SPATIAL AND TEMPORAL DIMENSIONS OF HUME ON PROBABILITY AND THE PASSIONS

AS DIMENSÕES ESPACIAIS E TEMPORAIS DE HUME SOBRE AS PAIXÕES

Angela Coventry
Portland State University
coventry@pdx.edu

ABSTRACT: This paper is about Hume on the impact of space and time on probability judgements and the passions. It turns out that anything closely related to us in space and time has a powerful intensifying effect on our judgements and passions whereas a reduction of intensity is associated with distance in space and time. These effects of space and time may lead to mistakes in probability judgements that may be corrected. Space and time impact the passions in ways that are relevant to Hume's approach to morals and politics, since he grounds morals and politics in passions. The natural tendency to prefer the present and near over the remote in space and time may give rise to errors in moral judgements and even to actions that go against our own interest as a member of society. This tendency cannot be eliminated from human nature but may be corrected, restrained or guided in different directions with the right sort of conditions in place. Hume on the spatial and temporal dimensions of probability and the passions applies to a range of topics of contemporary interest. His approach to probability judgements in space-time may be considered a precursor to recent work on the cognitive psychology of decision-making. When it comes to the passions, Hume's observations on the effect of distance in time in particular can be compared to discussions of temporal discounting, central in disciplines such as behavioral economics, neuroscience, psychology, environmental policy, and recent debates in experimental psychology and philosophy over future bias.
KEYWORDS: Hume; Space; Time; Probability; Passions.

RESUMO: Este artigo examina as implicações da perspectiva de Hume sobre o tempo e espaço em relação aos julgamentos prováveis e às paixões. Acontece que qualquer coisa estreitamente relacionada a nós no espaço e tempo tem um efeito poderoso e intensificado em nossos julgamentos e paixões, enquanto a distância no espaço e tempo reduz a intensidade dos mesmos. Esses efeitos do espaço e tempo podem levar a erros nos julgamentos prováveis que podem ser

corrigidos e impactam as paixões de modo relevante para a abordagem de Hume da causação, da moral e da política, já que ele fundamenta a causação, moral e política em paixões. A tendência natural de preferir o presente e o contíguo em detrimento do distante no tempo e espaço pode levar a erros em julgamentos morais e mesmo a ações que contrariam nosso próprio interesse como membros da sociedade. Essa tendência não pode ser eliminada da natureza humana, mas pode ser corrigida, restringida ou guiada em diferentes direções com o tipo adequado de condições em vigor. Além disso, a atenção de Hume para as dimensões espaciais e temporais das paixões é relevante para uma gama de interesses contemporâneos, como economia comportamental, psicologia, neurociência e política ambiental.

PALAVRAS-CHAVE: Hume; Espaço; Tempo; Probabilidade; Paixões.

1. Introduction

The impact of space and time on our everyday judgements and feelings is commonly acknowledged. It is understandable that the individual under time pressure makes more mistakes in probability judgements[1] and studies in spatial decision-making show that people in their actions generally tend to give less weight to spatially distant effects than to local, nearby effects.[2] When it comes to our passions, the familiar proverb, that *absence makes the heart grow fonder*, describes a feeling of greater affection between friends and lovers during separation at a great distance. There is in fact a growing body of literature exploring differences between close proximity and spatially distant personal relationships.[3] There is interest in whether temporal and spatial closeness between partners increases emotional closeness and how those persons in long-distance relationships maintain closeness despite distance apart. Consider as well the numerous riffs on the saying that *time heals all wounds* to suggest that feelings like anger, sadness or disappointment gradually lessen or fade as time passes. In 1660, Blaise Pascal takes note in *Penseés* 1.122 that "time heals griefs and quarrels" simply because "we change and are no longer the same persons."

David Hume explores the various ways that space and time influence probability judgements and the passions in his first published work *A Treatise of Human Nature*.[4] It turns out that anything closely related to us in space and time has a powerful intensifying effect on our judgements and passions whereas a reduction of intensity is associated with distance in space and time. These effects of space and time may lead to mistakes in probability judgements that may be corrected. Space and time impact the passions in ways that are relevant to Hume's approach to morals and politics, since he grounds morals and politics in passions. The natural tendency to prefer the present and near over the remote in space and time may give rise to errors in moral judgements and even to actions that go against our own interest as a member of society. This tendency cannot be eliminated from human nature but may be corrected, restrained or guided in different directions with the right sort of conditions in place. Hume on the spatial and temporal dimensions of probability and the passions applies to a range of topics of

[1] Rothstein, 1986.
[2] Thompson et al, 2015.
[3] See for example Kelmer et al, 2013 and Dargie et al, 2015.
[4] The following abbreviations are used for David Hume: 'T' for *A Treatise of Human Nature: Being an Attempt to Introduce the Experimental Method of Reasoning into Moral Subjects*; 'EHU' for *An Enquiry Concerning Human Understanding* and 'E' for *Essays Moral, Political, Literary*. References cite the book, chapter, section, and paragraph for the *Treatise* and the *Enquiry* and a page number is provided for the *Essays*.

contemporary interest. His approach to probability judgements in space-time may be considered a precursor to recent work on the cognitive psychology of decision-making. When it comes to the passions, Hume's observations on the effect of distance in time in particular can be compared to discussions of temporal discounting, central in disciplines such as behavioral economics, neuroscience, psychology, environmental policy, and recent debates in experimental psychology and philosophy over future bias.

Section Two of the paper explores the ways Hume on space and time interacts with probability. Section Three is about the intersection of space and time with the passions and the implications for morals and politics in Hume's system. Both sections consider the enduring and interdisciplinary significance of Hume's take on the wide-ranging effects of space and time on the decisions made and the feelings had in our daily lives.

2. Space, Time and Probability

Hume thinks space and time are made up a finite number of simple and indivisible points or moments. Objects are made up of these finite number of points or atoms, each point "endow'd with color and solidity" (T 1.2.3.15). We interact with the "disposition of visible and tangible objects" through the senses of sight and touch and gain the idea of space (T 1.2.3.7). With repeated experience the senses give us complex impressions of objects, which are clusters of these indivisible points that are arranged together in one way or another, so think of one object right next to or ten feet from another object and so on: we survey the complex impressions of objects and the varying distances between them. We form the abstract or general idea of space based on the way objects regularly appear to the senses in a certain arrangement or manner (T 1.2.3.5). We find a commonality in the arrangements of the points that make up objects, omit the differences between the arrangements of objects, as far as possible, and form an idea of space on that manner or disposition of the points in which they agree. Hume had described abstract ideas as particular ideas, which can represent many objects, even those very different from themselves, when they are attached to general terms in language (T 1.1.7.1).

Time is also an abstract idea. Unlike space, however, time is derived from the succession of impressions of sense and impressions of reflection, the passions (T 1.2.3.6). This includes then impressions of the succession found in the motion and change of physical objects, and the changes in states of emotion. This means that the parts that make up time "are not co-existent" and so "that idea must be deriv'd from a succession of changeable objects" (T 1.2.3.6-8). The

idea of time arises from the experience of a sequence or succession of objects that change, a sequence that is made up of simple and indivisible moments that appear to us in a certain succession or manner (T 1.2.3.7). The abstract idea of time is a particular idea, so an idea of a particular passage of time, but requires the experience of a succession of impressions of changeable objects or feelings (T 1.2.3.9).

Probability judgements are formed by elements of spatial and temporal information present in the environment. We experience causes and effects among objects that are *contiguous* in space and time, where there is a priority in time of the cause, that the cause precedes the effect, and that there is a constant union between cause and effect. After many instances of observing the behaviors of constant conjunction, priority in time and contiguity in time and space between the two events without exception, the mind by custom expects a connection between the two events. When we feel a connection between the events, "we call the one *cause* and the other *effect*, and infer the existence of the one from that of the other" (T 1.3.6.2). In making decisions about probabilities, we give preference "to one set of arguments above another" and make a determination in judgement from one's own "feeling concerning the superiority of their influence" (T 1.3.8.12).

Contiguity in space and time between the causes and effect is "essential" to causality and appears as a rule in the rules to judge cause and effect (T 1.3.2.6). These rules are reflectively formed based on our past experiences of causal reasoning and serve to distinguish between superfluous and essential circumstances in causal relations (T 1.3.13.11). There are eight rules given and the first rule states that the cause and effect "must be contiguous in space and time" (T 1.3.15.3). Yet space and time may also impact our feelings in ways that lead to errors in judgment. In one kind of irregular probability judgements (an 'unphilosophical probability'), Hume notes that time weakens the force of an argument when the force of the argument should remain constant. Since arguments can be "more or less convincing according as the fact is recent or remote," this allows that "an argument must have a different force to day, from what it shall have a month hence" (T 1.3.13.1). The degree of belief that we have is dependent on the transfer to the idea of the force and vivacity of another impression or an idea. Any lessening of the transfer of force over time may reduce the probability of a belief. The problem is that time will weaken the force of an argument when the force should remain constant. Hume maintains that the diminution of vivacity greatly influences the understanding and "this secretly changes the authority of the same argument, according to the different times, in which it is propos'd to us" (T 1.3.13.1).

A second unphilosophical probability arises when we are more affected by events that have happened recently. A recent experiment that is "fresh in the memory" will have "a superior influence on the judgment" (T 1.3.13.2). To illustrate, Hume writes of "a drunkard who has seen his companion die of a debauch, is struck with that instance for some time, and dreads a like accident for himself," however when the memory of the incident fades, "his former security returns" (T 1.3.13.2). In the case of belief, Hume notes that spatial distance also weakens our ideas. For instance, being close to home makes for more vivid ideas than being very distant; Hume writes, "When I am a few miles from home, whatever relates to it touches me more nearly than when I am two hundred leagues distant" (T 1.3.8.5; EHU 5.2.17). A person's religious convictions may be stronger if they have overcome the spatial distance and visited the holy and sacred places of their religion in comparison to those who have not made the journey (T 1.3.9.9).

The application of rules to judge causes and effects are supposed to correct irregular causal judgements. How these corrections take place via the rules occurs in the discussion of another species of unphilosophical probability, prejudice. Prejudices are rashly formed general rules such as hasty generalizations about a person's character due to their country of origin. These sorts of general rules can have such a strong hold on the mind that they continue to influence judgment even when contrary to plain observation, reason and experience. The explanation has to do with custom, the basis of all probable reasoning. In probable reasoning, "custom operates with its full force, when objects are presented, that are exactly the same as those to which we have become accustom'd" (T 1.3.13.8). But the force of custom may also operate when the objects are merely similar, and not exactly the same. The force should diminish with dissimilarity but the force of the general rule in the mind holds, and the customary transition of the imagination naturally carries us to a lively conception of the usual effect. The other kind of rules, the rules to judge causes and effect, correct the biases that might result from the mind being affected unduly by the frequent experience of the accidental causes. The second kind of rule applies to the first type of rule. We review our judgment, compare it with "the more general and authentic operations of the understanding," and then we reject the judgment as "being of an irregular nature" (T 1.3.13.12). Just as general rules may push the imagination to make erroneous judgments, so too general rules may guide the imagination toward reasonable judgments. Now this does not always happen: one or the other use of general rules may take place in the same person, depending on many factors such as their temperament at that time.

Heuristics and biases

Neuroscience examines the importance of probable inferences as a fundamental feature of human cognition and recognizes space and time as central to the experience of causality in the world.[5] Hume on the process and refinement of probability judgements may also be a precursor to Tversky and Kanheman's landmark research on the use of heuristics and biases in the psychology of decision-making. According to Tversky and Kanheman, judgment involves assessments of the probability or likely frequency of an event in an uncertain world and people tend to "rely on heuristic principles to reduce the complex tasks of assessing probabilities to simpler judgmental operations."[6] These three heuristics are representativeness, availability, and anchoring and adjustment. Representativeness are assessments of the likelihood that one object or event belongs to a particular category based on the resemblance of that object or event to typical members of that category, and availability is when people judge probabilities of events based on the ease with which instances of the occurrences in question can be brought to mind. In the anchoring and adjustment heuristic, people employ a certain starting point, the anchor, in numerical calculations and adjust from that basis by increasing or decreasing our estimation.

Tversky and Kanheman find that reliance on these heuristics is "useful" but they may lead to "severe and systematic errors."[7] They list various biases that result from the use of each heuristic. The representativeness heuristic for instance underlies "the illusion of validity," our tendency to overestimate our own accuracy in making probability judgments.[8] The more representative an object or event is, the more confident we feel in our predictions about obtaining a certain outcome. However, given that many outside factors may influence the probability of the outcome, without affecting the representativeness of the object or event, we really should not be so confident in our ability to make predictions. From the availability heuristic arises the bias of ease of retrievability when people tend to form judgments more biased toward what is easily retrievable, for example, the most recent information allowing that "recent occurrences are likely to be relatively more available than earlier occurrences."[9] There is also illusory correlation from availability. Tversky and Kanheman explain the strength of the association between two events provides the basis for the judgment of how frequently the two

[5] See Woods et al, 2014. See also Straube and Chatterjee, 2010.
[6] Tversky and Kanheman, 1974: 1125.
[7] Tversky and Kanheman, 1974: 1124.
[8] Tversky and Kanheman, 1974: 1126.
[9] Tversky and Kanheman, 1974: 1127.

events co-occur. When the two events are strongly associated, we are more likely to judge that the events occur together frequently. When strong associations are thought of as having occurred together frequently, this might lead us overestimate the correlation due to easier association.[10]

Kanheman and Tversky emphasize that the point of their research is to "understand the cognitive processes that produce both valid and invalid judgements."[11] In work on clinical judgment, Kanheman and Tversky found that at time people are guided by the normatively appropriate rules.[12] The appropriate experiments here are 'within-subject designs' in contrast to 'between-subject designs.' The within-subjects design addresses the question of how the conflict between the heuristic and the rule is resolved and a between-subjects design tests "the hypothesis that subjects rely on a given heuristic."[13] The experiments in within-subject designs test clashes between normatively appropriate rules or principles and heuristics that give rise to biases. The within-subject design, in which critical items are presented in immediate succession, provides subjects with information that is not available to subjects in a between-subjects design. As such these experiments illuminate how such conflicts are cognitively resolved as they give the subject a chance to "detect and correct errors" in their own responses to questions.[14] Evidence shows "that sometimes the heuristic prevails, sometimes the rule."[15] Whatever prevails "depends on various factors such as the sophistication of the subjects, the transparency of the problem, or the effectiveness of the extensional cues."[16]

Hume on the psychology and correction of probable reasoning anticipates Tversky and Kanheman's research on at least three counts. First, comparable to the representativeness heuristic, Hume finds resemblance as key to judging the degree or likelihood to which one event gives rise to another in probability judgments, probability he says is "founded on the presumption of a resemblance between objects or events, of which we have had experience" (T 1.3.6.7). Hume understands resemblance as an associative principle along with contiguity, and causation that ties ideas together in the imagination. These three principles act as a "gentle force" associating our ideas so that the mind passes from one idea to another (T 1.1.4.1). Moreover, Hume recognizes that resemblance leads to errors in probable reasoning. He

[10] Tversky and Kanheman, 1974: 1128.
[11] Kanheman and Tversky, 1996: 582.
[12] Kanheman and Tversky, 1996: 587.
[13] Kanheman and Tversky, 1996: 587.
[14] Kanheman and Tversky, 1996: 587.
[15] Kanheman and Tversky, 1996: 587. See also Tversky and Kanheman, 1983.
[16] Kanheman and Tversky, 1996: 587.

provides three cases to illustrate, to do with the communication of motion by impulse specifically the conviction that the motion of one body will follow the impulse of another body, judgments in optics about the sizes of objects, and the effect of resemblance on credulity, or tendency to believe too easily in the testimony of others (T 1.3.9.10-12).

Second, Hume on unphilosophical probabilities can be linked to the biases from availability such as the ease of retrievability and illusory correlation. Hume's second instance of an unphilosophical probability about the great effect of recent events upon us reflects Tversky and Kanheman on the bias due to ease of retrievability of recent events. When it comes to illusory correlation, Hume explains in the case of prejudice how the mind is affected greatly by the frequent experience of the accidental causes and may be led to irrational judgements. The more frequent the experience, the stronger and quicker the association in the mind. The point of providing the rules is to correct the tendency of the mind to be affected by the experience of the accidental causes. The rules serve to "distinguish the accidental circumstances from the efficacious causes" and if we discover that "an effect can be produc'd without the concurrence of any particular circumstance, we conclude that that circumstance makes not a part of the efficacious cause, however frequently conjoin'd with it" (T 1.3.13.11).

Finally, Hume on the correction of probability judgements connects Kanheman and Tversky on the regulation of probability judgments, as illustrated in the within-subject design experiments. In a similar fashion, Hume focuses on the interplay between the general principle (rule or heuristic) of the mind that gives rise to the bias and normative rules of reasoning and the conflict between them. There are general rules that give rise to bias and the reflective rules of reasoning are used to resolve the irregular judgement that result from the bias. Like Kanheman and Tversky, Hume allows that sometimes people align their beliefs with more stable reflections and sometimes they do not. Whether the irrational generalizations prevail or the reflective rules prevail depends on "the disposition and character of the person" (T 1.3.1.12).

3. Space, Time and Passions

Space and time interact with the intensity of the passions. Passions or impressions of reflection are simple impressions and cannot be put into words. Hume identifies passions via their causes and effects: we describe the causal "circumstances" that "attend" the passions (T 2.1.2.1). After the experience of something pleasurable or painful, the mind copies the

impression as an idea in the faculties of memory and imagination (T 1.1.2.1). When the mind recalls the idea, a new reflective impression something like aversion or hope or fear is produced. Hume makes many distinctions between the passions. The present concern is with the distinction between calm and violent passions. This is about the feeling of force and vivacity, i.e., the felt intensity of the passions (T 2.3.6.10). Violent passions are the stronger, more forcefully felt passions and include love and hate, grief and joy, pride and humility. Calm passions are weaker feelings that include benevolence or the senses of morals and beauty. Both sorts of passions motivate the will and hence action but the violent passions tend to exert a greater influence over our behavior given their more forceful intensity. Now force and vivacity admits of degrees, so the distinction is not meant to be precise (T 2.1.1.3). Calm impressions may reach intensely passionate heights and the most violent and strong of impressions may fall away into softer emotions. Yet people often describe passions in terms of their degrees of forcefulness and vivacity and so it is a useful ordering, given the variety and extent of content in the human mind.

Hume is interested in the factors that can make a passion calm or violent (T 2.3.8.13). Some of the factors that enliven or lessen the vivacity of the passions includes space and time (T 2.3.7-8). In fact, any object that is located spatially next to our body or temporally with us at the present time has a "peculiar force and vivacity" and so has a strong "influence on the imagination" (T 2.3.7.1). The reason is that we have the liveliest possible conception of ourselves at every moment: "[o]urself is always intimately present to us" (T 2.1.11.8). This is a "natural instinct" (T 2.1.4.3). The lively and ever-present conceptions of our own self is transferred to whatever is closely related to ourselves. So, anything that is close to us in space and time will be conceived in a vivid way. On the other hand, objects distant to us in space and time won't be as conceived of as vividly as to that which is close to us. Hume accounts for why there is a loss of liveliness that is in proportion to distance in three ways. He explains (i) why the conception and resulting passion toward an object decreases with distance in space and time, (ii), why there is a greater decrease with distance in time than with space, and (iii) why there is a greater decrease with distance in past time than with future time.

Hume first explains that the distance in space and time that is associated with a reduction in vivacity is simply due to the number of mental steps needed to move from the present to the remote (T 2.3.7.2-3). Since the imagination is always concerned with what is immediately present in space and time no matter how much we think about objects that are remote or in the past, our passions and sensations push us back to reflect on the present. If I think of an object

in a distant location say a beach that is far away from me, I think in some slight way of the general layout between my present location and the beach. These two points are now joined. If I think of an object like a beach which is distant from myself, then I must also think of some object that is located between myself and the beach. But to do so, I must reflect back upon myself. The constant return of the thought to the self is a hinderance toward the intended object of thought, and as a consequence the intensity is weakened. This effect is proportional to the distance: the farther away the object from ourselves, the greater the effect of the interruptions. Conversely the fewer the steps the easier the train of thought is. Hence the nearer the object, the more intense its conception in the imagination (T 2.3.7.3). It follows then that our will and passions are influenced much more strongly by close rather than by distant objects in space-time (T 2.3.7.3).

While the general effect is the same for the remoteness of space and time, Hume notes secondly that distance in time actually has a greater effect on our will and the passions, that is, a greater reduction of vivacity, than something distant in space. The effect on our will or passions of something very far away is greater than that of something relatively near in time. The further away something is in the past the greater the effect of lessening vivacity in us. Twenty years is not a long time ago in the course of history, but that thinking of that distance in my life at my present moment diminishes the intensity of our conceptions much more than being halfway around the world. This has to do with differences in the properties of space and time. Our sensory experience makes it easier to hold an array of spatial points in mind than an array of temporal points (T 2.3.7.4-5). The parts of space exist together as a union, while the parts of time are successive and do not co-exist. We may survey a vast space, but only a single moment of time, at once. Because the union of the parts of space appears to the senses, it does so have a greater effect on the imagination and facilitates the imagination's transition from one part of space to another. The fact that the parts of time are singular, "alone," and not present together makes it much more difficult to move from one to another. The greater interruption in the movement from one part to the other means there is a weakening of the force of the ideas and consequently of the influence on the passions.

Third, Hume explains why the past is associated with a greater reduction in vivacity than the future. In other words, we are more concerned with the future than the past. Hume thinks that future events have more influence on the will, since the will is responsible for our future actions but can do nothing about the past. Further it is easier for the mind to go with the flow of time with the present to the future than to go against it to the of the present to the past.

(T 2.3.7.6-7). The imagination always begins with the present. So, the conception of a past or future object has as its starting point the present and will move either backward or forward in time. In nature, the movement is always from present to future, a forward movement. So, if our thought moves from present to past, its movement is contrary to "the natural course of the succession" (T 2.3.7.8). The movement forward in time, on the other hand, follows the natural course of things and allows for an "*easy* progression of ideas" that favors the imagination (T 2.3.7.8). This effects the imagination and so the thought of the future has a greater influence on the will and the intensity of the passions than what happened in the past.

Hume mentions three other similar but reversed phenomena to do with how space and time influences our feelings of esteem and admiration (T 2.2.5.1). First, a great distance in space and time increases our feelings of esteem and admiration. The mind is pleased and satisfied when it considers vastness or greatness, "either in spatial extension or in quantity of time" (T 2.3.8.2). We naturally transfer this pleasure to the admiration of the distant object. Second, distance in time has a greater effect on our feelings of esteem than distance in space (T 2.3.8.3). This is because we are challenged and invigorated by the greater difficulty of mentally traversing the distance in time (T 2.3.8.4). Because space appears to the imagination as unified and time as "always broken and divided," the transition in the imagination from one part of time to another is more difficult than the transition from one space to another (T 2.3.8.10). When the separation of an object from the present is very great the mind is elevated by the distance. The elevated disposition of the mind causes the distance has a lively effect upon the imagination and hence temporally distant objects are held in greater esteem. A similar explanation is given to the third case: why the past has a greater effect on feelings of admiration than the future. This is because we are challenged and invigorated by the difficulty of going against the flow of time (T 2.3.8.11). This elevated state of the mind has a great effect on the imagination that explains why we tend to esteem our ancestors more than our future descendants.

The impact of space and time on our passions has implications for Hume on morals and politics. Consider Hume's first point to do with our preference to what is close and present to us rather than what is remote in space and time. This preference may lead to irrational moral judgements, as well as even lead us to act against our own best interests in society.

Morals and politics

Space and time impact the operation of sympathy. Sympathy is the "propensity" of human nature "to sympathize with others, and to receive by communication their inclinations and sentiments, however different from, or even contrary to our own" (T 2.1.11.1). There is a tendency for the feelings to be livelier the closer the person is to us. Hume states that we "sympathize more with persons contiguous to us, than with persons remote from us: With our acquaintance, than with strangers: With our countrymen, than with foreigners" (T 3.3.1.14). The emotional states of those who are located distant from us in space and time may have less effect on us than the feelings of those present and nearby. Hume notes that the "sentiments of others have little influence, when far remov'd from us, and require the relation of contiguity, to make them communicate themselves entirely" (T 2.1.11.6). This contributes to a lessening degree of sympathy felt (T 2.1.11.16).

Hume is aware that this might be a problem for his own moral theory since it is based in the workings of sympathy (T 3.3.1.14). Essentially for Hume "sympathy is the chief source of moral distinctions" (T 3.3.6 1). Since sympathy is "very variable", this must mean surely that there is a variation in our feelings of moral approval and disapproval (T 3.3.1.14). Sympathy might simply be too variable to properly recognize moral virtue and vice in our own immediate circle as well as complete strangers on the other side of the world and in past history alike. We must Hume says, "give the same approbation to the same moral qualities in *China* as in *England*" since both are "equally virtuous, and recommend themselves equally to the esteem of a judicious spectator" (T 3.3.1.14).

To overcome variation in moral judgement, Hume says we "arrive at a more *stable* judgment of things" and "fix on some *steady* and *general* points of view" (T 3.3.1.15). While "all sentiments of blame or praise are variable, according to our situation of nearness or remoteness, with regard to the person blam'd or prais'd," we leave out "these variations" in making "in our general decisions" (T 3.3.1.16). We learn by experience to correct ourselves in our "general judgments" of others by fixing onto a "common point of view" (T 3.3.1.30). When we evaluate a person's character or action we take ourselves out of our own situation and focus on those within that person's sphere of influence, and evaluate the situation by sympathetically considering how those people close to them in space and time are affected by their character traits and actions. I acquire by sympathy the pleasure or pain that I imagine people would feel who are connected to that person in that space and time. This allows that our

natural tendency to care more for the present than the remote is not wholly fixed and may be revised.

Hume on the origin of government begins with two fundamental features of human nature: the tendency of humans to be concerned with their own self-interest, and to prefer what is present and near to what is distant and remote (T 3.2.7.1-2). This might lead to trouble because people may prefer lesser, though immediate, advantages over the greater and more remote advantage of the maintenance and preservation of society (T 3.2.7.3). While it is in our long-term best interest to act in accordance with the rules of justice, we tend to prefer the present over the remote that at times is an error of thinking that can have detrimental consequences for our conduct. Though lawful actions are clearly in our interest, we may get carried away by a "narrowness of soul, which makes [us] prefer the present to the remote" and act in contradiction to our interests (T 3.2.7.6). Humans are easily "seduced" from their "great and important, but distant interests, by the allurement of present" (E 38). Hume thinks this is a "great weakness" that "is incurable in human nature" (E 38; T 3.2.7.4). Since we cannot change our nature we must "endeavour to palliate" what we cannot be cured (E 38). A remedy is sought because this feature of human nature is "very dangerous to society" (T 3.2.7.4).

To correct these limitations in human nature, the practice of government is invented: public officials are given the power to decide and enforce the rules of justice (T 3.2.7.8). We must "institute some persons, under the appellation of magistrates, whose peculiar office it is, to point out the decrees of equity, to punish transgressors, to correct fraud and violence, and to oblige men, however reluctant, to consult their own real and permanent interests" (E 38). The mechanisms of government curb the tendency to short-term thinking because humans are incapable of overcoming this weakness on their own and cannot change their nature. Instead we alter our "circumstances and situation" so that following the rules of justice is in both our short term and long-term interest (T 3.2.7.6). The system of government makes it so that to observe the laws of justice is in "our nearest interest, and their violation our most remote" (T 3.2.7.6). Government administers the "*execution* and *decision* of justice" and secures us "against our own weakness and passion" as well as the weaknesses and passions of other people (T 3.2.7.8). Once the mechanisms of government are set in place, humans may "begin to taste at ease the sweets of society and mutual assistance" (T 3.2.7.8). Furthermore, not only can the government maintain conventions that are in our best interest, it can also guide people to adopt new conventions, resulting in "some common end or purpose" to seek our own advantage together (T 3.2.7.8).

Hume's explanation of morals and politics suggest that the natural tendency to prefer the present and near over the remote in space and time can lead to mistakes in judgement and to actions that go against our own interest. This tendency cannot be eliminated from human nature. However, the tendency may be corrected or restrained if the right conditions are in place as well as guided in different directions.

So far, I have focused on Hume's first claim that our passions are more intensely affected by what is close to us rather than what is remote in space and time. The second and third explanations remains relevant to a variety of fields today. The second observation, that distance in time has a greater effect on the passions in that there is a greater loss of force and vivacity of the idea of a remote object distant in time than there is with distance in space, may be related to temporal discounting in behavioral economics, neuroscience, psychology, environmental policy. The third claim that the remote objects in the distant past are associated with a greater reduction in force and vivacity than the future relates to recent debates on future bias.

Temporal discounting

Hume's observation about the great effect of time can be seen in behavioral economics. In fact, in behavioral economics, the impact of time has long been recognized as a domain in which the passions can have major influence on our decisions usually going back to the work of Scottish economist (and Hume's good friend) Adam Smith. It is only recently that Hume's contributions on the impact of time on our feelings and decisions have begun to be appreciated in the history of economics.[17] There are varied considerations that underlie the interplay of time on our passions depending on the discipline. "Time discounting" in behavioral economics is the tendency of individuals to prefer immediate rewards in the present and to care less about a future consequence, even if the magnitude of the delayed reward is increased.[18] There is also the related term "time preference" to refer, more specifically, to the preference for immediate utility over delayed utility.[19]

[17] See Diaye and Lapidus, 2019 and Lapidus, 2010, 2018.
[18] For example, research in economics by Loewenstein and Thaler (1989) that shows people tend to focus on short term considerations at the expense of potential future impacts.
[19] Shane, Loewenstein, and O'Donoghue, 2002: 352.

A common neuroeconomic task that requires consideration of future outcomes is temporal discounting.[20] In behavioral finance, time discounting pertains to how large a premium a person will place on enjoyment near in time over a more remote enjoyment. When it comes to the practicalities of decision-making, many decisions faced by adults, such as retirement savings, involve weighing future outcomes versus ones' immediate preferences. In such cases research shows that people often prefer immediate gains over larger, delayed gains.[21] Work in neuroscience has found that the limbic reward-related areas in the brain show greater activity when a temporal choice includes an immediate monetary reward than when the options include only delayed monetary rewards.[22]

Temporal discounting is also of fundamental concern to environmental preservation. Some scholars argue that many environmental problems result from a conflict between people's desire for immediate rather than delayed rewards.[23] Some claim that the tendency to discount future outcomes is an evolved psychological trait.[24] In any case, according to some environmental policy scholars, because it is human nature to prefer the present, environmental policies that fail to take these natural dispositions of humans into account are not likely to succeed. Calls for people to value the needs of future generations as much as their own needs may not be realistic. Field studies show that public appeals to consider the future consequences of poor environmental practices are generally ineffective in producing behavior change.[25] Nevertheless, some research shows that specific types of interventions, such as changes in circumstances, can lead people to place more weight on the future in making environmental decisions.[26] This suggests that people's time discounting rates are not fixed.

In fact, there is much psychological research about different ways to reduce time discounting. There are strategies such as primed future focus,[27] mental simulation of future experiences,[28] and interactions with visual representations of one's future self.[29] There are even studies to show that feeling powerful reduces temporal discounting[30] and that the exposure to

[20] Lempert and Phelps, 2014.
[21] Denburg and Hedgcock, 2015.
[22] McClure, Laibson, Loewenstein and Cohen, 2004. See also Sellitto, Ciaramelli and di Pellegrino, 2011.
[23] Vugt, Griskevicius and Schultz, 2014.
[24] Daly and Wilson, 2005; see also Boehm, 2012.
[25] See Vugt, Griskevicius and Schultz, 2014.
[26] Kollmuss and Agyeman, 2002, Goldstein and Cialdini, 2007, and Steg and Vlek, 2009.
[27] Sheffer et al., 2016.
[28] Stein et al., 2016.
[29] Hershfield et al., 2011.
[30] Duan, Wu and Sun, 2017.

nature effects people's temporal discounting rates.[31] The results of the studies reveal that individual discounting rates are systematically lower after people have been exposed to scenes of natural environments as opposed to urban environments. The hypothesis is that the effect is owing to people placing more value on the future after nature exposure. Such research is in line with Hume's insight that the natural tendency of human nature to prefer the present and near over the remote can be altered or redirected.

Future bias

Hume's third explanation is that the past is associated with a greater reduction in vivacity than the future, in other words, that we are more concerned with the future than the past. This he thinks is natural given the forward nature of the will. This is also driven by self-concern, a natural instinct that continually directs our attention to our own interests. Self-concern is the sense of self Hume recognizes that relates to passion and action. Our experiences of past pleasures and pains causes us to take a concern in our future pleasures and pains. The concern for our future self is regulated by sympathy. Sympathy can extend beyond the present moment to anticipate future pains and pleasures so the interests of one's future person can become an actual concern and may influence our current actions (T 2.2.9.13). Sympathy can be also generated by imagining the future state of another person. Hume's example is if I see someone I do not know asleep in a field and about to be trampled by horses, I would immediately rush to their aid, even though they have no present pain. I anticipate their pain in my imagination (T 2.2.9.13). These sorts of observations about human nature, that we may sympathize with our future self and future people, may be useful to environmental policy decisions that aim to implement circumstances that can lead people to place more weight on future consequences when it comes to making decisions that affect the environment. They may even be supplemented by Hume's point that the natural environment is one of the highest sources of pleasure for humans: we admire natural objects like sunshine, soil, fields, mountains, forests, oceans and this happens by sympathy (T 2.2.5.16).

Hume's observation that the future concerns us more than the past is sometimes called today 'future bias.' For instance, we care more about pains and pleasures in our future than the pains and pleasures in our past. Current empirical research shows that most people would prefer

[31] van der Wal, Schade, Krabbendam and van Vugt, 2013.

that a past self had undergone a surgical operation instead of our future self having an operation, even if operation undergone by the past self would have been ten times more painful than the operation the future self would undergo.[32] These recent experiments are based on a famous thought experiment by Derek Parfit in *Reasons and Persons* (1984: 165). In Parfit's example, you are asked to imagine that you are in hospital to have surgery and that you awaken in your hospital bed with no memory of going to sleep. A nurse tells you that either you underwent ten hours of extremely painful surgery without anesthesia yesterday with a drug to cause you to forget the experience, or else you will undergo one hour of extremely painful surgery without anesthesia today with a drug to cause you to forget the experience. Parfit's preference would be to have undergone the longer operation yesterday than to be faced with the shorter and less painful operation today. For Parfit we are biased toward the future in that we prefer to have experienced pain in the past than to experience it in the future and we prefer that our lives contain more total hours of pain, if that meant less pain still to come in the future. Parfit also recognizes another sort of temporal bias toward the near. We prefer a larger pain later to a smaller pain sooner. He writes, "[c]ompared with an hour of pain later today, I might […] prefer ten hours of pain next year" (1984: 166).

There is a lot of disagreement in the secondary literature about the rationality of near and future bias. Many positions are taken on the matter. Some scholars think that it is rational to have a bias to the future.[33] Some think that bias toward the near is rationally impermissible, while bias toward the future is either rational or obligatory.[34] Other scholars reject both near bias and future bias and hold that rationality requires complete temporal neutrality.[35]

How Hume fits into these current debates about the rationality of near and future bias is a topic for another time (certainly, he allows cases of near bias to be irrational as seen in the case of probability and moral judgements). For the present, I note two established points in the recent literature of empirical psychology on future bias that reflect Hume's view. First, there is overwhelming research to demonstrate Hume's observation that most people are biased toward the future.[36] Second, one of the main accepted explanations for this bias is the practical irrelevance of the past resulting from our inability to do anything about past events.[37] This

[32] Latham, Miller, Norton and Tarsney, 2020.
[33] For example, Heathwood, 2008 and Dorsey, 2017.
[34] See Greene, Holcombe, Latham et al., 2021: Introduction for an overview of the relevant secondary literature.
[35] For example, Brink, 2011 and Greene and Sullivan, 2015.
[36] See Caruso, Gilbert and Wilson 2008; Latham, Miller, Norton and Tarsney, 2020, and Greene, Latham, Miller and Norton, 2020.
[37] Latham, Miller, Norton and Tarsney, 2020: 1.

relates Hume's explanation as to why the future has more influence on the will: the will naturally moves with the forward flow of time and cannot causally influence events in the past (T 2.3.7.6-7).

4. Conclusion

Hume on space and time has not been influential. Yet his observations about space and time to show how the probability and the passions work is applicable to quite a few contemporary areas of discussion across disciplines. This range of influence seems suitable given Hume's distinctive approach to the passions. He emphasizes that the causes and effects of the passions vary a lot and depend on many considerations: the individual person, their personality and particular situation. What makes things even more uncertain is that calm passions can easily turn into violent ones and violent passions may quickly calm down. Changeability is an "essential" feature of human nature and it is difficult for the mind to confine itself solely to single passion for too long (T 2.1.4.3). Hume thinks this is all for the better since the variety of the passions "diversifies human life" (T 2.3.8.18). The passions are what make people different from each other and allows us to become different people at different times. The examination of the ways space and time may act as intensifiers of a person's feelings helps us to better explain a wider range of our own and others motivations and actions. This permits more scope for understanding the progression of our own selves, how we think about our past self, our present and future self, as well as the progression of other selves to properly appreciate the individual differences between people.[38]

Bibliography

Boehm, C. (2012). *Moral Origins: The Evolution of Virtue, Altruism, and Shame*. London: Basic Books.

Brink, D. O. (2011). "Prospects for Temporal Neutrality." In C. Callender (Editor). T*he Oxford Handbook of Philosophy of Time.* Oxford: Oxford University Press.

Caruso, E., Gilbert, D. T., and Wilson, T. D. (2008). "A Wrinkle in Time: Asymmetric Valuation of Past and Future Events." *Psychological Science* 19 (8):796-801.

[38] I thank the audience at the 20th meeting of *Grupo Hume* and two anonymous referees for helpful comments on earlier drafts. Special thanks as ever to Livia Guimarães.

Daly M. and Wilson M. (2005). "Carpe Diem: Adaptation and Devaluing the Future." *The Quarterly Review of Biology* 80 (1): 55-60.

Dargie E, Blair K. L, Goldfinger C. and Pukall C. F. (2015). "Go Long! Predictors of Positive Relationship Outcomes in Long-Distance Dating Relationships." *Journal of Sex and Marital Therapy* 41(2):181-202.

Denburg, N and Hedgcock, W. (2015). "Age-Associated Executive Dysfunction, the Prefrontal Cortex, and Complex Decision Making." In T. M. Hess, J. Strough and C. E. Löckenhoff. (Editors). *Aging and Decision Making: Empirical and Applied Perspectives*. Elsevier Academic Press: 79-101.

Diaye, M. and Lapidus, A. (2019). "Decision and Time from a Humean Point of View." *The European Journal of the History of Economic Thought*. 26 (3): 622–652. https://doi.org/10.1080/09672567.2019.1623280

Dorsey, D. (2017). "Future-Bias: A (Qualified) Defense." *Pacific Philosophical Quarterly* 98: 351-373.

Duan, J., Wu, S. J., and Sun, L. (2017). "Do the Powerful Discount the Future Less? The Effects of Power on Temporal Discounting." *Frontiers in Psychology*. 8: 1007. doi: 10.3389/fpsyg.2017.01007.

Gardner, G. T. and Stern, P. C. (2002). *Environmental Problems and Human Behavior*. Second Edition, Pearson Custom Publishing, Boston.

Goldstein, N. J., and Cialdini, R. B. (2007). "The Spyglass Self: A Model of Vicarious Self-Perception." *Journal of Personality and Social Psychology. 92* (3): 402–417.

Greene, P. and Sullivan, M. (2015). "Against Time Bias." *Ethics.* 125, No. 4: 947-970.

–Greene, Latham, A.J., Miller, K. and Norton, J. (2020). "Hedonic and Non-Hedonic Bias toward the Future." *Australasian Journal of Philosophy*. 1-16.

–Greene, Holcombe, A., Latham, A. J. et al. (2021). "The Rationality of Near Bias toward both Future and Past Event." *Review of Philosophy and Psychology.* doi.org/10.1007/s13164-020-00518-1.

Heathwood, C. (2008). "Fitting Attitudes and Welfare." *Oxford Studies in Metaethics.* 3:47-73.

Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). "Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self." *Journal of Marketing Research*. 48: S23–S37.

Hume, D. (1739-40). *A Treatise of Human Nature: Being an Attempt to Introduce the Experimental Method of Reasoning into Moral Subjects.* Edited by D. F. Norton and M. J. Norton. Oxford: Oxford University Press, 2000.

–(1748). *An Enquiry Concerning Human Understanding*. Edited by T. L. Beauchamp. Oxford: Oxford University Press, 1999.

–(1777). *Essays Moral, Political, Literary.* Edited by E. F. Miller. Revised edition, Indianapolis: Liberty Fund 1987.

Kahneman, D., and Tversky, A. (1996). "On the Reality of Cognitive Illusions." *Psychological Review. 103* (3): 582–591.

–Kahneman, Slovic, P and Tversky, A (1982) (Editors). *Judgment Under Uncertainty: Heuristics and Biases*. New York and Cambridge: Cambridge University Press.

Kelmer, G., Rhoades, G. K., Stanley, S. M., and Markman, H. J. (2013). "Relationship Quality, Commitment, and Stability in Long-Distance Relationships." *Family Process.* 52: 257-270.

Kollmuss, A. and Agyeman, J. (2002). "Mind the Gap: Why Do People Act Environmentally and what are the barriers to Pro-Environmental Behavior?" *Environmental Education Research.* 8 (3): 239-260.

Lapidus, A. (2010). "The Valuation of Decision and Individual Welfare. A Humean Approach." *European Journal of the History of Economic Thought.* 17 (1): 1–28. doi:10.1080/09672560903204502.

–(2018). "David Hume and Rationality in Decision-Making: A Case Study on the Economic Reading of a Philosopher." In R. Ege and H. Igersheim (eds.) *The Individual and the Other in Economic Thought*. London: Routledge, pp. 270–290.

Latham, A. J., Miller, K, Norton, J, and Tarsney, C. (2020). "Future Bias in Action: Does the Past Matter More When You Can Affect It." *Synthese*. 1:23.

Lempert K.M. and Phelps, E.A. (2014). "Neuroeconomics of Emotion and Decision Making." In P. Glimcher and E. Fehr (Editors). *Neuroeconomics: Decision Making and the Brain*. Second Edition, New York, NY, USA, pp. 219-236.

Loewenstein, George, and Thaler, R. (1989). "Anomalies: Intertemporal Choice." *Journal of Economic Perspectives*. 3 (4): 181-193.

McClure, S., Laibson, D., Loewenstein, J. and Cohen, D. (2004). "Separate Neural Systems Value Immediate and Delayed Monetary Rewards." *Science.* 15: 503-507.

Morris, W. E. (2011). "Hume's Epistemological Legacy." In E. Radcliffe (Editor). *A Companion to Hume*. Wiley Blackwell.

Parfit, D. (1984). *Reasons and Persons.* Oxford: Oxford University Press.

Pascal, B. (1660) *Pensées*. Edited by P. Sellier, Paris: Bords, 1991.

Rothstein, H. (1986). "The Effects of Time Pressure on Judgment in Multiple Cue Probability Learning." *Organizational Behavior and Human Decision Processes. 37*(1): 83-92. https://doi.org/10.1016/0749-5978(86)90045-2

Sellitto, M., Ciaramelli, E. and di Pellegrino, G., (2011). "The Neurobiology of Intertemporal Choice: Insight from Imaging and Lesion Studies." *Reviews in the Neurosciences*. 22 (5): 565-574.

Shane, F., Loewenstein, G. and O'Donoghue, T. (2002) "Time Discounting and Time Preference: A Critical Review." *Journal of Economic Literature*. 40 (2): 351-401.

Sheffer C. E, Mackillop J., Fernandez A, Christensen D, Bickel W. K, Johnson M. W, Panissidi L, Pittman J, Franck C. T, Williams J, and Mathew M. (2016). "Initial Examination of Priming Tasks to Decrease Delay Discounting." *Behavioural Processes.* 128: 144-52.

Steg, L. and Vlek, C. (2009). "Encouraging Pro-Environmental Behaviour: An Integrative Review and Research Agenda." *Journal of Environmental Psychology*. Volume 29, 3: 309-317.

Stein, J. S., Wilson, A. G., Koffarnus, M. N. et al. (2016). "Unstuck in Time: Episodic Future Thinking Reduces Delay Discounting and Cigarette Smoking." *Psychopharmacology.* 233: 3771–3778.

Straube B. and Chatterjee A. (2010). "Space and Time in Perceptual Causality." *Frontiers in Human Neuroscienc*e. 4:28. doi: 10.3389/fnhum.2010.00028. PMID: 20463866; PMCID: PMC2868299.

Thompson, J., Wiener, M., Michaelis, K. (2015). "Distinct Spatial and Temporal Discounting During Decision Making in Humans." *Journal of Vision.* 15(12): 411. doi: https://doi.org/10.1167/15.12.411.

Traiger, S. (1999). "Hume." In F. C. Keil and R. A. Wilson, R. A. *MIT Encyclopedia of Cognitive Science*. Cambridge: MIT Press.

Tversky, A. and Kahneman, D. (1974). "Judgment under Uncertainty: Heuristics and Biases." *Science.* 27: 1124-1131.

–Tversky and Kahneman, D. (1983). "Extensional versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment." *Psychological Review. 90* (4): 293–315.

van der Wal, A. J., Schade, H. M, Krabbendam L. and van Vugt M. (2013). "Do Natural Landscapes Reduce Future Discounting in Humans?" *Proceedings of the Royal Society B: Biological Sciences,* Royal Society of London, 280: 1-6.

Vugt, M., Griskevicius, V. and Schultz, P., (2014). “Naturally Green: Harnessing Stone Age Psychological Biases to Foster Environmental Behavior.” *Social Issues and Policy Review*. Vol. 8: 1-32.

Woods A. J., Hamilton R. H., Kranjec A., Kranjec A., Minhaus P., Bikson M., Yu J. and Chatterjee A. (2014). “Space, Time, and Causality in the Human Brain.” *Neuroimage*. 92: 285-297. doi:10.1016/j.neuroimage.2014.02.015.