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Title. How the Mind-World Problem Shaped the History of Science: A Historiographical Analysis of Edwin Arthur Burt's *The Metaphysical Foundations of Modern Physical Science* Part II

Author names and affiliations. Konstantinos Chatzigeorgiou
University of Glasgow, Philosophy, 67-69 Oakfield Avenue, G12 8QQ, Glasgow, United Kingdom

Corresponding author. Konstantinos Chatzigeorgiou,
Konstantinos.Chatzigeorgiou@glasgow.ac.uk

Abstract

This manuscript, divided into two parts, provides a contextual and historiographical analysis of Edwin Arthur Burt's classic *The Metaphysical Foundations of Modern Physical Science*. My discussion corroborates the sparse technical literature on Burt (Moriarty 1994; Villemaire 2002), positioning his work in the aftermath of American idealism and the rise of realist, pragmatist and naturalist alternatives. However, I depart from the existing interpretations both in content and focus. Disagreeing with Moriarty, I maintain that Burt's *Metaphysical Foundations* is not an idealist work. Moreover, I provide an alternative to Villemaire's mainly Deweyite/pragmatist reading, emphasizing the import of new realism and naturalism. Burt's historical thesis should not be viewed as outlining a systematic philosophical position, but rather as a (coherent) culmination of numerous philosophical problematics. To support my conclusion, I provide a substantial summary of Burt's text alongside a contextual analysis of the philosophical issues that preoccupied his teachers and peers in Columbia's philosophy department. I conclude with a historiographical section, rendering explicit the connections between Burt's understanding of the scientific revolution, and his distinctive early 20th century American intellectual context.

Keywords

Edwin Burt, Scientific Revolution, John Dewey, Frederick Woodbridge, History of Science

4. Isolating Burt's Philosophical Context

[Continued from Part I]

4.3. John Dewey: Contra Idealism and 'Presentative' Realism

John Dewey arrived in Columbia in 1904 and remained there until 1930. I have already noted that the Columbia philosophy department exhibited a realist orientation. Some of Dewey's early interactions with his peers, Woodbridge, Wendell Bush and Montague, are documented in John Shook's *John Dewey's Struggle with American Realism, 1904-1910* (1995). Here, I will mainly focus on Dewey's post-1910 reactions to realism¹ and briefly examine his *Reconstruction in Philosophy* (1920). In *The Short-Cut to Realism Examined*, Dewey begins by agreeing with realism's anti-idealism: "it is a paralogism to argue that because things must be known before we can discuss knowledge of them, things must themselves always be known (or in relation to mind)...knowledge always implies existences prior to and independent of their being known" (1910: 553-554). However, he also clarifies that the realists' attempt to draw ontological conclusions from the doctrine of external relations is indicative of an "old-fashioned rationalism" (1910: 554).² According to Dewey,

¹ For a monograph on Dewey's position on the realist/antirealist debate see Hildebrand (2003). My discussion of Dewey covers some common ground with Hildebrand's first chapters, but has a narrower focus on perceptual and historical issues. Hildebrand's central claim is that Dewey's intellectual legacy has been misunderstood by contemporary neopragmatists like Rorty (anti-realist) and Putnam (realist/internal realist).

² Clearly, Dewey repeats Royce's earlier accusation here, namely that realism rests on the doctrine of external relations.

the doctrine of external relations contains ambiguities. As noted, it claims that the relata of the knowing relation can be viewed as distinct and unalterable. Dewey maintains that knowledge can be understood as an active process, as well as a finished result. In the latter case, even idealists agree that the meanings of terms within a proposition remain fixed. Thus, a traditional idealist position such as “existences undergo change because of knowing them” (1910: 554) is compatible with the doctrine of external relations: the terms ‘existence’, ‘knowing’ and the relation ‘undergo change’ retain their meanings. Yet, if one regards knowledge as an active process, then the doctrine of external relations is false. Dewey suggests that the meaning of terms like mammal, species, metal, orchid, circle and so on, changes during scientific reflection. By ignoring the dynamical aspect of knowledge, the realist ignores problems of doubt, hypothesis and error.

In his *Brief Studies on Realism* (1911a; 1911b), Dewey further elaborates on his disagreements with realism/idealism. As noted in Pt I., the younger Montague grounds his realism on the variations of ideas and the lack of variations in objects. Dewey believes that such ‘presentative realism’ inevitably succumbs to idealism by assuming that perceptions have intrinsic cognitive status. Perceptions should rather be viewed as natural events. Consider the case of visual perception of a table at different times of day and via different perceivers. The presentative realist maintains that there is a real table and that due to differences in reflections of light or distinct viewing angles (even distinct biological makeups) a “multiplicity of separate psychical tables” is generated (1911a: 394). If perceptions are considered as instances of knowledge, and if it is also admitted that the ‘real’ object is not known in these instances, then the object (the real table) turns into ‘content’ or ‘meaning’.³ Thus, the realist “lets the nose of the idealist camel into the tent. He has then no great cause for surprise when the camel comes in – and devours the tent” (1911a: 396). What must be abandoned therefore, is the view that perception “is a cognitive presentation of an object to a mind” (1911a: 397). While Dewey claims – perhaps conflictingly – that scientific propositions ultimately stand upon perceptions, these should not be attributed an intrinsic cognitive status but should be viewed as signs that may guide inquiry in certain directions.⁴

According to Dewey, realists and idealists must recognize that the knowledge relation is open and discussable. For one, the knowledge relation does not exhaust the types of relation characterizing nature.⁵ Moreover, this relation cannot strictly characterize the ontological status of its relata. Just as a seller and buyer engaging in selling and buying relations are not exclusively sellers and buyers themselves, knowledge should also not be viewed in restrictive terms; knowledge is something that “happens to things in the natural course of their career, not the sudden introduction of a unique and non-natural type of relation” (1911b: 554). The ‘non-natural’ relation evoked here denotes the dubious introduction of a ‘mind’, or ‘ego’, or ‘self’, even the unclear notion of a fixed object/term as relata.⁶ Getting rid of such presumptions, may lead us to further pragmatic propositions like

³ The presumption appears to be that ‘content’ or ‘meaning’ are subjectivistic/idealistic in character.

⁴ Woodbridge develops a remarkably similar position in *The Deception of the Senses* (1913).

⁵ This intervention further highlights the epistemological basis of philosophical debates of the time.

⁶ As expected, the presumed assumption of a ‘non-natural’ entity in the knowledge relation was quickly contested. As Evander McGilvary wrote in his response to Dewey:

[this] is a thesis which some years ago was generally supported, and among realists even now, Messrs. Bertrand Russell and G. E. Moore still maintain this thesis. But most American thinkers...have been outspoken against this thesis as Mr Dewey himself. For instance, Mr. Woodbridge and the contributors

the fact that “things in becoming known undergo a specific and detectable qualitative change” (1911b: 554). This ‘alterability’ of the known is, or so Dewey believes, consistent with his dynamic conception of knowledge.⁷

4.4. *Reconstruction in Philosophy*

Having outlined Dewey’s early reactions to the idealist-realist debate, I will now briefly examine his *Reconstruction in Philosophy* (1920). Dewey’s influential work is a relentless attack on traditional philosophical problematics. Throughout the book, Dewey criticizes the insistence of philosophers on seeking unchanging concepts, universal/fixed moral norms and ultimate/absolute intellectual foundations. His general orientation is historicist, despite the lack of significantly detailed historical case studies. However, Dewey’s historicism does not entail a paralyzing ‘metaphysical relativism’ (1920: 200); political institutions, science, religion, art, moral aspirations, even logical and mathematical discourse⁸ exhibit continuous and progressive change.⁹ The ‘progress’ in question should always be understood as relative to specific ends. The inquirer sets his or her ends and exploits the available means. Abstract problematizations, indicative of most philosophical discussions, are perceived as leading us astray from the actual problems of concrete experience. Our practical problems are to be overcome by inquiry as the exercise of intelligence.

While Dewey’s historicist orientation and appeal to aims and ideal ends are important, the key relevance of Dewey’s *Reconstruction in Philosophy* to Burt appears to be a chapter that focuses on “a scientific revolution enormous in scope and leaving unchanged almost no detail of belief about nature, physical and human” (1920: 53). This revolution is presented in contrasting fashion, where a medieval Aristotelian universe is replaced by a modern one:

to the ‘First Program and Platform of Six Realists’ have made it fundamental to their respective realisms that consciousness is a relation between things and not a term of a relation or a relation of things to mind (1912: 364).

⁷ Overall, (Dewey’s) so-called pragmatism was not viewed as a precise doctrine as some of the first attempts to categorise it highlight (Lovejoy 1908a; 1908b; Perry 1912). Montague’s early efforts to relate pragmatism and realism (1909a; 1909b; 1909c; 1909d), single out four possible theses: i) an instrumentalist/biological type, according to which pragmatism adopts an evolutionist/naturalist thesis on the acquisition of knowledge; ii) a psychological type, according to which pragmatism is tied to a verificationist and, therefore, psychologistic thesis; iii) a humanist type, according to which the world is cognized via specifically human faculties and shaped by human desires and needs; finally iv) a logical type, adopting an instrumentalist attitude towards truth. On the highly contentious issue of the alterability of the known/real, Montague believes that the humanist pragmatist can be a realist if she concedes that the world does not change when it interacts with humans. The world could, of course, be constantly evolving or exhibit infinite complexity, hence allowing a plurality of perspectives. The realist humanist could account for a seeming-only alterability/plurality of the world by proposing that human needs and desires motivate numerous inquiries that capture distinct aspects of the real. My discussion has tried to preserve, to a given extent, the open-ended nature of Dewey’s interventions.

⁸ In Dewey’s words:

Mathematics is often cited as an example of purely normative thinking dependent upon a priori canons and supra-empirical material. But it is hard to see how the student who approaches the matter historically can avoid the conclusion that the status of mathematics is as empirical as that of metallurgy...this very structure is a product of long historic growth (1920: 137).

⁹ Colin Koopman has recently published interesting work on pragmatism’s progressive/melioristic historicism or ‘transitionalism’. For his examination of pragmatism’s historicist implications for philosophy, as well as its proposed solutions to contemporary historiographical problems (objectivism vs relativism, fact vs value, issue of periodization) see Koopman (2010). For his related monograph see Koopman (2009).

The world in which philosophers once put their trust was a closed world, a world consisting internally of a limited number of fixed forms, and having definite boundaries externally. The world of modern science is an open world, a world varying indefinitely without the possibility of assignable limit in its internal make-up....the world which men once saw with their eyes, portrayed in their imagination and repeated in their plans of conduct, was a conduct of a limited number of classes, kinds, forms, distinct in quality and arranged in a graded order of superiority (1920: 54-55).

The emotional tone of Dewey's chapter is optimistic: the fixed Aristotelian cosmos resisted change while the modern world is not rigid given its 'infinite' structure/complexity. Nevertheless, Dewey recognizes the alleged metaphysical conundrum generated by early modern mechanization/ mathematization:

The whole of nature became a scene of pushes and pulls, of cogs and levers, of motions of parts or elements to which the formulae of movements produced by well-known machines were directly applicable. The banishing of ends and forms from the universe has seemed to many an ideal and spiritual impoverishment. When nature was regarded as a set of mechanical interactions, it apparently lost all meaning and purpose. Its glory departed...*When qualities were subordinated to quantitative and mathematical relationships, color, music, and form disappeared from the object of the scientist's inquiry as such* (1920: 69-71) (italics not original).

The apparent metaphysical problem of reconciling spiritual aspirations and purposeless mechanism/mathematicism is circumvented by presuming a certain division of labor and a reminder of the ideal purposes underlying the 17th century's processes of mechanization/mathematization. The disappearance of the qualitative aspects of experience from science was a result of the practical aims to manipulate and control nature. Dewey maintains that properties like weight, extension and velocity enabled scientists to achieve these aims. But the focus in quantity and mechanization simply reflects the ends and specific aspirations of the scientists in question. Indeed, in a subsequent chapter Dewey maintains that,

when the consciousness of science is fully impregnated with the consciousness of human value, the greatest dualism which now weighs humanity down, the split between the material, the mechanical, the scientific, and the moral and ideal will be destroyed. Human forces that now waver because of this division will be unified and reinforced (1920: 173-174).

In summary, what is central in Dewey's thinking of this period is his belief in the futility of the idealist/realist epistemologically-motivated debates. Knowledge should acquire a secondary status as one relation among others and with no need to view one of its specific relata as fixed (the real), or non-natural (the mind/self/ego). Presentative realism, in this respect, falls into idealism's trap. Individual perceptions lack intrinsic cognitive status and should simply be viewed as signs that enable us to direct inquiry. The depreciation of the cognitive status of sense perception allows us to challenge the alleged fixity of the 'real' in the knowledge relation. The relata of the knowledge relation, as with all other relata, form

parts of more elaborate relational structures; changes in the relation of one relation can result in changes in the relation of others. Furthermore, no part of the relational structure of nature is safeguarded from change because change is a characteristic of all human endeavors. The Scientific Revolution of the 17th century replaced a fixed Aristotelian cosmos with an infinite one. Nevertheless, that Revolution generated a dualism of the mechanical/material/scientific and the moral/ideal/spiritual. Consistent with his belief that strictly abstract philosophical problematics are misguided, Dewey does not entertain any metaphysical conundrum underlying this change, stressing his optimism that this modern dualism can be overcome when we recognize that 'the consciousness of science' is motivated by human ideals; when the presence and significance of these ideals is recognized, the duality collapses.

4.5. *The Naturalist Reaction: Randall on Idealism's Supernaturalism*

Shortly after Burttt published his dissertation, another promising Columbia historian/philosopher, John Herman Randall Jr., released his *Making of the Modern Mind* (1926), an ambitious history from the Medieval period to the 20th century based on his then recent doctorate research previously published in two volumes as *The Western Mind*. Randall was a close friend of Burttt at the time and his input is acknowledged in the Preface of *MF* (Burttt 1925: v). He would soon become a prolific intellectual historian and make significant contributions to the history of philosophy¹⁰ and the history of science.¹¹ Crucially, Randall shared Burttt's educational background¹² and would play a pivotal role in merging the pragmatist and naturalist traditions of his predecessors.¹³ Therefore, his related views on the period attain special importance.

In his unfinished third volume of the *Career of Philosophy*, Randall maintains that 19th century idealistic philosophies have their historical roots in early modern developments:

In the seventeenth century, it was the new science that needed justification against the reigning religious and moral traditions...The problem of earlier modern philosophy had been to make a mechanistic science 'intelligible' in a human and social world –

¹⁰ Randall's definitive work is an unfinished three-volume history from the Middle Ages to the 20th century entitled *The Career of Philosophy* (1962; 1965; 1977). Two of his books also worth mentioning are *Nature and Historical Experience* (1958), and *How Philosophy Uses its Past* (1963). The former outlines Randall's Woodbridgean/Deweyite approach to historiography and the philosophy of history. The latter, based on his Matchette Lectures, examines the importance of history in the proper understanding of philosophy.

¹¹ His main contributions in the area, overlapping material from his 'philosophical' work aside, consist of a number of papers in the history of medieval science and Galilean scholarship (Randall 1961). Notably, Randall's Galileo departs from Burttt's Platonic interpretation. Randall perceived Galileo as a culmination of problematics in the tradition of Paduan Aristotelianism, highlighting Aristotelian antecedents in the integration of mathematics and physics and suggesting that Galileo's method is based on Giacomo Zabarella's regressus.

¹² For a piece that favorably examines Dewey's integration of the history of philosophy in his wider intellectual outlook see Randall (1977: 304-327). Randall's works are replete with references or allusions to Woodbridge, often being dedicated to him. One typical example is drawn from *Nature and Historical Experience*:

The man who most consciously tried to show me what is inescapably there, F. J. E. Woodbridge, I can not speak of as a teacher. I can only attempt to illustrate his teaching. In the face of what he showed me, I forget the showing, although I realize that without him to show, I should not have seen (1958: 2).

¹³ For an extensive piece on the post-Deweyite Columbia naturalism and its somewhat unreasonable rivalry with logical positivism/empiricism see Jewett (2011).

originally, in the Aristotelian universe. But the prestige of 'science' grew, until by 1860 the problem had become rather to make man and his society intelligible in a mechanistic and scientific universe (1977: 4).

In the context of ever-increasing establishment of scientific knowledge, norms and institutions, idealism is viewed as an attempt to circumvent the need for a reconciliation between a human world and the world presented to us by science:

Idealism was a 'theistic' interpretation of the world, that gave man and man's interests, the values man cares for, a cosmic significance. The idealistic reconstructions maintained...that there is something not improperly symbolized as 'God' and 'Providence', a Friend behind phenomena, who cares for man – that man's ideals are 'safe' because the power behind nature is also devoted to them...It is very difficult today even to understand the genuine insights of the idealists, if as the majority of the philosophically-minded are presently convinced, men can no longer take seriously this supernaturalistic frame (1977: 6).

Randall specifically mentions the distinctive Columbia setting that dictated how modern science cannot be ignored but must be properly understood and exploited:

It was possible, in the wooded seclusion of Jena or Heidelberg in 1800, or at Cornell in the 1890s, or in the cloisters of Oxford around 1900, to weigh 'science' in the balance as a philosophy of life, as one possible if unappealing 'theory' of the universe, and reject it for more congenial humanistic 'theory'. But can you do that in Columbia University in the City of New York? Or anywhere after the Manhattan Project? Science is now too deeply embedded in the basic processes of our civilization. We have got to respect it, to understand it, and hopefully even to use it...Our great problem is, how to find the essential values of life within the world science so ably describes. We are just coming to admit it. We have fought it tooth and nail, and explored every other possibility. Our problem, the task of the twentieth century, is to build an adequate naturalistic philosophy, to work out an adequate organization of the Good Life (1977: 8-9).

These quotations are offered because Randall expresses persistent Columbia-school aspirations that also reflect Burt's early undertaking. More importantly, Randall's emphasis on the need to build 'an adequate naturalistic philosophy' is not an afterthought of historical reflection. Alongside the realist and pragmatist reactions to idealism, early 20th century American thought also saw the emergence of naturalism.¹⁴ However, as Randall's quotations

¹⁴ The standard collections of American naturalist writings are Krikorian (1944) and Ryder (1994). For an overview of 20th century naturalism that also discusses Columbia philosophers see Eldridge (2004). Eldridge describes Woodbridge as a pluralist with intellectual debts to Santayana and Aristotle. The point of departure with Dewey is taken to be Woodbridge's metaphysical orientation, noting that "Dewey was much more oriented toward science...than Woodbridge the metaphysical realist" (2004: 58). I must disagree with Eldridge on this point. Although Woodbridge exhibited a clear metaphysical orientation, he was acquainted with developments in the scientific psychology and biology of his time. Moreover, he supervised, to my knowledge, two important and technical doctorates in the history of early modern science: Burt's *MF*, and Strong's *Procedures and Metaphysics* (1936). As I highlight in previous footnotes, Randall also undertook related scholarly work. Finally, Woodbridge showed knowledge of the 'scientific philosophies' of his own time,

highlight, his preferred iteration of naturalism eschewed the reductionistic connotations of the doctrine's antecedents. For most of the 19th century, naturalism and materialism were practically synonymous. Idealists were thus frank protesters of a scientific materialism according to which the physical sciences should be granted a privileged ontological status.¹⁵

4.6. *F. J. E. Woodbridge: Reconciling Naturalism and Humanism via a Present-Centered Historiography*

The roots of this unique non-reductive form of naturalism are traced in George Santayana's *The Life of Reason* and Dewey's subsequent *Experience and Nature* (1925). In the Columbia context, Woodbridge, Burt's lead supervisor, is our point of focus.¹⁶ His 1907 article *Naturalism and Humanism* is especially important as the article practically echoes Randall's discussion from almost 70 years later. The main aim of Woodbridge's paper is to trace the conflict between naturalism and humanism, while attempting a resolution. The article begins by mentioning the unique role for philosophy:

Philosophy, declining through acquired modesty or by the compulsion of the position of chief of all the sciences, may still rightly fully claim an historical function. For that complex of human performances which we call civilization turns out, as we examine it closely, to be a changing shifting scene which has none the less a definable background. To discover that background, and to exhibit the varied lights and shadows as thrown up from it, is a proper task for philosophy (1907: 1).

What Woodbridge observes is that civilization, although incorporating numerous human activities or performances, always possesses a wider 'definable background'. Philosophical inquiry occurs at a higher level of abstraction where this background is evaluated. According to Woodbridge, our age is one of naturalism "which pictures man caught in the machinery of nature and forced to learn at his imminent peril the lesson of efficiency" (1907: 2). Naturalism does not form the sole background, however. An opposing tendency is,

summed up in the word humanism. The war, so we have been told, is a struggle to preserve the humanities, to keep alive the classic literary heritage of the races to preserve arts and religion for ideal uses, to keep morality from sinking into mere opportunism, to make education minister to the spirit and not simply to serve the body's wants (1907: 2-3).

By contrasting parts of the eighth psalm of the Bible with certain remarks of the Darwinian

including those of Karl Pearson and Henri Poincaré (1909), and the work of Arthur Eddington and Percy Bridgman (1929b).

¹⁵ Darwin's evolutionary theory, in the hands of idealistic and pragmatist philosophers at least, appeared to present a countertendency to the materialism of 19th century physics and chemistry; see Randall (1977).

¹⁶ Woodbridge's intellectual outlook remains fragmentary. For the sole monograph that attempts to provide a systematic summary of his philosophy see Jones (1983). For an Aristotelian reading of Woodbridge's naturalism see Anton (2005: 99-128). Anton's informative work is rather unique in its attempt to establish viable connections between Columbia naturalism and ancient Greek, primarily Aristotelian, thought. For a different overview of Woodbridge's naturalism, emphasizing Woodbridge's Spinozism while briefly touching upon issues in color perception and relativity theory see Costello (1944). Notably, Costello taught psychology and philosophy in Harvard and published a favorable and generally accurate review of Burt's *MF* (Costello 1926).

Thomas Huxley, Woodbridge outlines the current naturalist temperament:

Man appears no longer as the Creator's last and supreme act, with all nature made for its conquest and dominion. He has become a part of nature, her master only as he has first become her attentive and obedient servant. She nourishes him in her bosom, but sedulously conceals from him the amount and length of her concern; her greatest child, but questionably her favourite. As a part of nature he can claim only a natural origin and destiny; he can no longer spontaneously believe that he can survive her. Being a part, he must measure himself up against the whole, laying his little stature off as something practically negligible in the vastness of things (1907: 6).

Nevertheless, Woodbridge observes that this central idea of naturalism is at least as old as the Greeks. What has recently dramatically changed, hence generating the alleged conflict, is not our place in nature, but rather our view of it. The origins of this cosmological shift are traced in the early modern period:

The history of the science of mechanics is suggestive reading for the student of civilization, for it shows how a study of appliances has been turned into a theory of the universe. Men like Archimedes were interested in mechanics that they might make pumps and useful structures. But men like Galileo, Copernicus, Newton, and Laplace were interested that they might understand the processes of nature...[Galileo] was a revolutionist. His offence, however, lay not in his ideas; they might have been pardoned, as were those of many another, had he not been measurably successful in his practice. Nature was responsible for his overthrow, for she answered readily to mechanical treatment (1907: 7-8).

Thus, an ancient like Archimedes placed solely instrumental value in mechanics. On the other hand, the early modern shift was cosmological, motivated by an aspiration to understand nature. One difficulty is that the early modern mechanization of nature gradually dictated a mechanization of humans. Nevertheless, this development should be viewed in positive terms as "the natural expression of an altered background forced upon us by the progress of events" (1907: 10). Reform is undoubtedly required, but such reform demands a better appreciation "of the controlling forces of our civilization" (1907: 10).

Woodbridge proceeds by highlighting that humanism places emphasis on history and the classics. Undoubtedly, humanism possesses a qualitative richness that is not exhibited by its purported enemy. However, humanism suffers because it follows an erroneous educational program. The problem is that humanism's past-centeredness has exhaustible resources. The source of Greek intelligence, rightly revered by humanism, was not its own past achievements but nature herself. Woodbridge describes nature poetically as something "not located in the past or traditionally guarded, but one surrounding [us] and enfolding [us] with wonders daily new" (1907: 12). The formal definition seems to be that nature is that which is responsible for our immediate experience.¹⁷

¹⁷ Woodbridge's insistence on the notion, in accordance with many of his Columbia realist and pragmatist peers – and idealist contemporaries – should not be conflated with traditional empiricist/subjectivist notions of ideas, sensations, sense-data, etc. Rather, experience/nature denotes forms of experience, including aesthetic, scientific, moral and so forth, and is always historically-situated. More broadly, experience denotes ways of

Surprisingly, Woodbridge's remedy is not anti-historical, let alone anti-humanistic, but historiographical:

I would not be understood as not valuing history, for it is man's great teacher...But history should be studied not as a record of the past, but as the story of the present, as the backward look of current experience. Then it is illuminating and instructive...[O]ur own achievements can have significance only as the future owns them as its past...[Humanism] divided time into epochs, the least important of which was the present. It lived constantly in another world than its own (1907: 13).¹⁸

Thus, what Woodbridge accuses humanism of is a past-centeredness that fails to offer guidance for the present. Studying the past for its own purposes inevitably detaches the humanist from her present experience and, thus, from nature. This defect of humanism has allowed a mechanistic form of naturalism to overtake our "opinions and practices" (1907: 14). The genuine success of mechanism has, therefore, narrowed our scope of understanding and averted us from attaining a more adequate appreciation of nature. Woodbridge's conclusion is that both naturalism and humanism, as presently understood, "have become unsatisfactory philosophies of life" (1907: 14). The task of philosophy is to cultivate an enlightened naturalism and humanism that will form the novel background of our activities.

4.7. Woodbridge's Realist Metaphysics and Philosophy of Mind

Since Woodbridge's naturalism dictates an integration of the humanism and naturalism of his time, his metaphysics and philosophy of mind, in turn, strive, perhaps not always clearly or successfully, to undermine traditional metaphysical dualisms like appearance and reality (or idea and object)¹⁹ and mind and world (or mind and body). Arguably, his definitive statement on these issues is his monograph titled *The Realm of Mind, An Essay in Metaphysics* (1926). While Woodbridge's book was published shortly after Burt's dissertation, it remains a synthesis of his prior work.²⁰ The book begins by suggesting that the distinction between the mental and the physical appears natural since so-called mental

living in the world, rather than a strict psychologistic thesis regarding perception.

¹⁸ Besides his popular classes in metaphysics and the history of philosophy, Woodbridge taught courses in ancient philosophy. His main historical work is *The Son of Apollo, Themes of Plato* (1929a). His historiographical monograph is *The Purpose of History* (1916). Although Woodbridge taught classes in Aristotle, his sole surviving work is a series of lectures published a few decades after his death (Woodbridge 1964). Despite Woodbridge's sophisticated presentism, his colleague Wendell Bush viewed him as "backward-looking", especially compared to Dewey (Randall 1953: 6). Here is a brief excerpt from Woodbridge's historiographical work, summarizing his historiographical perspective:

The historian is himself an historical fact indicating a selection, a distinction, and an emphasis in the course of time. His history is naturally colored by that fact. Other histories he can write only with an effort at detachment from his own career. He must forget himself if he would understand others; but he must understand himself first, if he is successfully to forget what he is. He must know what history is, recognize its pluralistic character, and try to do it justice (1916: 21).

For Woodbridge, history is pluralistic because the historian's present experience dictates a unique perspective. This emphasis on present experience should be attributed to his distinctive form of naturalism.

¹⁹ See especially Woodbridge (1913).

²⁰ See Woodbridge (1917; 1921; 1937: 346-364).

acts like thinking, perceiving and remembering are different from physical events like walking, digesting and breathing. Nevertheless, this initial distinction raises the following conundrum: how can we render these acts and events compatible? In short, how can the distinction of the so-called mental and the so-called physical be sustained when both seem to form parts of nature? A common reaction is that there are two natures, not one; a physical world of physical bodies, and a mental world of perceptions and ideas. In typical (direct) realist fashion, Woodbridge suggests that a belief in an inner mental world prohibits us from talking about a derivative physical world (1926: 17-18). On the other hand, when solely focusing on the so-called physical world we are presented with a system where “[q]uantitative considerations dominate” (1926: 16).

Woodbridge also distances himself from the Kantian position: “I dislike the *Kritik der reinen Vernunft* so much. As every reader of it must confess, it is among the most stimulating of books, but I must also confess that I have found it very confused and much of it very unintelligible” (1926: 27-28). The offered reason for evading Kant is the rejection of Kant’s a priori forms of intuition; thinking takes place in a context where space and time are accessible, but these notions set no specific limits on the contents of thought. We can think of historical and astronomical events that are spatially and temporally removed from us.²¹ This allows Woodbridge to suggest that when the mind is evoked, we are not dealing with a place, nor an event, but a specific realm.²²

The ‘realm of mind’, denotes reflection at a much higher level of abstraction than that which allows us to draw our typical distinctions between ‘mind’ and ‘body’. Our initial distinction of the mental and the physical is obvious, but only if we confine inquiry to human/biological action. However, at a higher level of abstraction the ‘mental’ and the ‘physical’ cannot be properly distinguished; moving upwards in the ladder of abstraction suggests that thought/mind and world are deeply intertwined:

Any exploration of the mind is confined to the world in which thinking is itself a fact. Such a world is not hypothetical or an assumed world. It is rather the world which is the immediate and concrete subject matter of our inquiries. It is the world about which we think in all its vast extent and its bewildering variety. Our thinking penetrates it...The exploration of the mind is thus an exploration of the world in which we think, but it has its own bias, so to speak. It is relevant to the fact of thinking, to the accumulation of knowledge, and would discover a mind if it could. What it discovers is the fact of logical connection interwoven with whatever we think about. The fact

²¹ Surely Kant would admit this. He would respond, however, that historical and astronomical conjectures presume spatiality and temporality. Woodbridge departs from Kant by hypostatizing space and time and suggesting that “I freely admit that the world of space and time existed long before thought of it and will exist long after we have ceased to think” (1926: 25). He, nevertheless, insists that such a world does not limit “the reach of thought” (1926: 25). What is striking is that in Woodbridge’s American realist/anti-idealist context, Kant was read with extreme suspicion, if not disrespect.

²² Woodbridge also distances himself from bishop Berkeley, noting that thinking about the world presumes thought, but the world is not created by our thinking. What we may say is that the “realm of mind is coextensive with the realm of being and the realm of being is in the mind” (1926: 33). Using Woodbridge’s terminology, Berkeley certainly agrees that the ‘realm of being’ is in ‘in the mind’ (of God). Nevertheless, he would disagree with the claim that the realm of being and the realm of mind are coextensive/overlapping, in the sense of the former existing prior to/independently of the latter.

defines as a logical world the world in which thinking is an event (1926: 38).

As I understand this generally obscure passage, Woodbridge highlights that inquiry (into the sciences, or other forms of experience) presumes both the world in its various aspects, as well as thought. The various aspects of the world correspond to our subject matters, while thought is a characteristic of the inquirer. When we try to unearth a metaphysics that properly describes this situation we are ultimately left with what Woodbridge calls logical²³ connections/relations 'interwoven with whatever we think about'. Nature, therefore, must itself possess a 'logical' or relational structure. Processes of thinking are not responsible for the existence of the entire relational structure of nature. More crucially, processes of thinking involve restricted domains of investigation, restricted subject matters; history, psychology, chemistry, theology and other subject matters are parts of nature with none presenting a 'bird's eye' view of nature's entire relational structure.²⁴ These realizations simply suggest that inquiry into the world cannot exclude thought, but that thought/mind is not ultimately responsible for the world. Mind and body can only be distinguished at a superficial level. At the ultimate level of generality, one can only talk of nature.

Summarizing Woodbridge's intellectual perspective, we notice his belief that the early modern period saw the rise of mechanistic philosophies of nature. Contemporary humanism with its backward insistence on past achievements is myopic as it fails to realize that these achievements were inspired by nature. The advantage of a cosmology of mechanism, in the hands of Galileo, Newton, Laplace, is that it simply constitutes a reply to nature's calling. However, mechanism is not a satisfactory philosophy of life, being bereft of emotional and qualitative features so characteristic of humanism (and experience). What is required is a naturalistic history that is grounded in the present and that will clarify the controlling forces of our civilization. This is one of the important steps towards a reconciliation of naturalism and humanism. Furthermore, naturalism need not be understood in reductive terms. When we examine the specifics of the mind-body problem, a problem that has traditionally resisted the development of a proper naturalism, we quickly realize that the traditional dualistic view of perception is not intelligible. Indeed, all idealistic/subjectivistic philosophies

²³ Woodbridge appears to use the term 'logical' in an idiosyncratic and abstruse fashion. The very few commentaries in the secondary literature have not achieved greater clarity, in my view, either. The most extensive discussion on the topic is William Shea's 1975 *Frederick Woodbridge: Experience and Idea*. Shea emphasizes Woodbridge's distinction between objects and ideas whereby ideas are defined as "things in their logical relations" (Shea 1975: 718). Since Woodbridge is a direct realist, he conceives ideas as relations between genuine objects, not sensations or other 'internal' mentalistic entities. Given that the content of thought is ideas and ideas are 'logical' relations between objects, thought occurs by depicting real objects in various relations/connections. Thus, for Shea, the term logical relations/logical structure denotes "the thinkability of being", i.e. the fact that objects may be organised in specific relations (Shea 1975: 718).

However, the fact that objects can be organised in such relations, reflexively suggests that the world/nature itself is 'logical', i.e. characterised by such logical relations. If that were not the case, then thought would not be possible. There are of course numerous parts/aspects of being that are not being thought of at any given moment, and these parts are 'real' enough, with their existence preceding our thinking of them. Woodbridge is not an absolute idealist. But he does admit that whenever thought occurs, such thought is indeed coextensive/overlapping with the realm of being.

²⁴ As Woodbridge observes,

We can not get out of experience and stand upon some commanding height from which we may then survey the world in which we live. Our point of view is determined by our situation. It is the world as experienced with which we have to do, and the world as experienced in the concrete, vivid world of every day (1926: 39).

should be discarded on realist grounds. This leaves us with the option to integrate the mind in the relational structure of nature. Mind and body, so long as these concepts concern human action, merely highlight a restricted domain of investigation. Closer investigation suggests that inquiry into the sciences, including the other forms of experience, presumes both thought and the world. At the highest level of generality, however, the sole category is nature.

5. Historiographical Analysis

Hitherto, I have summarized Burt's historical thesis, outlined certain interpretations and elaborated on his intellectual context. This concluding historiographical section, organized under four questions, renders explicit the connections between Burt's historical argument and his philosophical setting. Throughout this section, I will employ additional quotations from Burt and related figures in support of my conclusions.

5.1. *What explains Burt's emphasis on perceptual and metaphysical issues?*

In my summary of Burt's text, I have striven to highlight Burt's own philosophical emphases. It is not accidental that his narrative begins with the Copernican abstraction from sense perception. Specifically, Burt maintains that Aristotelian (empirical) arguments should have been decisive in Copernicus' time. Nevertheless, the new astronomy (and, subsequently, the new physics) undermined key Aristotelian tenets by a reductionist hypostatization of geometry and a Platonic interpretation of sense perception as the realm of shifting and confused appearances. These assumptions generated an austere 'mathematicist' conception of reality that excluded qualitative features and appeals to final causes. From Burt's perspective, the primacy of efficient causation, Galileo's subjectivist interpretation of the secondary qualities and Descartes' dualism boil down to conflicting attempts to clarify the workings of sense perception and identify the proper perceptual/epistemological basis of the new science. Post-Cartesian, especially Newtonian, developments inherited the assumptions of their predecessors.

As I emphasize in my discussion of Burt's setting, perceptual issues constituted the groundwork of the American idealist-realist debates. Montague's early departure from Royce concealed the fact that both idealists and realists presumed a representational theory of perception. The so-called problem of knowledge, dictating the correct metaphysics, was grounded in reflections over how individual subjects perceive that which is external to them (the known/real). The idealist argued that a representational epistemology entails idealist conclusions. The early realist conceded the 'ideal' nature of the knowing subject, claiming ignorance on the precise nature of the relation obtaining between mind and world. Burt's Columbia contemporaries, the new realists, Dewey and Woodbridge, openly questioned the representational account and its epistemological/metaphysical implications.

In effect, Burt's historical treatise traces the genetic origins of the philosophical debates of his own time. Why is modern philosophy endlessly debating perceptual issues that continue to shape the intellectual framework of the more recent proponents of realism, pragmatism and idealism? Why have so many philosophers suggested that the world is not what we perceive it to be – so far as its essence may be determined – and that dualistic, even

positivistic, epistemologies are required? Why are we so willing to adopt a cosmological dichotomy between mind and world, according to which a mind internally perceives 'material' substances external to itself? As Burttt writes in his introduction, "[t]he central place of epistemology in contemporary philosophy is no accident; it is a most natural corollary of something still more pervasive and significant, a conception of man himself and especially of his relation to the world around him" (1925: 2). In *MF*, our inherited perceptual, epistemological and ontological problems are treated as mere symptoms of a more radical metaphysical assumption underlying modern thought: the mathematicism of modern science. Therefore, the main bulk of modern philosophy is viewed as an intellectual reaction to specific historical developments.

To the extent that Burttt provides a 'reconstruction' of our underlying mathematicist cosmology, he appears less of an innovator, following Dewey and Woodbridge in their historically oriented pragmatisms and realisms. Burttt's fragmentary concluding remarks are, setting certain Deweyite appeals aside,²⁵ Woodbridgean. A world whose existence is antecedent to and independent of the human mind is admitted – or, at least, never openly questioned. However, the presumption of a strictly mathematical world excludes the essential contribution of the human mind. It is also worth mentioning that Burttt's (and Woodbridge's) claims are unapologetically metaphysical, clearly untroubled by Kantian and positivistic constraints. In the end, all modern epistemological perspectives, including those of a certain anti-metaphysical bent, are viewed as reactions to antecedent shifts in our cosmological/metaphysical thinking. Modern positivism and empiricism, in contrast to their Keplerian and Galilean antecedents, now conceal their modern metaphysical presumptions – mathematicism, efficient causation, localization of mind in the brain. Equally motivated by his own historical findings, and the realist impetus for the independence of metaphysics from epistemology Burttt embraces our ability to provide ultimate and constructive accounts of reality.

5.2. *Why did Burttt vilify subjectivity, understood as a private mental realm of sensations?*

²⁵ I am mainly referring to Burttt's concluding appeal to ideal ends and his condemnation of Kant's absolutist moral framework. There are two points to raise here: the first concerns Burttt's brief concluding cosmology, according to which the extended world of science ultimately serves human desires and needs (Burttt 1925: 319). The obvious reading is that the human intellect is responsible for conceiving and realizing the world as an extended/geometrical substance. At this stage, Burttt momentarily departs from the realist demand for a reality unalterable by human cognition, being closer to some of Dewey's own remarks (and, arguably, the idealists of the time) on the source of the 'alterability' of the known. Secondly, Burttt's puzzling condemnation of Kant's moral framework is probably revealing of a Deweyite moral pluralism. Given the lack of textual support, I can only offer a rather anachronistic piece of evidence by referring to Burttt's subsequent article on Dewey. In that article, a much older Burttt (1960) explains Dewey's mature philosophical oeuvre, including his theory of education, epistemology/logic, and metaphysics, as emanating from strictly moral and social concerns. Thus, for Dewey "there is no fixed and absolute end...in any sense which provides practical guidance. Ends vary from situation to situation and every end, when attained, becomes a means to some further end in every new situation in which it can thus function" (1960: 403). Dewey's outlook is viewed as a reaction to his earlier (neo-)Hegelian heritage, whereby ethical theory uncovers the supreme or ultimate end independently of our concrete moral experience. The similarities of this supposedly Hegelian approach with Kant's own moral framework, attacked in *MF*, are obvious. In general, both of these 'Deweyite' concluding appeals, although distorted by Burttt's metaphysical orientation, serve important philosophical functions: the former enables optimism, allowing for the possibility that the human intelligence will transform our present-day mathematicist cosmology; the latter, highlights how an emphasis on the mathematically representable aspects of experience conceals specific human (hence, historical, contingent, non-absolute, transformable) values/ideals.

MF portrays Galileo as offering a novel conception of subjectivity, motivated by the primary and secondary quality distinction. Burttt is aware that the primary/secondary quality distinction did not begin with Galileo. Yet, Galileo explicitly identified the primary/essential qualities of bodies with those strictly relevant to the new science, rendering all else 'subjective' and less important/real in the novel cosmological scheme. From Burttt's standpoint, this is a ground-breaking event in human thought precisely because the ancients and medievals never implied a degrading and subservient role for aspects of the human subject.²⁶

It is possible that Burttt's personal religious orientation contributed to his critical attitude towards 'Galilean' subjectivity. After all, Burttt confirmed his early idealistic Protestantism. Moreover, it is no accident that Burttt's work contains extensive sections on the theological underpinnings of early modern science, specifically in its treatment of Kepler and the Cambridge context of More, Barrow and Newton. From this perspective, related to Moriarty's reading, the hostility towards a subservient role for the human subject simply reflects Burttt's personal religious motivations.

Yet, I believe that a religious/idealist explanation of the vilification of modern subjectivity is, at best, only part of the story. Burttt's related historical analyses remain theologically sober, expressing no clear demand for a return to an early modern, medieval, or idealistic supernaturalism. Instead, Burttt's concluding section reveals, once again, his distinctive philosophical context. As I have argued, the Columbia representatives of realism, pragmatism and naturalism argued for the abandonment of representational accounts of perception: the new realists called for a return to a 'naïve realist' view, also implying a pluralistic conception of the 'real'; Dewey argued that we must abandon the view that knowledge consists of a 'cognitive presentation' of objects to minds; Woodbridge explicitly flirted with naïve/direct realism in his denunciation of subjectivism in all its variants.

Therefore, one of the key intellectual issues in Columbia was the falsity of presentative/representational realism. For the Columbia philosophers, this form of realism either dictated an unworkable dualistic view of perception, or ultimately succumbed to subjectivism and idealism. Indeed, Burttt himself despairs that if our 'mathematicist' cosmology, dictating a representational account, is "justified, the big problems of modern metaphysics are inevitable" (1925: 302). More broadly, Burttt's vilification of 'Galilean' subjectivity, should more fruitfully be linked to the Columbia attempt to liberate philosophy from post-Cartesian doctrines. The new realist identification of seeming and being, Dewey's dynamic conception of knowledge and Woodbridge's realistic naturalism, all were developments that enabled an integrated (and, presumably, elevated) role of the human mind/organism in the world.

²⁶ In Burttt's own words:

In the philosophies of Plato and Aristotle this is obvious enough; the remark holds true none the less for the ancient materialists. Man's soul for Democritus was composed of the very finest and most mobile fire-atoms, which statement at once allied it to the most active and causal elements in the outside world. Indeed, to all important ancient and medieval thinkers, man was a genuine microcosm; in his was exemplified such a union of things primary and secondary as truly typified their relations in the vast microcosm, whether the real and primary as ideas or as some material substance (1925: 79).

5.3. *Why did Burttt treat modern philosophy as fundamentally misguided?*

The reader will have noticed the ease with which Burttt's conclusions show a disdain towards entire philosophical traditions. In fact, Burttt characterises modern philosophy as some sort of "metaphysical barbarism" (1925: 325). Our genuine intellectual problems are not those which continue to perplex philosophers, but should be traced in the radical intellectual developments taking place from Copernicus until the time of Newton. Therefore, *MF* contextualizes the scientific 'heroes' of early modern thought, while magnifying their discovered philosophical/metaphysical presumptions and dogmatisms. Burttt attributes the mathematicism of Copernicus, Kepler, Galileo, etc. to the surrounding influence of Platonism/Pythagoreanism. In the English context, More, Barrow and Newton almost uncritically adopt the mathematicist output of their predecessors, at best infusing it with their own theological – and, ultimately, inconsequential for present thought – temperament. At his most charitable, Burttt believes that modern philosophy/metaphysics,

at least beginning with the work of Berkeley and Leibniz...is in large part a series of unsuccessful protests against this new view of the relation of man to nature. Berkeley, Hume, Kant, Fichte, Hegel, James, Bergson – all are united in one earnest attempt, the attempt to reinstate man with his high spiritual claims in a place of importance in the cosmic scheme. The constant renewal of these attempts, and their constant failure widely and thoroughly to convince men, reveals how powerful a grip the view they were attacking was winning over people's minds... (Burttt 1925: 11).

Again, we may ask, why is modern philosophy set aside and perceived a series of futile reactions towards the new science? There are two complementary answers to this question. First, Burttt draws a subtle analogy between the assumptions of modern scientists and those of modern philosophers. The former, attaining their codified form in Newton, adhere to an unconscious Pythagorean metaphysic that shapes their scientific activities. The latter, presumably equally unconsciously, assume the main categories of modern science – hence, science's metaphysical foundations – with their philosophies consisting of impotent ways around them.²⁷ *MF*'s central tenet is that science presumes questionable metaphysical categories that should be scrutinized; the history of science reveals that a positivist reading is simply erroneous. Thus, the modern philosopher and metaphysician who presumes, or implies via her practice, science's privileged position²⁸ performs a disservice to her discipline.

²⁷ Specifically, Burttt argues that the key role of space and time in present-day philosophy is indicative of the pervasive influence of the metaphysical categories of the new science:

The big puzzles of modern philosophers are all concerned with space and time. Hume wonders how it is possible to know the future, Kant resolves by a coup de force the antinomies of space and time, Hegel invents a new logic in order to make the adventures of being a developing romance, James proclaims an empiricism of the 'flux,' Bergson bids us intuitively plunge into that stream of duration which is itself the essence of reality, and Alexander writes a metaphysical treatise on space, time, and deity. It is evident, in other words, that modern philosophers have been endeavouring to follow the ontological quest in terms of a relatively new background of language and a new undercurrent of ideas (1925: 13).

²⁸ Given Burttt's quoted list of philosophers, this remark must also apply to idealist philosophers, whose alleged independence from science is viewed as deceptive.

Secondly, from my own historiographical perspective, it is Burt's Columbia setting that further explains *MF's* subtle hostility towards modern philosophy. As my analysis clarifies, Burt's outlook is not a solitary and eccentric one. Firstly, the new realist emphasis on the inadequacies of dualism and subjectivism, alongside the proposed retreat to an Aristotelian theory of perception, entail that post-Cartesian philosophy has led us astray. For these realists, even Kantian subjectivism is easily exploitable by absolute idealism. What is especially instructive for our purposes is the realists' historical diagnosis, according to which the genetic origins of present intellectual ills are traced in the early modern construal of the primary/secondary quality distinction, a distinction of prominent importance in Burt's historical narrative.

Relatedly, Burt's daring attempt to question the world presented to us by modern physics, shares a similar starting point. As noted, the realists, including Woodbridge, openly questioned the then current prevalence of exclusive and reductionist philosophical explanations. Materialism, for example, with its emphasis on the quantitative domain of physics and the derivative details of human biology/physiology, cannot provide a privileged account of reality. The real appears to be 'pluralistic', encompassing the vast canvas of human experience. Furthermore, as Woodbridge maintained, the emphasis on a mechanistic form of naturalism is an inadequate abstraction that does not capture the qualitative richness of perception. Burt's critical outlook towards a mathematicist and mechanistic cosmology, alongside his unwillingness to defend an idealist position, indicate the realists' pervasive skepticism towards modern philosophy.

Lastly, Dewey's anti-philosophical/anti-intellectual orientation is also partly responsible. As illustrated, Dewey's take on the idealist-realist debate appears especially dismissive, even suggesting that the realist and idealist are espousing a roughly identical view. Similarly, his *Reconstruction in Philosophy*, consistently underplays the import of our inherited philosophical problems. The whole enterprise of modern philosophy is viewed as the illusory pursuit of highly abstract and unchanging norms and concepts. Dewey's non-metaphysical conception of the scientific revolution/modern science, although admitting the present prevalence of quantification/mechanization, remains deflationary given its emphasis on the specific ends of scientists. Such value-driven stance certainly departs from Burt's (Woodbridgean) metaphysical orientation. However, one observes clear similarities in the scornful attitude towards modern philosophical traditions. This attitude explains the impetus for Burt's critical evaluation, as well as his optimism regarding the prospects for future 'reconstruction'.

5.4. *Why did Burt write a history that seeks to resolve present conundrums?*

I have strongly stressed Burt's presentist historiographical orientation. Burt's conclusions are anticlimactically present-centered, criticizing Berkeley, Kant, Huxley, even outlining a novel cosmology. This novel cosmology recognizes the importance of the human mind in our ever-changing picture of the universe, while admitting the 'workable results' of modern science. It is instructive to break down our fourth and final question into two separate ones. We may first examine Burt's decision to write a history in the first place. One explanation, provided by Villemaire, emphasizes the strong historical tradition of Columbia University, highlighting the influence of major American historians like James Harvey Robinson and

Charles Beard.²⁹ Villemaire points out that Burt's philosophy department exhibited a similar orientation,³⁰ quoting a corroborating excerpt from Sidney Hook's autobiography:

I doubt that the teaching staff got much philosophical stimulation or challenge from those they taught, except in a few small seminars. There was not enough intellectual feedback...Everyone except Dewey and Montague seemed to me to be trying to understand why the philosophers of the past said the odd things they did, not whether what was said was true or even formally valid (Hook 1987: 85-86, cited in Villemaire 2002: 32).

Setting Hook's debatable assessment aside, Villemaire's is certainly correct.³¹ As a case in point, Burt's 'philosophy' dissertation primarily outlines the historical background of our present intellectual predicament.

Yet, I believe that something stronger can be said: we may attribute Burt's historico-philosophical methodology to his supervisor. In *Naturalism and Humanism*, Woodbridge insists that the proper role of philosophy is the expression and evaluation of the general assumptions of a given age.³² According to him, modern naturalism's conflict with humanism appears to be indicative of certain historical developments, specifically the revolutionary

²⁹ For the classic study of Beard's historiography, briefly examining its relationship to Robinson's New History as well as American pragmatism, see Strout (1958). According to Strout, the 'pragmatic revolt' in American historiography was partly a reaction towards Leopold von Ranke's scientific historiography. Historians like Carl Becker and Beard maintained that historical inquiry should no longer be described as the unearthing and documentation of a series of past 'facts'. Realistically, the historian is grounded in the present, with her history shaped by specific values and ideals conditioned, in turn, by a specific historical context. The so-called pragmatic element is the "assumption that historical reconstructions are functional adjustments of an organism to its environment, made to satisfy the current needs and hopes of the historian's social group" (Strout 1958: 9). Consequently, the historian's activity is no longer viewed in 'antiquarian' terms, but as an important tool in shaping a better future. Although Strout's analysis remains quite sympathetic to Beard (and Becker), he concludes by noting that an overemphasis on the present ultimately succumbs to a radical and self-defeating form of relativism. More crucially, the adoption of relativism is clearly in tension with Beard's well-known economic determinism. At this stage, I am primarily mentioning these details in order to highlight the clearly elevated historiographical role of the present during the time *MF* was written.

³⁰ Villemaire's account is more complex, noting that Burt's historical methodology was shaped by Dewey and Robinson's 'genetic method'. The goal of this method was the "clearing away [of] all previous presuppositions which were assumed to have grown out of a specific cultural context and then testing the stripped idea set for its clarity and value in present-day circumstances" (2012: 16). Accordingly, the goal of this historical approach was to "inform right action" (2012: 16) by providing "a reconstituted present on the basis of the questions that had been asked and answered in the past" (2012: 17). Again, as highlighted in footnote 29, I do not wish to contest genuine background influences. However, I believe that the more direct explanation of Burt's historical methodology and presentist outlook in *MF* is Woodbridge himself.

³¹ While Columbia's philosophy department retained its 'philosophical' character, scholars like Dewey, Woodbridge and John Coss instilled strong social and historical sensibilities in their graduate students. Burt, Randall and Strong aside, some notable Columbia graduates include Herbert Schneider, author of *Making the Fascist State* (1928) and *A History of American Philosophy* (1946), Will Durant, author of *Philosophy and the Social Problem* (1917), *The Story of Philosophy* (1926) and co-author of the remarkably successful eleven-volume *The Story of Civilization*, as well as the celebrated medieval historian and social philosopher Richard McKeon. Sterling Lamprecht, who completed his doctorate under Woodbridge, also published influential papers in the history of early modern philosophy (1926; 1927; 1935), historiography (1936; 1939) and wrote a synoptic history of western philosophy from ancient Greece to the present (1955).

³² Expectedly, Burt begins *MF* by pointing out that "[t]he world-view of any age can be discovered in various ways, but one of the best is to note the recurrent problems of its philosophers" (1925: 1).

'mechanistic' outlook of Copernicus, Galileo, Newton and Laplace; a historical period that demands philosophical elucidation is selected. A remarkably similar framework of analysis is adopted in *MF*. Having first emphasized the central role of epistemology in contemporary philosophy, Burttt maintains that

knowledge was not a problem for the ruling philosophy of the Middle Ages...That people subsequently came to consider knowledge a problem implies that they had been led to accept certain different beliefs about the nature of man and about the things which he tries to understand. What are those beliefs and how did they appear and develop in modern times? In just what way did they urge thinkers into the particular metaphysical attempts which fill the books of modern philosophy?...Why, in a word, is the main current of modern thought what it is? (1925: 2-3).

Following Woodbridge, Burttt also believes that a main current of modern thought is a mechanistic form of naturalism:

...man is but the chance and temporary product of a blind and purposeless nature, an irrelevant spectator of her doings, almost an alien intruder on her domain. No high place in a cosmic teleology is his; his ideals, his hopes, his mystic raptures, are but the creations of his own errant and enthusiastic imagination, without standing or application to a real world interpreted mechanically in terms of space, time, and unconscious though eternal, atoms. His mother earth is but a speck in the boundlessness of space, his place even on the earth but insignificant and precarious...This is of course, an extreme position; at the same time is it not true that the reflective modern man, in his cosmological moods, feels the analysis of the situation thrusting itself upon him with increasing cogency? (1925: 10).

Evidently, Burttt affirms Woodbridge's intellectual positions. There is a shared insistence that a type of historically-oriented philosophy should unearth the ultimate presumptions – or definable background, to use Woodbridge's term – of modern thought. More astonishingly, Burttt also shares Woodbridge belief that one of the ultimate presumptions of modern thought is a mechanistic, and deeply unconvincing, form of naturalism with origins in the early modern period. Burttt's orientation may differ from that of Woodbridge in detail, though not in substance: history is viewed as deeply intertwined with philosophy with both being perceived as the highest forms of critical inquiry.

The second part of our question concerns the strict present-centeredness and specific subject-matter of Burttt's dissertation, seeking a resolution of then current conundrums. Burttt could have written any type of history. Yet, he chose to write a present-centered history of early modern science. What explains this orientation? A first answer to this question emphasizes Burttt's obvious intellectual antecedents, noting a pre-existing problematization regarding the current import of early modern scientific quantification/mechanization. Both Woodbridge and Dewey agree that something truly revolutionary occurred in the 16th and 17th centuries. The former insisted that the revolution is rooted on metaphysical issues, specifically a novel conception of nature; the latter, consistent with his deflationary and dismissive view on abstract intellectual problems that characterize the history of philosophy, maintained that the

mechanization/quantification of early modern science simply reflected the specific values and ideals of scientists. We may also retrospectively mention Randall's remarks. From Randall's viewpoint, the development of early modern science gradually dictated a subordinate role for humanity. Therefore, 19th century idealism is seen as an attempt to circumvent this serious issue. A proper 20th century philosophy should strive to account for the import of human values within the world described by modern science. It should be clear from my summary and analysis of Burt's text that all these intellectual anxieties are present in his specific historical undertaking.

Nevertheless, the more appropriate explanation must again evoke Woodbridge's historiographical perspective. For Woodbridge, an instructive and illuminating history is written as the backward look of present experience. One observes a strongly held belief that an emphasis on the past for its own right is socially irrelevant and without a practical benefit. Hence, Woodbridge's presentist orientation entails two propositions: i) the problems of the present (should) dictate which histories are written; reflexively, ii) the historian's present experience influences her specific historical undertaking. I hold that Burt's *MF* remains the remarkable exemplar of both historiographical tenets. Firstly, early 20th century experience highlights the degraded cosmological significance of the human subject and an increase in the prestige and ontological import of science. These are the realities that must be accepted, overcome, or reconciled in Burt's present. History helps us appreciate how our current state of affairs came about. However, Burt's historical conclusions are articulated in a manner that anticipates future philosophical criticism. The mathematicism of early modern physical science, still pervasive in our own era, is depicted as the ultimate roadblock to our present metaphysical dualisms, namely the reconciliation of mind and world, subject and object, appearance and reality, humanism and naturalism, and so forth.

Moreover, Woodbridge's second historiographical tenet is also satisfied. As this paper argued, Burt's influential history of the scientific revolution was largely shaped by its surrounding context. My own attempt to trace Burt's philosophical presumptions did not reveal a deeply systematic philosophical vision. Instead, I emphasized the heated intellectual issues of Burt's time and drew what I consider to be appropriate connections with his historical undertaking. Still, the subtler claim here is that Burt's history could – or, more appropriately, would – not be written today. Thus, I have presumed that Burt's historical conclusions were neither timeless, nor exhaustive. In the end, from the Woodbridgean standpoint of a historian's multifaceted present experience, *The Metaphysical Foundations of Modern Physical Science* may still be viewed as serving its rightful historical purpose.

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Bibliography

Anton, J. P. (2005) *American Naturalism and Greek Philosophy*, New York: Humanity Books

Burt, E. A. (1925) *The Metaphysical Foundations of Modern Physical Science*, London: Kegan Paul, Trench, Trubner & Co LTD

Burt, E. A. (1960) 'The Core of Dewey's Way of Thinking', *The Journal of Philosophy*, Vol. 57, No. 13, pp. 401-419

Costello, H. T. (1926) 'Review: E. A. Burt The Metaphysical Foundations of Modern Physical Science', *The Journal of Philosophy*, Vol. 23, No. 2, pp. 47-50

Costello, H. T. (1944) 'The Naturalism of Frederick Woodbridge'. In *Naturalism and the Human Spirit*, ed. Yervant H. Krikorian, New York: Columbia University Press

Daston, L. (1991) 'History of Science in an Elegiac Mode: E. A. Burt's Metaphysical Foundations of Modern Physical Science Revisited', *Isis*, Vol. 82, No. 3, pp. 522-531

Dewey, J. (1910) 'The Short-Cut to Realism Examined', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 7, No.20, pp. 553-557

Dewey, J. (1911a) 'Brief Studies in Realism I', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 8, No. 15, pp. 393-400

Dewey, J. (1911b) 'Brief Studies in Realism II', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 8, No. 20, pp. 546-554

Dewey, J. (1920) *Reconstruction in Philosophy*, New York: Henry Holt and Company

Dewey, J. (1925) *Experience and Nature*, La Salle: Open Court

Durant, W. (1917) *Philosophy and the Social Problem*, New York: The Macmillan Company

Durant, W. (1926) *The Story of Philosophy*, New York: Columbia University Press

Eldridge, M. (2004) 'Naturalism'. In *The Blackwell Guide to American Philosophy*, ed. Armen T. Marsoobian and John Ryder, Malden: Blackwell Publishing Ltd

Hildebrand, D. L. (2003) *Beyond Realism and Anti-Realism, John Dewey and the Neopragmatists*, Nashville: Vanderbilt University Press

Hook, S. (1987) *Out of Step, An Unquiet Life in the 20th Century*, New York: Harper and Row

Jewett, A. (2011) 'Canonizing Dewey: Naturalism, Logical Empiricism, and the Idea of American Philosophy', *Modern Intellectual History*, Vol 8, No. 1, pp. 91-125

Jones, W. F. (1983) *Nature and Natural Science: The Philosophy of Frederick J. E. Woodbridge*, New York: Prometheus Books

Koopman, C. (2009) *Pragmatism as Transition, Historicity and Hope in James, Dewey, and Rorty*, New York: Columbia University Press

Koopman, C. (2010) 'Historicism in Pragmatism: Lessons in Historiography and Philosophy', *Metaphilosophy*, Vol. 41, No. 5, pp. 690-713

Krikorian, Y. (ed) (1944) *Naturalism and the Human Spirit*, New York: Columbia University Press

Lamprecht, S. P. (1926) 'Innate Ideas in the Cambridge Platonists', *The Philosophical Review*, Vol. 35, No. 6, pp. 553-573

Lamprecht, S. P. (1927) 'Locke's Attack Upon Innate Ideas', *The Philosophical Review*, Vol. 36, No. 2, pp. 145-165

Lamprecht, S. P. (1935) 'The Role of Descartes in Seventeenth-Century England'. In *Studies in the History of Ideas, Vol. III*, Ed. The Department of Philosophy of Columbia University, New York: Columbia University Press, pp. 181-240

Lamprecht, S. P. (1936) 'Philosophy of History', *The Journal of Philosophy*, Vol. 33, No. 8, pp. 197-204

Lamprecht, S. P. (1939) 'Historiography of Philosophy', *The Journal of Philosophy*, Vol. 36, No. 17, pp. 449-460

Lamprecht, S. P. (1955) *Our Philosophical Traditions, A Brief History of Philosophy in Western Civilization*, New York: Appleton-Century-Crofts Inc.

Lovejoy, A. O. (1908a) 'The Thirteen Pragmatisms. I', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 5, No. 1, pp. 5-12

Lovejoy, A. O. (1908b) 'The Thirteen Pragmatisms. II', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 5, No. 2, pp. 29-39

McGilvary, E. B. (1912) 'Professor Dewey's "Brief Studies in Realism"', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 9, No. 13, pp. 344-349

Montague, W. P. (1909a) 'May a Realist be a Pragmatist?: I. The Two Doctrines Defined', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 6, No. 17, pp. 460-463

Montague, W. P. (1909b) 'May a Realist be a Pragmatist?: II. The Implications of Instrumentalism', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 6, No. 18, pp. 485-490

Montague, W. P. (1909c) 'May a Realist be a Pragmatist?: III. The Implications of Psychological Pragmatism', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 6, No. 20, pp. 543-548

Montague, W. P. (1909d) 'May a Realist be a Pragmatist?: IV. The Implications of Humanism and of the Pragmatic Criterion', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 6, No. 21, pp. 561-571

Moriarty, F. J. (1994) *The Philosophy of E. A. Burtt: The Metaphysical Foundations for a World Community*, PhD diss., University of Adelaide, Politics Department

Perry, R. B. (1912) *Present Philosophical Tendencies, A Critical Survey of Naturalism, Idealism, Pragmatism and Realism Together with a Synopsis of the Philosophy of William James*, New York: Longmans, Green, and Co.

Randall, J. H. (1926) *The Making of the Modern Mind, A Survey of the Intellectual Background of the Present Age*, New York: Columbia University Press

Randall, J. H. (1958) *Nature and Historical Experience, Essays in Naturalism and the Theory of History*, New York: Columbia University Press

Randall, J. H. (1959) 'The Future of John Dewey's Philosophy', *The Journal of Philosophy*, Vol. 56, No. 26, pp. 1005-1010

Randall, J. H. (1961) *The School of Padua and the Emergence of Modern Science*, Padua: Editrice Antenore

Randall, J. H. (1962) *The Career of Philosophy, Volume 1, From the Middle Ages to the Enlightenment*, New York: Columbia University Press

Randall, J. H. (1963) *How Philosophy Uses its Past*, New York: Columbia University Press

Randall, J. H. (1964) *The Career of Philosophy, Volume 2, From the Enlightenment to the Age of Darwin*, New York: Columbia University Press

Randall, J. H. (1977) *Philosophy After Darwin, Chapters for the Career of Philosophy Volume III and Other Essays*, New York: Columbia University Press

Ryder, J. (ed) (1994) *American Philosophic Naturalism in the Twentieth Century*, New York:

Prometheus Books

Schneider, H. W. (1928) *Making the Fascist State*, New York: Oxford University Press

Schneider, H. W. (1946) *A History of American Philosophy*, New York: Columbia University Press

Shea, W. M. (1975) 'Frederick Woodbridge: Experience and Idea', *The Thomist: A Speculative Quarterly Review*, Vol. 39, No. 4, pp. 712-726

Shook, J. R. (1995) 'John Dewey's Struggle with American Realism, 1904-1910', *Transactions of the Charles S. Peirce Society*, Vol. 31, No. 3, pp. 542-566

Strong, E. W. (1936) *Procedures and Metaphysics, A Study in the Philosophy of Mathematical-Physical Science in the Sixteenth and Seventeenth Centuries*, Berkeley: University of California Press

Strout, C. (1958) *The Pragmatic Revolt in American History: Carl Becker and Charles Beard*, New Haven: Yale University Press

Villemaire, D. E. D. (2002) *E. A. Burt, Historian and Philosopher, A Study of the author of the Metaphysical Foundations of Modern Physical Science*, Dordrecht: Springer Science+Business Media

Woodbridge, F. J. E. (1907) 'Naturalism and Humanism', *The Hibbert Journal*, Vol. 6, No. 1, pp. 1-17

Woodbridge, F. J. E. (1908) 'Perception and Epistemology', In *Nature and Mind* [pp. 346-364]

Woodbridge, F. J. E. (1913) 'The Deception of the Senses', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 10, No. 1, pp. 5-15

Woodbridge, F. J. E. (1916) *The Purpose of History*, New York: Columbia University Press

Woodbridge, F. J. E. (1917) 'Structure', *The Journal of Philosophy, Psychology and Scientific Methods*, Vol. 14, No. 25, pp. 680-688

Woodbridge, F. J. E. (1921) 'Mind Discerned', *The Journal of Philosophy*, Vol. 18, No. 13, pp. 337-347

Woodbridge, F. J. E. (1926) *The Realm of Mind, An Essay in Metaphysics*, New York: Columbia University Press

Woodbridge, F. J. E. (1929a) *The Son of Apollo, Themes of Plato*, New York: Houghton Mifflin Company

Woodbridge, F. J. E. (1929b) 'The Promise of Pragmatism', *The Journal of Philosophy*, Vol. 26,

No. 20, pp. 541-552

Woodbridge, F. J. E. (1937) *Nature and Mind, Selected Essays of Frederick J. E. Woodbridge*, New York: Columbia University Press

Woodbridge, F. J. E. (1965) *Aristotle's Vision of Nature*, Edited with an Introduction by John Herman Randall, Jr., New York: Columbia University Press

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