

VALUES AND ECONOMIC SCIENCE

John Hart

Department of Economics, University of South Africa, hartjs@unisa.ac.za

For presentation at the WINIR 2017 symposium on Ludwig Lachman
Johannesburg 11-13 April 2017, Preliminary draft: please do not quote

For over a century most economists have followed Robbins' (1935) view that 'the normative had no place in, and should be prohibited from, economic science' so that they consider that 'economics is a positive, value-free science' (Boumans and Davis 2010, p. 169). While the distinction between what is and what ought to be can be traced to Hume, it was mainly under the influence of a philosophy of science called logical positivism (at its height in the 1920s and 1930s) that the distinction between positive and normative statements became a dichotomy. The demise of positivism around the 1960s was marked by the 'return' in a new form of a philosophy of science called naturalism. While this was critical of positivism, its precepts lent support to a continuation of the view that economics is a positive science. Rather than support the positivists' distinction, naturalists maintained that any values that were relevant to science could be reduced to, or restated in terms of, purely descriptive statements.

However, around the time that Robbins proclaimed the objectivity of economics, Knight (1935) was developing his explicitly anti-positivist view that economic science was, and should not, be considered as value-free. For many different reasons — the astounding successes of the natural sciences in the last century, the rise of socialism, the Cold War etc. -- Robbins' view triumphed while Knight's went down like a lead balloon so much so that, apart from his distinction between uncertainty and risk, his work is excluded from the mainstream undergraduate curriculum and remains virtually unknown to many today.

In this paper I first describe the positivist and then the naturalist account of the place of values in economic science. In the third section I explore Knight's reasons for his 'inconvenient' claim. Finally I turn to Putnam's (2004, 2010) criticism of both the positivist and naturalist philosophies of science. I further argue that Putnam presents the wider philosophical framework, not explicitly discussed by Knight, needed to help counter the continued dominance of the positivism and naturalism in economics.

1. Positivism: no values in economic science

According to the logical positivists' famous verifiability principle of meaning, the meaning of a proposition consists in the method of its verification. Metaphysical statements, e.g. concerning values and ethics, which could not be verified, were regarded as 'nonsense' or meaningless. In terms of the emotivism of logical positivists, value judgments were no more meaningful than expressions of purely personal emotions (of joy, disgust etc). For them, only synthetic (observable) propositions were verifiable. Apart from these only analytic (factually empty, purely logical) statements were considered cognitively meaningful. (As is often pointed out however their verifiability principle itself could not be verified since it contained terms such as 'cognitively meaningful' and 'nonsense'.)

The positivist notion of a fact becomes less clear

The logical positivists' confidence depended on their believing they 'knew exactly what a fact was' (Putnam 2002, p. 21). He points out that they adopted Hume's view that a fact was a sense impression, having properties which are picturable. For the early positivists each individual meaningful statement was required to have its own 'method of verification' (Putnam 2012, p. 114). However the new revolutionary physics of the early twentieth century introduced theoretical terms, often as the assumptions of a theory, which referred to unobservables such as magnetic fields, bacteria and atoms (2002, p. 29). Consequently Carnap (1938) dropped the requirement that a fact must correspond to an individual observation statement. Instead, as long as the 'system' (science reconstructed in a formalized language) as a whole enables more successful predictions of phenomena, its predicates were considered 'cognitively meaningful' (2012, p. 114).

Apart from facts no longer being held to be individually verifiable, Carnap's intervention meant that the 'system' (of scientific knowledge) as a whole gained this factual content only through its better predictions. But to predict means to deduce observation sentences from a theory (2002, p. 29). And deduction involves both analytic (factually empty) and synthetic (factual) statements. Therefore defining the factual (system) now depended, following Carnap, crucially on the analytic-synthetic distinction (p. 29).

Quine (1953) is generally accepted to have demolished the (metaphysically inflated – it included mathematics) positivist notion of the 'analytic' (p. 29). Quine showed that the system of scientific knowledge depends on both conventions and on empirical descriptions without there being a single scientific sentence that is true simply by convention or any single scientific sentence that is true simply in terms of experience (Putnam 2012, p. 114). Quine's insight was that there are large ranges of

statements that are neither statements of analytic truths nor of observable facts (2002, p. 13). In a famous metaphor, he argued that the lore of our fathers (inherited knowledge) is a pale grey fabric of sentences black with fact and white with convention but with no quite black or white threads in it (p. 12). In other words, there is no sense in distinguishing between analytic and synthetic statements. Since the positivist notion of the factual depended on the analytic/synthetic dichotomy, Putnam argues that Quine's intervention not only demolished the positivist notion of the analytic but also the positivist basis of a clear notion of fact. For Putnam this leads to the 'demolition' of the basis for the fact/value dichotomy.

It might seem that these problems would have undermined economists' confidence that economic science deals exclusively with positive, objective statements which can be clearly demarcated from normative, subjective statements. This may have indeed been the case were it not for the fact that the post-Quinean naturalist philosophy of science, which came to replace positivism, presented a powerful new account in which science was presented as an objective enterprise free of values, or at least free of all non-natural values which in terms of naturalism don't matter.

2. Naturalism: no 'non-natural' values in economic science

Concerning naturalism, we can distinguish between its ontological and epistemological aspects. The easiest way to understand naturalism is to consider its ontological aspect. This involves the metaphysical assumption 'accepted by the great majority of contemporary philosophers' that the whole of 'reality is exhausted by nature, containing nothing supernatural' (Papineau 2015, p. 1). There is nothing but natural elements of the kind studied by the natural sciences. Most philosophers nowadays view 'nature' as referring only to the subject matter of the physical sciences (Papineau 2015). Naturalists with strong philosophical commitments about nature, accept a thesis concerning the 'causal completeness' of the physical realm ('every physical effect is fixed by a fully physical prior history'). This thesis implies the physicalist doctrine that 'anything that makes a difference to the physical realm must itself be physical'. Some adopt the further philosophical commitment of materialism, 'one of the few orthodoxies of American academic philosophy' (Mautner 1999, p. 342). This affirms that 'matter' is all that really exists and denies existence to minds and mental states (unless identified with brain states) as well as to abstract entities or universals (Quinton 1977, p. 374). (Via the concept of supervenience, they can remain committed to materialism and yet accept that the mental need not necessarily be reduced to the physical. This allows them to utilize the 'efficacy' of non-physical causes in explaining physical behaviour (Papineau 2015, pp. 4-7).)

There is no need for naturalists to maintain the above metaphysical commitments. Instead they could confine their commitments to methodological or epistemological ones. For example, concerning epistemology, Kitcher's (1992) moderate naturalism rejects two key tenets of analytical philosophy as first set out by Gottlob Frege (1848-1925). The first is that there is 'a sharp distinction' between philosophy and empirical science. The second is that philosophy is an a priori discipline able to generate epistemological principles independently of any experience. According to naturalists, Kuhn's study of the history of science supported their rejection of these two tenets since it highlighted the gap between a priori methodological norms and actual scientific practice.

This 'methodological' naturalism -- in somewhat positivist vein -- rejects the long-standing claim of philosophy to be a 'first order' discipline 'laying the necessary grounds for the understanding of reality and the justification of knowledge claims'. Instead naturalism is perhaps best viewed as 'an approach to philosophical problems that interprets them as tractable through the methods of the empirical sciences or at least, without a distinctively a priori project of theorizing' (Jacobs 2017, p. 1).

Naturalist values and non-naturalist values

In terms of the above framework of thinking, there is no room for mental states such as 'values' which cannot be reduced to or re-stated in non-ethical, natural terms. Evaluative moral sentences are genuine propositions capable of being verified as true or false in terms of ordinary empirical facts (rather than those of a supernatural character). 'The criterion of right action is some empirical feature of the natural world such as the happiness of sentient beings' (Quinton 1977, p. 411). Such a viewpoint fits in with utilitarianism. In terms of ethical naturalism the only way of finding out what conduct is right is by empirical inquiry (Mautner 1999, p. 373).¹ For some naturalists, apart from there being no supernatural or spiritual entities in the world there is no 'purpose' in nature (or human beings) (Kurtz, 1998).

3. Knight on economics as a value-laden science

In sharp contrast to naturalism, Knight (1935) explained the essential role of non-naturalist values in economics. Knight distinguishes three non-positivist (and I would argue non-naturalist) categories of interpretation of human-social subject matter (Hart 2014). Here human action is interpreted as deliberative rather than instinctive, as consciously purposive, goal-seeking or problem-solving, while concerning causality 'use is made of interpretive principles of a non-empirical, metaphysical, more or less dynamic, character' (Knight 1943, pp. 137-8). We turn to look at the first of these three categories since, although it

does not deal explicitly with values, it needs to be described in order to understand Knight's conception of values and their role in economics.

Knight explains that economics falls into the first of his non-positivist categories. Economic theory contains two topics. First it deals with a type of individual behaviour: that of *homo economicus*. Here 'man' is viewed as an instrumental problem-solver concerned with economic rationality or 'problem-solving at the greatest level of simplicity'. Here the ends of the individual are taken as given and the problem is limited merely to that of procedure: an efficient allocation of means. For Knight, economic 'science' cannot explain or describe how individuals actually behave in space and time, only that they try 'more or less successfully to achieve maximum efficiency' in using means to achieve given ends. The economic quality of behaving is purely subjective [and intuitive]; no outside observer has any way of knowing the degree in which activity is "economical" – that is, to what extent the individual's efforts to economize is realized in fact (Knight 1934, pp. 278-281).

Second, economic theory deals with a type of social organisation. It is assumed that *homo economicus* lives in a society characterized by a perfect market. Here, Knight explains, we abstract from the individual's relations with other human beings since 'the ideal market dealings of theory are not social relations'. Instead they are completely impersonal.

The social organization dealt with in economic theory is best pictured as a number of Crusoes interacting through markets exclusively. To the economic individual, exchange is a detail in production, a mode of using private resources to realize private ends (1934, p. 282).

In a perfect market there is no competition, rivalry, emulation, higgling or bargaining (1934, p. 282).² 'The Economic man neither competes nor higgles – nor does he cooperate, psychologically speaking; he treats other human beings as if they were slot machines' (1939, p. 80).

Knight refers to the 'unreality . . . in its social aspect' of *homo economicus* viewed as an instrumental problem-solver whose ends are given and who does not cooperate or interact in any social sense with other individuals. This won't do for Knight since for him economics is chiefly a social science, rather than a science of individual behaviour. 'The practical objective of economics . . . is that of improving the social organization and increasing its efficiency' (1933, p. 11). And, as Knight (1923, pp. 74-5) had earlier explained, 'efficiency is a value category and social efficiency an ethical one'.

[It] deals with interindividual relations, with co-operation or organization between individuals for increasing efficiency in the use of means to realize their ends (1943, p. 146). [It concerns] ‘the principles of *organization* of economic activity through the free exchange of services (or “goods” as the embodiment of future services) between individuals, giving rise to markets, and to the theory of the perfect market’ (1942, p. 289).

In order to include ‘society in the proper human sense’ Knight (1934, p. 282) argues that we need to take into account the other two categories of interpretation of human-social subject matter. The two categories, ‘man’ as a valuation problem-solver and ‘man’ as a social being, are intimately related. ‘Man’ as a valuation problem-solver is simultaneously involved both in an individual effort at evaluating the ends and in a social effort to realize norms or values. Knight argues that by taking individual desires as given and indisputable (*de gustibus non est disputandum*) economic theory cannot solve value problems and thereby social problems.³

Concerning ‘man’ as a valuation problem-solver, Knight says that ‘the scientific mind can rest only in one of two extreme positions, that there are absolute values, or that every individual desire is an absolute and one as “good” as another. But neither of these is true’ (1922, pp. 39-40). According to Knight, economics wrongly takes the second extreme position of treating every individual desire as an absolute value: ‘Of the various sorts of data dealt with in economics no group is more fundamental or more universally and unquestioningly recognized as such than human wants’ (p. 20). Knight questions this ‘starting-point’ of economics i.e. he questions the view that wants can properly be regarded as data. Economics, he says, ‘has always treated [individual] desires or motives as facts . . . as causes of activity in a scientific sense’ (p. 21).

However, Knight argues that wants cannot properly be regarded as data. This is because individual wants ‘are very largely built up in and moulded by the social traditions, institutions, and processes of the culture in which the individual grows up’ (1939, pp. 84-5). They are ‘partly created by the unconscious social processes of society and partly decided upon or chosen through intellectual activity, which is always fundamentally social in character’ (1941, p. 130). ‘In large part the individual wants themselves are *created* by social intercourse’ (1933, p. 11). ‘The social order largely forms as well as gratifies the wants of its members’ (1923, p. 51).

The issue of ‘man’ as a valuation problem-solver therefore needs to be treated together with that of ‘man’ as a social being, Knight argues that ‘he’ is involved in a ‘societalist’ society rather than a society of

Robinson Crusoes where individuals act independently of each other. Social phenomena cannot be completely explained as the result of individuals acting independently. Instead in a ‘societalist’ society social phenomena are expressions of ‘motivated social choice’. For Knight (1934, p. 343), economics as a social science ‘must take as its subject matter a society that is capable of making and actually makes choices’.

Knight explains that ‘human social problems arise out of conflicts of interest between individual members’ (1941, p. 125). Here he importantly explains that ‘values arise out of conflicts between interests. . . . A value is the solution of such a [social] problem’ (1942, p. 280). The mistake economics makes in taking the extreme position that every individual desire is an absolute is that the process of ‘valuation is inherently a social activity’ (1942, p. 280). Twenty years before Knight had argued that ‘the “creation of value” is distinctly more than the satisfaction of desire’ (1922, p. 21). Such values are objective and ‘belong to a value-cosmos which has the same kind of validity, or reality, for our thinking as the external physical world’ (1941, p. 133).

It is in light of the above that Knight proceeds to explain the necessity of the field of ethics for any social science relevant to social problems (1934, p. 343; 1939, p. 153). ‘Economics cannot be economic without being both political and ethical’ (1933a, p. xviii). For Knight, social science must be relevant to social action which is essentially ‘group self-determination’ and consists of making (and changing) the law (1941, p. 132-4).⁴ This social action is a process of rational discussion that attempts to solve ethical problems by establishing agreement upon ethical ideals or values – the social problem is one of values, not one of fact (p. 133).

4. Putnam on the entanglement of facts and values in economic science

Putnam’s criticism of (strict) metaphysical naturalism

Perhaps the leading critic of naturalism is Putnam (De Caro and Macarthur, 2004, 2010). He argues that, contrary to (metaphysical) naturalism, reality is not exhausted by the natural world. Likewise he takes issue with Quine’s view that philosophy is not ‘continuous with science’ – i.e. in opposition to Quine, Putnam argues that philosophy is not reducible to psychology, psychology is not reducible to neurophysiology, and neurophysiology is not reducible to physics. It is not science, instead of philosophy, which now legitimizes all other fields. (Here Putnam is in accord with Knight (1934, p. 327) who had years earlier protested against ‘the virtual deification of science in modern thought’.)

As against naturalism, Putnam admits the existence of entities other than those accepted by the ‘first order’ world of science (De Caro 2017). These are entities which are ‘part of a common sense view of the world’ such as moral features, free will, normativity, consciousness, and the problem-solving, intentional properties of Knight’s non-positivist categories. ‘Such entities are not explainable by science but are not supernatural either’ (ibid.). From the perspective of naturalism, such entities are either ‘reducible to the features accepted by natural science . . . or else they are just fictions’ (ibid.). Putnam points out that it was due to Galileo’s metaphysical presupposition that from a geometrical point of view the world is as simple as possible that he accepted the Copernician system (ibid.). It was only later that Galileo ‘discovered’ positive evidence (the occurrence of tides, which later turned out to be a wrong argument). For Putnam there is no universal scientific method. Science is extremely complicated. He supports the ideal of a ‘reflective equilibrium’ between philosophy and science (ibid.).

Putnam’s criticism of the fact-value dichotomy

Despite widespread acceptance of Quine’s demolition of the analytic/synthetic dichotomy, and despite the fact that hardly any philosophers subscribe to Carnap’s verifiability criterion of meaning, Putnam (2002, p. 25) claims that many current analytic philosophers ‘continue to think that meaningful language must be understood on the model of the language of *physics*’. For them, ordinary language psychological terms must refer to ‘brain states’ (either neurological – like Carnap -- or computational) (p. 26). However, to force all the descriptive terms that we employ in our everyday discourse into being classified either as observation terms or as theoretical terms, is to force them into a Procrustean bed (p. 26). That is, ‘so much of our descriptive language’ ‘cannot be classified into one side or the other of the dichotomy’. This is because ‘factual description and valuation can and must be *entangled*’ (p. 27).

To make clear his argument that the fact-value dichotomy is a false one, Putnam turns to the issue of ‘thick’ and ‘thin’ ethical concepts (p. 34). Since the entanglement of fact and value is more difficult to see in ‘thin’ ethical concepts such as ‘good’, ‘ought’, ‘right’, etc., Putnam uses examples of ‘thick’ ethical concepts such as ‘cruel’, ‘crime’, ‘brave’. (In economics some examples of thick ethical concepts would be welfare, utility, productive and unproductive labour, economic progress, equilibrium, efficiency.) Concerning the thick ethical concept of ‘cruel’, someone said to be a ‘cruel’ teacher is both not a good teacher as well as not a good man. Yet ‘cruel’ can also be used purely descriptively. For example, according to a historian a certain king was exceptionally cruel (p. 34).

Some argue that thick ethical concepts are factorable into a descriptive and attitudinal component (p. 36). They claim we do not need to use the word 'cruel' to describe a cruel action. We can say 'he was caused to suffer deeply' (descriptive component) and an evaluative implication that the 'action is wrong' (p. 38). But this 'two-components' approach founders on the impossibility of saying what the 'descriptive meaning' of, say, 'cruel' is without using the word 'cruel' or a synonym (p. 38). For example, 'cruel' does not simply mean 'causing deep suffering'. 'Suffering' does not just mean 'pain' and 'deep' does not just mean 'a lot of'. A surgeon who causes pain is not normally cruel while behavior that does not cause pain may be extremely cruel (p. 38).

What is characteristic of thick ethical concepts is that to use them with any discrimination one has to be able to identify imaginatively with an evaluative point of view (p. 39). That is why someone who thought that 'brave' simply meant 'not afraid to risk life and limb' (descriptive use) would not be able to understand the distinction between rashness (or foolhardiness) and genuine bravery. The descriptive use of 'brave' therefore depends upon evaluation of whether the act was rash or not (p. 40).

According to Putnam, the classical pragmatists such as Pierce, James and Dewey held that value permeates all of experience (2002, p. 135). Putnam argues that this implies that they accepted that value judgments underscored the practice of science. For them, not only does knowledge of facts and knowledge of theories presuppose one other: knowledge of facts and knowledge of values also presuppose one other (p. 136). However, for some reason, modern-day philosophers of science such as Quine have evaded admitting this.

Conclusion

According to Backhouse (2009), Marshall's purpose in separating 'economics' from 'political economy' was that he thought that by economists adopting a more neutral position detached from every day politics they would be taken more seriously and be more effective than the Oxford 'socialist' economists. These advocated direct involvement in day-to-day politics. As mentioned earlier, a number of powerful factors over the years have helped support Marshall's view: the dismissal by Marxists of 'bourgeois economics' as no more than an ideological justification of capitalism, the astounding successes of the natural sciences in the last century, the rise of socialism, the Cold War, the Cold War era decision to award a 'Nobel' prize in economics, the availability of statistics and the development of computing power.

Famous attempts, such as Myrdal (1953, 1958), to argue that values played an important role in economics were all too easily dismissed as ‘Marxists’ or, like Myrdal, as overstating their case. So powerful were these forces that one of the most orthodox and well-known economists, Knight, was ignored, even by his many Nobel prize-winning students. Likewise Hutchison’s (1964) argument, that simply via attempts to uphold the positive-normative distinction value judgements could not be excluded from economics, was dismissed. More recently, even the arguments of the Nobel prize-winning economist, Sen (1967, 1985, 1987), that there is room for rational argument about value claims, have largely fallen on deaf ears.

However, the world changes, and it may be that the disappearance of some factors (such as that of the Cold War) may lead more economists to question the view that a value-laden economic science is both bad and a contradiction in terms. Indeed, some evidence that this may already be occurring is to be found in that orthodox theorists such as Hausman and McPherson (2006, p. 3) accept not only Putnam’s argument about the ‘entanglement’ of facts and values but argue, more significantly, that this entanglement ‘helps one to do economics and policy evaluation better’.

References

- Backhouse, R. (2009), ‘Robbins and Welfare Economics: A Reappraisal’, *Journal of the History of Economic Thought*, 31, 474-484.
- Boumans, M. and Davis, J. (2010), *Economic Methodology: Understanding Economics as a Science*, Basingstoke, UK: Palgrave Macmillan.
- Carnap, R. (1938), ‘The foundations of logic and mathematics’ in *International Encyclopedia of Unified Science, vol 1, part 1*. Chicago: Chicago University Press, pp. 139-214.
- De Caro, M. (2017), ‘Putnam’s liberal naturalism’, in M. Frauchige (ed.) *Themes from Putnam*. Berlin: Ontos Verlag. (2017 anticipated publication date).
- De Caro, M. and Macarthur, D (eds) (2004), *Naturalism in Question*, Cambridge: Harvard University Press.
- _____ (2010), *Naturalism and Normativity*, New York: Columbia University Press.
- Emmett, R. (2006), ‘De gustibus est disputandum: Frank H. Knight’s reply to George Stigler and Gary Becker’s “De gustibus non est disputandum” with an introductory essay’, *Journal of Economic Methodology*, 13, 97-111.
- _____ (2007), ‘Knight’s challenge (to Hayek): spontaneous order is not enough for governing a liberal society’, in P. McNamara, and L. Hunt, (eds.) *Liberalism, Conservatism and Hayek’s Idea of Spontaneous Order*, New York: Palgrave Macmillan, pp. 67-86.
- Hart, J. S. (2014), ‘Frank Knight’s “categories” and the definition of economics’. *Journal of Economic Methodology* 21: 290-307.
- Hausman, D. and M. McPherson (2006), *Economic Analysis, Moral Philosophy, and Public Policy*, Cambridge: Cambridge

- Hutchison, T. W. (1964), *'Positive' Economics and Policy Objectives*, London: Allen & Unwin.
- Jacobs, J. (2017), 'Naturalism' in *The Internet Encyclopedia of Philosophy*, www.iep.utm.edu
- Kitcher, P. (1992), 'The naturalists return'. *Philosophical Review* 101: 53-114.
- Knight, F. H. (1922), 'Ethics and the economic interpretation', *Quarterly Journal of Economics*, 36; page references are to Knight (1935), pp. 19-40.
- _____ (1923), 'The ethics of competition', *Quarterly Journal of Economics*, 37; page references are to Knight (1935), pp. 41-75.
- _____ (1933), *The Economic Organization*, Chicago, University of Chicago; later published in 1951 as *The Economic Organization, with an article 'Notes on cost and utility'*, New York: Augustus Kelley; page references are to the reprint in *The Chicago Tradition in Economics 1898-1946, Volume VII: Frank H. Knight*, ed. R. B. Emmett, London: Routledge, 2002.
- _____ (1933a), 'Preface to the 1933 re-issue', in F. H. Knight, *Risk, Uncertainty and Profit*, New York: Harper and Row, 1965, pp. xiii-xxxviii.
- _____ (1934), 'Economic theory and nationalism', Essay presented to a meeting of the American Economic Association at Chicago, December; page references are to Knight (1935), pp. 277-359.
- _____ (1935), *The Ethics of Competition*, London: Allen & Unwin.
- _____ (1939), 'Ethics and economic reform', *Economica* N. S. 6; page references are to Knight (1947), pp. 55-153.
- _____ (1941), 'Social science', *International Journal of Ethics* 51; page references are to Knight (1956), pp. 121-34.
- _____ (1942), 'Fact and value in social science', in R. Anshen, (ed.) *Science and Man*, New York: Harcourt, Brace & Company; page references are to Knight (1947), pp. 268-92.
- _____ (1943), 'Social causation', *American Journal of Sociology*, 49; page references are to Knight (1956), pp. 135-50.
- _____ (1947), *Freedom and Reform*, New York: Harper & Brothers; page references are to the Liberty Press edition, Indianapolis, 1982.
- _____ (1956), *On the History and Method of Economics*, Chicago: Chicago University Press.
- Kurtz, P. (1998), 'Darwin Re-Crucified: why are so many afraid of naturalism?' *Free Inquiry* 18 (2).
- Mautner, T. (1999), *Dictionary of Philosophy*. Harmondsworth: Penguin.
- Moore, G. E. (1903), *Principia Ethica*. Cambridge: Cambridge University Press.
- Myrdal, G. (1953), (trans. P. Streeten), *The Political Element in the Development of Economic Theory*. London: Routledge.
- Myrdal, G. (ed. P. Streeten) (1958), *Value in Social Theory*. London: Routledge.
- Papineau, D. (2015) 'Naturalism'. *The Stanford Encyclopedia of Philosophy* (Fall 2015 edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2015/entries/naturalism/>
- Putnam, H. (2002), *The Collapse of the Fact/Value Dichotomy*. Cambridge, Mass.: Harvard University Press.
- _____ (2004), 'The content and appeal of naturalism', in De Caro and Macarthur (2004), pp. 59-70.
- _____ (2010), 'Science and philosophy', in De Caro and Macarthur (2010), pp. 89-99.

_____ (2012), 'For ethics and economics without the dichotomies' in Putnam and Walsh (2012), pp. 111-129). First published in 2003 in the *Review of Political Economy*, 15, 305-412.

Putnam, H. and Walsh, V. (eds) (2012), *The End of Value-Free Economics*. London: Routledge.

Quine, W. V. O. (1953), *From a Logical Point of View*. Cambridge, Mass.: Harvard University Press, pp. 20-46. An earlier version appeared in *Philosophical Review*, January 1951.

Quinton, A. (1977), 'Naturalism' in eds A Bullock and O Stallybrass, *The Fontana Dictionary of Modern Thought*. London: Fontana.

Robbins, L. (1932, 1935), *An Essay on the Nature and Significance of Economic Science*, 1st and 2nd edns, London: Macmillan.

Sen, A. K. (1967), 'The nature and classes of prescriptive judgments', *The Philosophical Quarterly*, 17(66), 46-62.

_____ (1985), *Commodities and Capabilities*, Amsterdam: North Holland.

_____ (1987), *On Ethics and Economics*, Oxford: Blackwell.

Endnotes

¹ In opposition to ethical naturalism, G E Moore (1903) argued that these objective moral properties were not reducible to entirely non-ethical properties and that we sometimes have intuitive or otherwise a priori awareness of moral properties or moral truths (Wikipedia, Meta-ethics). In the same way as personal affection and aesthetic enjoyment (Mautner 1999, p. 375), Moore argued that ethical properties such as 'good' could not be defined in terms of ordinary empirical expressions such as 'pleasant' or 'satisfying desire' or 'maximizing happiness' or, indeed, in terms of 'any definition intended to elucidate (analyze) its meaning' (Quinton 1977, p. 412), or in supernatural terms (Mautner 1999, p. 374). Any attempt to pin down its meaning is the 'naturalistic fallacy' as is any inference that purports to derive a normative conclusion (i.e. a value judgment) from purely factual premises i.e. any passage in reasoning from 'is' to 'ought' (p. 412).

² In a footnote at this stage, Knight points out that 'rigorously speaking, the theory is restricted to stating conditions of equilibrium; it could never determine the path of movement toward that state from any other'.

³ See Emmett (2006). 'But it is also most false to assert that one opinion is as good as another, that *de gustibus non disputandum est*' (Knight 1922, p. 40).

⁴ According to Emmett, Knight argues that, for Hayek, institutions (such as the law) evolve by spontaneous order rather than rational design. Knight criticizes such a view since it implies they evolve without social discussion. 'Once liberalism emerged, cultural evolution (or, simply, history) became the process of humans *making* – not only breaking – law' (Emmett 2007, p. 76).