17. Van Riel (2000) argues that Aristotle does not properly recognize that Plato extends his account of pleasure to include intellectual pleasures, and incorrectly characterizes the account as applying only to bodily pleasures.
18. Panksepp and others explicitly make a connection between wanting/SEEKING and an experience of flow (see also Katz 2006).
19. Several other philosophers have argued previously that 'pleasure' picks out several distinct phenomena. See Wright (1963) and Prinz (2004).
20. See Sizer 2006 for a similar argument about affective feelings.

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