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Chapter 3: Whig History and Anachronism in History of Science

3.1 Whose Nature?

We are dealing in this thesis with the question of what role nature can play in history of science. Inescapably, then, we have to deal with the question *whose* nature we are talking about. Is it our own ideas about nature that inform our explanations and interpretations of past science?

For if that is the case, are we not assuming the superiority of our own ideas about nature and making this superiority an essential interpretive device in our historical interpretation? In general, what legitimate and illegitimate uses can we make of our own concepts and beliefs? Can we say that Aristotle was a biologist, or that Galileo was a scientist? Can we talk about electrons in a historical account of the discovery of electrons *before* the time they were discovered? Or is this anachronistic, presentist, or Whiggish, and is it not inextricably connected to the kind of scientists' history that historiography of science needs to leave behind?⁷⁴

The avoidance of Whiggism seems to be solidly ingrained in the ethos of the historian of science, but precisely this term is, as Peter Dear and Sheila Jasanoff have noticed, rather "loosely defined".⁷⁵ When historians accuse each other of Whiggism (which does not happen often in journal articles, and when it does, usually in reviews),⁷⁶ the term is used in a slightly different way each time: for denoting the tendency of interpreting the earlier works of scientists "through the lens" of their later works;⁷⁷ as a qualification for a history in which "everything is seen as contributing to the great march forward" and where deviations from that path are treated as "mere digressions or [...] reinterpreted from today's perspective";⁷⁸

⁷⁴ On the supposed connection between Whig history and scientists' history, see Forman (1991, 78) and the quotes in section 1.4. That the historical relations between innovations in history of science and the contributions of scientists to the discipline are rather less straightforward is made clear by Mayer (2000; 2004).

⁷⁵ Dear and Jasanoff (2010, 771). Dear and Jasanoff associate the fear of Whiggishness with the fear of anachronism.

⁷⁶ Alvargonzález (2013, 86) says that the Whig label "brands a deep stigma", but without providing examples of this stigma. It is in my interest as well to uphold that Whiggism and its connotations play an important role in policing the boundaries of historiography of science (and I do believe that this is the case), but it is also worth pointing out that its workings are not always easy to trace in print. Rickles (2011), nevertheless, is an example where the accusation of Whiggism figures in a (not unjustified) strong denunciation of the reviewed work (409-410), together with accusations of factual error and plagiarism.

⁷⁷ White (2005, 129).

⁷⁸ French (2006, 191).

as a history where projects fail owing to “ignorance and lack of understanding”;⁷⁹ and as “manifest destiny history”⁸⁰ – the last case, interestingly, used in a review by Ian Hacking to make the case that an author who calls his history “Whig” actually is not one. What further complicates matters is that the label of ‘Whig’ historian is sometimes worn with pride, as a way of dismantling what is perceived as too crude a weapon with which to attack one’s opponents.⁸¹

In this chapter, we will unpack some of the intuitions and theses associated with the notion of Whig history, starting with a short discussion of its classical formulation by Herbert Butterfield (section 3.2), and evaluating later treatments by theorists in history of science and continuing to analyze the issues of anachronism, progress and presentism separately. It will be argued that the issue of anachronism is a real one (section 3.3); that the judgment that science exhibits cumulative progress, which has been used by some authors to justify presentism in history of science, does not in fact support this aim (section 3.4); but that the problem of anachronism itself does not justify a general anti-presentism (section 3.5).

The chapter culminates in a proposal to think of our historical categories as themselves developing path-dependently in dialogue between our pre-existing beliefs and our sources.

3.2 Whig History According to Butterfield

Herbert Butterfield’s *The Whig Interpretation of History* is a sustained plea to look at the past with the eyes of the past, rather than subordinating it to present perspectives and judgments.⁸² The text is essayistic and its claims are argued for in a loose manner, and any selection of the main feature of Whig history as defined by Butterfield can itself only be an interpretation – or, in Butterfield’s view, a ‘Whiggish’ abridgment. Nonetheless, we will try to identify some recurring themes.

What Whig history is, and does wrong, is that it studies the past with direct reference to the present,⁸³ while “real historical understanding is not achieved by the subordination of the past to the present, but rather by making the past our present and attempting to see life with the eyes of another century than our own.”⁸⁴ This we will define as the problem of *presentism* here: the, in Butterfield’s view, mistaken belief that our present beliefs and categories can genuinely enlighten the past, when actually they ought to be left at the door when we start doing historiography. Related to the vice of presentism is the

⁷⁹ Barnes (2006, 384). Barnes consciously uses the label of Whiggism in a slightly unconventional context, since in the book under review, it is precisely the scientific experts whose project fails because of a lack of understanding.

⁸⁰ Hacking (2004, 463).

⁸¹ Mayr (1990, 301); Bod (2010, 479); Alvargonzález (2013).

⁸² Butterfield ([1931] 1959, 14).

⁸³ Butterfield ([1931] 1959, 11-13).

⁸⁴ Butterfield ([1931] 1959, 14).

abstraction of things from their historical context;⁸⁵ this abstraction entails selection and abridgment, which implies a failure to do justice to the complexity and unpredictability of the past.⁸⁶ “All history must tend to become more whig in proportion as it becomes more abridged.”⁸⁷

Whig history also defines and judges events and persons in reference to their relation to *progress*. This is connected to the mistake of presentism – it is the failure to see that in past conflicts, all parties are alien to us, and that the quarrels of 16th-century Protestants and Catholics are “as unrelated to ourselves as the factions of Blues and Greens in ancient Constantinople.”⁸⁸ But it also rests on a mistaken idea that value judgments can be part of history at all.⁸⁹

By making distinctions in the past that make sense only from a present-day perspective, and especially by attempting to reduce what happens in the past to ‘deeper’ causes,⁹⁰ we try to add to the locality and concreteness of the past, and these additions can only lead to error. For instance, “the Whig historian is apt to imagine the British constitution as coming down to us safely at last, in spite of so many vicissitudes; when in reality it is the result of those very vicissitudes of which he seems to complain.”⁹¹ Here the point seems to be a kind of *anachronism*: the Whig historian thinks he can see the outlines of the British constitution when it is in fact not there. The error of anachronism is closely related to the error of presentism: by imagining that the present-day British constitution has a history-transcending status that allows it to cast light upon a 16th century in which in fact it did not exist, the historian makes an error.

Modern categories are of no use in understanding. If we are to understand history, we are to leave the present behind and immerse ourselves completely in the complexity and strangeness of the past. Anything short of this will lead to historical errors and undue claims of progress. In the following sections, we will deal with the issues of anachronism, progress, and presentism and selectivity separately, and see that their relations are not as tight as Butterfield suggests.

3.3 Causal and Conceptual Anachronism

Our first problem is that of anachronism. Anachronism can denote a kind of historical error that is stronger than a simple factual mistake: saying that a proposition is anachronistic amounts to saying that it not only *was* not the case, but that it *could* not have been the case at the time. Einstein not just *was* not a falsificationist; he *couldn't* have been, since

⁸⁵ Butterfield ([1931] 1959, 30).

⁸⁶ Butterfield ([1931] 1959, 20-24).

⁸⁷ Butterfield ([1931] 1959, 7).

⁸⁸ Butterfield ([1931] 1959, 38).

⁸⁹ Butterfield ([1931] 1959, 117).

⁹⁰ Butterfield ([1931] 1959, 57-58).

⁹¹ Butterfield ([1931] 1959, 41).

falsificationism had not yet been formulated.⁹² Our conception of what is historically possible identifies which claims constitute anachronisms in this sense; in fact, debates about this kind of anachronism can be seen as debates about historical possibility (see also section 2.3).

In practice, the term ‘anachronism’ is also used for something different, namely the application of our own beliefs and concepts to times and places in which those beliefs or concepts were unavailable.⁹³ This has in itself nothing to do with the identification of entities or processes that were impossible at the time, but is rather a historiographical counterpart to the anthropological distinction between ‘etic’ and ‘emic’ descriptions.⁹⁴

For the sake of clarity, then, we need to distinguish between these two senses in which the term is used, which I will here call *causal* and *conceptual* anachronisms. A causal anachronism is, as we defined above, the belief that something was the case that was actually historically impossible; a conceptual anachronism is the application of concepts or beliefs to times in which they did not exist.⁹⁵ (Our definition of conceptual anachronism is not the same as that of presentism; the belief that present categories and beliefs can help us to understand the past, which may rely on historical continuities between past and present beliefs.) I will take for granted that a causal anachronism is always worth avoiding. The question is whether, and under which circumstances, we should avoid conceptual anachronism. Here it is worthwhile to revisit some arguments put forward by Quentin Skinner in his ‘Meaning and Understanding in the History of Ideas.’⁹⁶

Skinner attacks the “anachronistic mythologies”⁹⁷ he identifies in history of ideas in his time: these involve the idea that there are perennial problems that both we and earlier authors are occupied with, and an insistence that the views of the authors we interpret must have remained stable over time, rather than being linked with concrete and time-bound contexts.⁹⁸ Both mythologies lead to an anachronism that has to do with the usage of

⁹² The example comes from Newall (2009, 268-269), who deals with anachronism as a ‘logical fallacy’.

⁹³ Cf. Spelda (2012, 93).

⁹⁴ Cf. Jardine (2004).

⁹⁵ The term ‘conceptual anachronism’ can be found in Poe (1996, 352). In Poe’s classification, it is one of three species of anachronism, and it means “the propensity thoughtlessly to use concepts from our time to describe another” or “a corruption of the use of modern concepts in historical narratives”. Poe’s other two species are ‘determinism’, by which he means something like inevitabilism or fatalism (which for our current purposes we keep distinct from anachronism); and ‘partisanship’, which is “the habit of making moral judgment where none should be made”. It will be clear that, when I use the term ‘conceptual anachronism’, I do not employ either Poe’s classification of anachronism or his definition of this type and its reliance on the psychological state of the historian; I mean all applications of our concepts to times and places at which those concepts were unavailable. A distinction that resembles the current one more closely can be found in Jardine (2000); Jardine (2003) also uses the term ‘conceptual anachronism’.

⁹⁶ Skinner (1969).

⁹⁷ Skinner (1969, 40).

⁹⁸ See also the criticism by Burns (2011) that Skinner overlooks the possibility of historical continuities between earlier and later terms and concepts.

concepts. This leads to historical error when, for instance, a historian of the English Revolution interprets the Levellers' concern with the extension of the right to vote as an argument for democracy, and applies his own paradigm of a democracy – a liberal democracy including general (male) suffrage and “some anachronistic concept of ‘the welfare state’” – to the beliefs of the Levellers.⁹⁹

We can see that this would indeed be wrong, but what precisely goes wrong, and what does it have to do with conceptual anachronism? When are anachronistic descriptions misleading? Skinner's criterion is rather interesting: his point turns out to be that an account of “an agent's behavior” cannot survive the criticism that it is “dependent on the use of criteria of description and classification not available to the agent himself.”¹⁰⁰ This, in fact, goes beyond an indictment of anachronism, to a point where all sociological or psychological explanations become illegitimate. Skinner's point seems to be more about agency or action, which is (again, according to him) by definition about more or less conscious intention and which for that reason needs to be understandable in terms available to the consciousness of the agent.¹⁰¹ When Skinner satirizes that a “fourteenth-century anti-papalist pamphleteer can scarcely have been *intending* to contribute to an eighteenth-century French constitutionalist debate”,¹⁰² his primary enemy is not anachronism, but an improper view of what it means to understand someone's actions at all.¹⁰³

In keeping with the spirit of his intentions, we ought to be careful not to read Skinner as trying to answer our problems – his problem is, in the end, not primarily that of anachronism but of the possibility of treating doctrines as “self-sufficient object[s] of inquiry and understanding”.¹⁰⁴ This means that if we abstract from his arguments about agency, Skinner actually delivers rather little in the way of arguments against conceptual anachronism as such.

But we do see how such an argument might get off the ground: by showing that there is, not just a psychological, but a stronger relation between conceptual anachronisms and causal anachronisms, such that the use of a conceptual anachronism will always amount to a causal anachronism (which it does under Skinner's assumption about historical

⁹⁹ Skinner (1969, 27).

¹⁰⁰ Skinner (1969, 29).

¹⁰¹ This distinguishes Skinner's view on linguistic conventions from that of Pocock (1985), in whose view language goes further in determining the intentions and the boundaries of the actors' possibility to act. See also Bevir (2009), who describes how in practice, Cambridge contextualism has let go of Skinner's and Pocock's methodological prescriptions in favor of a ‘broad historicist sensibility’ (222).

¹⁰² Skinner (1969, 29).

¹⁰³ See also McIntyre (2008, 154-155), and Martinich's (2009) painstaking but ultimately unconvincing distinction between four kinds of meaning in Skinner's theory of interpretation: in particular, Martinich's claim that historians are interested primarily in ‘significance’ rather than communicative meaning, and the claim that Skinner conflates these two, are respectively doubtful and belied by Skinner (1969, 23), though indeed Skinner's talks in a rather eclectic way about meaning. See also Skodo (2009, 311-313).

¹⁰⁴ Skinner (1969, 31). See also the critical discussion by Lamb (2009).

understanding). This seems to be the case everywhere where the possibility of a certain practice or action is dependent on the availability of a certain concept.

Ian Hacking has made this case in detail for concepts in psychiatry, such as child abuse, attention deficit hyperactivity disorder (ADHD) or multiple personalities.¹⁰⁵ His position, which he has dubbed 'dynamic nominalism' to signify that the categories created by people are not fixed and to distance himself from an anti-realist nominalism, is that there are kinds that come into being together with the concepts that denote them.

The claim [...] is not that there was a kind of person who came increasingly to be recognized by bureaucrats or by students of human nature, but rather that a kind of person came into being at the same time as the kind itself was being invented. My claim about making up people is that in a few interesting respects multiple personalities (and much else) are more like gloves than like horses. The category and the people emerged hand in hand.¹⁰⁶

It is not just a matter of semantics; not just that under our descriptions, someone in the 19th century is a child abuser while under 19th-century descriptions he is not. The point is that even under our own concepts, it is not clear that someone could be a child abuser in a society or culture that lacked the corresponding concept.¹⁰⁷

Hacking's claim is not logical, but causal; his point about ADHD, for instance, is that it is an 'interactive kind'. The existence of the category in a society influences the people that fall under this category, possibly because of their awareness of this category but also because of institutions whose existence depends on the category and which are influencing the behavior of the people denoted by the category.¹⁰⁸ The phenomena that ADHD refers to could not have taken their precise shape without the category of ADHD. Whether this is the case for a specific category depends on what it denotes; Hacking does not say that all categories are interactive kinds.

The two kinds of anachronism approach each other more when the phenomenon a concept refers to has specific causal relations to the existence of that same concept in society. Whether this is the case depends on what we mean by our concepts and on our causal beliefs. For instance, if homosexuality necessarily (by definition or with regard to the conditions for its existence) involves the existence of a specific social role for the homosexual, there is a mistake in calling classical Greek pederasty homosexual: it would suggest that ancient Greece had this social role, and mistakenly identify ancient Greeks as homosexuals. By contrast, if the causal explanation of homosexuality is just about genes, identifying ancient Greeks as homosexuals may be conceptually anachronistic but, properly understood, causally impeccable.

¹⁰⁵ Hacking (2000b, 125-162; 2002, 51-72, 64-69, 99-114).

¹⁰⁶ Hacking (2002, 106-107).

¹⁰⁷ Cf. Gustafson (2010, 311-316).

¹⁰⁸ Hacking (2000b, 100-124).

Making the case that some proposition is causally anachronistic depends in each case again on our present beliefs about which things are interactive kinds. We see an example of this when Andrew Cunningham, in line with his thesis on the ‘modern origin of science’,¹⁰⁹ argues that it was impossible for pre-modern thinkers to be scientists. Science, he argues, is an intentional, game-like activity that someone cannot take part in without knowing it. Pre-modern thinkers knew themselves to be doing natural philosophy, which was an activity directed not primarily at knowing nature but rather at knowing God in nature. Calling Aristotle or 17th-century natural philosophers scientists misidentifies what they were doing, since they *could not* have been scientists in a period where that concept was not available.¹¹⁰

Cunningham phrases his argument in anti-presentist terms – he says that our misjudgment of past natural philosophy flows from an inability to “get out of the present” that the historian ought to overcome in some way.¹¹¹ I believe this misconstrues the problem, and this is illustrated by Cunningham’s ensuing debate with Peter Dear. Dear accuses Cunningham of essentialism, since natural philosophy was not necessarily defined by its link to God, while 19th-century science could still, albeit in different senses, be about God.¹¹² In his response, Cunningham effectively bites the bullet, saying that as far as he is concerned, natural philosophy and science have essential characteristics without which they cease to be natural philosophy and science, respectively.¹¹³

If anything, this shows the extent to which Cunningham’s own thesis depends on the validity and applicability of his present distinctions. The ‘essences’ he consciously provides are helpful in identifying whether someone in the past was a philosopher or a scientist or neither, and in spelling out Cunningham’s thesis that the proposition that there were scientists before the 19th century constitutes what we here call a causal anachronism; but this distinction is itself something in the present.

It turns out that what is at stake in a controversy like this is not the question of which side is more ‘presentist’ and therefore more in the wrong, but rather the combined semantic and substantive issues of what we mean by science, and of what we believe people in the past did or did not do, and could or could not have done. The problem of when conceptual anachronisms constitute causal anachronisms is real, but it is hardly soluble in general terms, any more than the problem of ‘avoiding historical error’ is. If we take Whiggish history to mean a consciously liberal attitude towards causal anachronism, it does not exist.

¹⁰⁹ Cunningham and Williams (1993).

¹¹⁰ Cunningham (1988, esp. 373–386).

¹¹¹ Cunningham (1988, 367).

¹¹² Dear (2001).

¹¹³ Cunningham (2001).

3.4 Progress and Scientific Exceptionalism

In the light of Butterfield's remarks against Whig history, it seems ironical that when Butterfield himself turns to history of science ("in order to try to set that subject on its feet"),¹¹⁴ he seems to commit a lot of Whiggish sins. He identifies the scientific revolution as "the real origin both of the modern world and of the modern mentality"¹¹⁵ and tells a lot of smaller origin stories (with 'steps towards' certain outcomes) within this framework.¹¹⁶ He looks at the history of science on a large scale: a period of five centuries, to which he ascribes a high measure of unity and continuity.¹¹⁷ He explicitly judges scientific theories in relation to the current state of science, and even sees it as an important task of history of science to draw attention to "the intellectual obstruction which, at a given moment, is checking the progress of thought – the hurdle which it was then particularly necessary for the mind to surmount".¹¹⁸

The irony has been noted by others,¹¹⁹ and been used to discredit Butterfield's argument against Whig history specifically for history of science: didn't this prove that it was impossible for the historian *not* to believe in the progress of science? This is the conclusion that Rupert Hall draws: compared to other branches of history, the historian of science distinguishes himself by actually knowing the right answer to the problems that past scientists were breaking their heads over. "Rightness and wrongness over matters like the velocity of light, the oxides of nitrogen or the charge on an electron have *in the long run* nothing to do with the theories or even the frailty, error, or inconsistency of the original investigator. [...] Thus, it seems to me, the Whiggish idea of progress has inevitably to be built in the history of science."¹²⁰ Ernst Mayr gives a similar reason for why the label of Whig history was inapplicable to history of science: change in science is different from change in politics, because of its more obviously cumulative character.¹²¹ More recently, the point has been made by David Alvargonzález that history of science may be 'essentially' Whiggish because of the progressive nature of science.¹²²

I believe this line of answer to Butterfield fails, for several reasons. First, it can be undermined by the contention that scientific knowledge is not, in fact, progressive –

¹¹⁴ Butterfield in a letter to the historian R.F. Treharne, 21 July 1947, as quoted by Bentley (2012, 188). Bentley explains that Butterfield intended to save history of science from the whiggish perspectives of scientists (189).

¹¹⁵ Butterfield ([1949] 1957, 8); cf. also Butterfield ([1931] 1959).

¹¹⁶ E.g. Butterfield ([1949] 1957, 13, 56, 57, 221).

¹¹⁷ Butterfield ([1949] 1957, 7, 203).

¹¹⁸ Butterfield ([1949] 1957, 204). Cf. also e.g. Butterfield ([1949] 1957, 15, 42, 54-55).

¹¹⁹ E.g. Hall (1983, 58); Wilson and Ashplant (1988, 3-4); Ashplant and Wilson (1988, 253), Henry (2002, 4); Carr (1961, 35-36).

¹²⁰ Hall (1983, 56-57).

¹²¹ Mayr (1990, 302).

¹²² Alvargonzález (2013, esp. 90-94). Alvargonzález is more careful about attributing progress to the social sciences, and says that this also poses a difficulty for the discussion of Whiggism in their history (94).

drawing us into a debate that belongs primarily to philosophy of science, rather than (philosophy of) historiography of science. In order to substantiate our claims about scientific progress, for instance, we have to decide what is of primary importance when we want to measure whether science has progressed, and we have to decide when progress counts as cumulative.

Second, it is very well possible that science in general manifests progress according to some measure, but that this progress is a contingent rather than a necessary fact about science. If things could have gone otherwise, our present-day beliefs about science do not have a status that significantly differs from our beliefs about other things, which may, after all, also have progressed on some scale. Thus, the question of the legitimacy of presentism here becomes connected to the question of the inevitability or contingency of scientific beliefs. Hall means to say that unlike in other areas, in science we would ‘in the long run’ always have ended up giving the same answers we do now. But this is not just belief in progress in the actual history of science; it is scientific inevitabilism as defined in the previous chapter. There is indeed a plausible connection between conceptual presentism and inevitabilism, though it is based on considerations not concerning the avoidance of anachronism but rather concerning the avoidance of circularity, as we will see in section 5.3.4.

This route also brings us into a minefield of demarcation issues. For each new interpretation or explanation of an episode in the history of science, we would have to establish first that it is genuinely *science*, in the sense of: part of a necessarily progressive inquiry series. This fits ill with the fact that historians generally try to historicize and contextualize not just scientific theories, but the very boundaries between science and non-science.

Third, as an answer to Butterfield, the thesis that science is necessarily progressive, even if demonstrably true, misses the point. When Butterfield forbids us to talk about progress in political history, he does not forbid us to say that we would rather live in his 20th-century Britain than in the 16th century, or even to be confident that on some scale there has been evident progress; his point is that saying this now does not add anything to our understanding of what happened in the past. The progress in question is not a 16th-century actor’s category; it is something *we* say, and something we say only as a result of history. In no way can such a statement be regarded as doing justice to the past on its own terms. When we say “progress” where the historical actors didn’t, we are, according to Butterfield, doing something other than history.

The truth is that [...] historical explaining does not condemn; neither does it excuse; it does not even touch the realm in which words like these have meaning or relevance; it is compounded of observations made upon the events of the concrete world; it is neither more nor less than the process of seeing things in their context.¹²³

¹²³ Butterfield ([1931] 1959, 117).

It is important that though Butterfield clearly treated the history of science as one of progress, he tried to shake off presentism and anachronism in history of science as well as in any other field of history.¹²⁴

Our response to Butterfield's radical historicism, then, can never be that history of science is special because it turns out to manifest progress, no matter how subtle and nuanced our conception of this progress may be.¹²⁵ If we disagree with Butterfield's point that judgments about progress need to be avoided in historiography because they are conceptually anachronistic and *all* conceptual anachronism needs to be avoided, then our disagreement stretches to political history as well as to history of science.

3.5 Selection and Presentism

The critics of Butterfield mentioned in the previous section seem to be on strong ground not on the issue of progress, but on the issue of selectivity. Perhaps Butterfield's insistence, stated emphatically in *The whig interpretation* but also in that apparently Whiggish *Origins of modern science*, that we should never abridge because "all history must tend to become more whig in proportion as it becomes more abridged",¹²⁶ that we should look through a microscope,¹²⁷ is itself a plea for the unattainable. As Hall comments, "I am not confident that the 'concrete facts' seen through the microscope assemble themselves a-theoretically into 'explanations', whether one examines cells or the French Revolution."¹²⁸ This argument for the inescapability of selection and abstraction can be turned into an argument against Butterfield's anti-presentism: it does not really make sense to publish a book as its own translation, David Hull says,¹²⁹ and similarly present-day concerns can be used responsibly when we want to make sense of the past for the present.

Maybe Butterfield's intuition that some history-writing gets the relation between the present and the past wrong is correct, but his diagnosis of why this is the case is not. This is what that A. Wilson and T.G. Ashplant argue in a two-part article on Whig history. They follow Hall (as I do) in his criticism that selection is inevitable and should be non-arbitrary,¹³⁰ and go on to reformulate where, according to them, the problem of Whiggism actually begins: for Butterfield, the Whig fallacy is the principle of "direct reference to the present", that is, "with one eye on the present";¹³¹ another way of interpreting it, which Butterfield's choice of words sometimes suggests and which Wilson and Ashplant explicitly

¹²⁴ E.g. Butterfield (1950, 56-57).

¹²⁵ See e.g. Arvagonzález (2013, 90-93).

¹²⁶ Butterfield ([1931] 1959, 7).

¹²⁷ Butterfield ([1949] 1957, 8).

¹²⁸ Hall (1983, 51). Cf. Watson (1986, 21-22).

¹²⁹ Hull (1979, 7-8).

¹³⁰ Wilson and Ashplant (1988, 6-9).

¹³¹ Wilson and Ashplant (1988, 10).

embrace, is the problem that historians are “*with both eyes in the present*”,¹³² that is, “constrained by the perceptual and conceptual categories of the present, bound within the framework of the present, deploying a perceptual ‘set’ derived from the present.”¹³³ This predicament can lead to misunderstandings that do not disappear simply because of a closer look at the sources: “present-centred categories can well survive the experience of research, for that research can be subordinated to those categories.”¹³⁴

Wilson and Ashplant are thinking of cases in which an explanatory *asymmetry* is made between beliefs in the past that resemble modern beliefs and therefore require no explanation, and beliefs in the past that do not resemble modern beliefs and therefore do require explanation. For example, assuming a present-day contrast between science and superstition, reason and magic and reading such a contrast into the past will lead to an unbalanced view, in which astrology and belief in ghosts in the 17th century require more explanation than rationalism or skepticism.¹³⁵ That this attitude tends towards a mistaken view of history is evident from the fact that the history of science has precisely turned out to undermine a dichotomy between science and magic in the 17th century, Wilson and Ashplant say. “An adequate understanding of the thinking of seventeenth-century men and women requires that we go beyond our own initial present-centredness.”¹³⁶ We are on the terrain of historiographical virtues and vices again, and presentism tends to lead us astray.

This is a convincing example, but let us proceed carefully. What this example shows is how, from the perspective of a present-day scholarly consensus about the relation between science and magic in the 17th century, other scholarly beliefs about this relation look like a conceptual and possibly a causal anachronism. Now, the point is not to argue against the judgment that these earlier beliefs constituted an anachronism; it is rather that this judgment is based on semantic and causal beliefs – beliefs about what science and magic mean and about how the things they refer to actually related in the 17th century.

Saying that distinguishing between science and magic is an instance of anachronism only establishes disagreement about the meaning of concepts and the modal structure of history; it does not establish that this disagreement follows from the fact that one side is ‘present-centered’. The fact that Joseph Agassi, in a 1963 invective against presentism in history of science, chastised other historians precisely for *failing* to apply a distinction between science and magic, illustrates this.¹³⁷

How could scholars become aware that their categories did not match those of the sources? One possible answer is that the scholar always ought to acquire his categories from

¹³² Wilson and Ashplant (1988, 10).

¹³³ Wilson and Ashplant (1988, 10).

¹³⁴ Ashplant and Wilson (1988, 261). But cf. also Abadía (2009, esp. 65-69).

¹³⁵ Ashplant and Wilson (1988, 257-260). The historical work here criticized by Ashplant and Wilson is Keith Thomas’ *Religion and the decline of magic*. Here Thomas Hobbes is one of the thinkers whose ideas resemble present-day opinions closely enough not to require explanation (258).

¹³⁶ Ashplant and Wilson (1988, 260).

¹³⁷ Agassi (1963, 11).

the sources. This approaches Butterfield's solution of shunning all abridgment. After all, it is when we fill in the gaps in our source material with our own beliefs and according to our own categories that we start committing conceptual anachronisms and thereby (according to Butterfield) historical errors. Wilson and Ashplant are right that this is a misdiagnosis: present-centered categories are unavoidable and can survive research, and therefore empirical research will not simply and autonomously erase them.¹³⁸

Another possible answer is that the historian ought to have been aware all along that categories like science and magic are not cultural universals. When someone says that Aristotle was a 'biologist', the problem is not just that she has not studied the sources closely enough, but rather that she forgets that the notion of biologist is embedded to such an extent in specific and historically contingent institutions and practices that it is highly unlikely that the term could be applied to classical Greece at all without being severely misleading.¹³⁹ There is a gap between our category system and that in which the historical evidence was produced, and Wilson and Ashplant say that the historian needs to be "first aware of that gap"¹⁴⁰ – though even then, present-centeredness is inherent in historical research, which is therefore inherently problematical.¹⁴¹

I believe this is too pessimistic. A more dialectical relationship between categories and sources is at least possible. It is conceivable that we approach 17th-century sources with the assumption of a clear distinction between science and magic, but that what we find in the sources does, if not unequivocally falsify the applicability of this distinction, at least contradict some of the expectations that accompany it: the expectation, for instance, that science and magic will be practiced by different persons in the 17th century, or be connected to different social roles. If we find that enough of our implicit expectations are contradicted, we can proceed to revise some of our assumptions. One of the ways in which we can do that may turn out to be letting go of the opposition between science and magic.

In this particular case, our knowledge that the distinction between science and magic is both a conceptual and a causal anachronism (since science and magic are interactive kinds and since they are not so clearly distinct in the 17th century) has been made possible by historical study of the 17th century. Far from providing, as Peter Dear has called it, an illustration "of the fallacies that can result from [...] hermeneutic circularity",¹⁴² it is better to say that Wilson and Ashplant's narrative puts hermeneutic circularity in a positive light, where from the dialogue between our original categories and the historical sources there follows a change not just in our view of the sources, but also in our own categories. We *do* get beyond our initial present-centeredness, but we do so only because it is challenged by

¹³⁸ Ashplant and Wilson (1988, 266-267).

¹³⁹ Jardine (2000, 259-265).

¹⁴⁰ Wilson and Ashplant (1988, 13).

¹⁴¹ Wilson and Ashplant (1988, 16).

¹⁴² Dear (2012b, 51).

historical research – research to which we bring our present beliefs and categories, in the knowledge that they are revisable and that history bears on them.

This attitude differs from Butterfield's empiricism or historicism and from presentism, and may be aptly called hermeneutic: it recognizes that present and past 'horizons' differ, but assumes that the past is not completely alien and that we can build on continuities between it and the present in order to bridge some of the gaps between it and ourselves.

3.6 Avoiding Anachronism in a Changing Present

From the preceding, we can draw some general conclusions about Whiggism in history of science, bringing together the separate strands of anachronism, progress, and selectivity and presentism.

Butterfield is mistaken in his suggestion that all selection and abstraction proceeding from a present-day perspective are necessarily wrong, but the reason is not, as has often been claimed, that in history of science the present-day perspective is especially privileged thanks to scientific progress, and therefore better equipped for looking back than present-day perspectives in other fields. Nor is it the case, as Wilson and Ashplant suggest, that bringing our present-day categories to historical research is always a hindrance to understanding, and one that the historical sources cannot modify. The confrontation with historical sources can modify our categories, and those categories are what we understand history with.

There are instances in which our categories are conceptually anachronistic, which can become instances of historical error when the categories in question are interactive kinds in Ian Hacking's sense. In those cases, our conceptual anachronisms may spill over into causal anachronisms – leading us to believe that there were scientists in a period where there could not have been, for instance. But recognizing this causal anachronism (if it is one) results from insight into the extent to which 'scientist' is an interactive kind combined with familiarity with the sources; not from a general insight in the wrongness of presentism. Dear's and Cunningham's disagreement about the usage of the term 'scientist' underlines this.

Other examples abound. When Thomas Kuhn advises that in so far as possible, the "historian should set aside the science that he knows" and should learn it from the sources,¹⁴³ or when Collins and Pinch claim that "we shall not understand the Pasteur-Pouchet debate as it was lived out unless we cut off our backward seeing faculty",¹⁴⁴ these

¹⁴³ Kuhn (1968, 76). Interestingly, Kuhn also says in the same paragraph (77) that "the historian should pay particular attention to his subject's apparent errors, not for their own sake but because they reveal far more of the mind at work than do the passages in which a scientist seems to record a result or an argument that modern science still retains" – a present-centeredness that immediately contradicts the idea of setting aside the science that the historian knows.

¹⁴⁴ Collins (1993, 85).

remarks stem from aspects of a historiographical ethos that they share with Butterfield and Cunningham, which exaggerates both the dangers of presentism and the promises of empiricism. In fact, presentism does not automatically lead to causal anachronism, and it is not necessarily based on the assumption of inevitable progress.

Our own categories and beliefs will always be something of the present, and though historians rightly avoid causal anachronism, the identification of causal anachronism depends on those categories and beliefs. But our present changes, and its beliefs and categories may be modified as a result of historical knowledge. This is as it should be; after all, we cannot be expected to know of any phenomenon *a priori* whether or not it could be culturally universal – it is precisely because of historical (or, for that matter, anthropological) knowledge that we can assess the range of diversity between human cultures; it is precisely because we have been confronted with knowledge about past societies that we have come to believe some practices to be contingent that we might otherwise have considered natural and inevitable. If historiography plays this role for science, this is only for the better.

3.7 Conclusions

What do these considerations imply for the role our beliefs about nature can play in historiography of science, as far as the problems of Whiggism in the sense of presentism, anachronism, and triumphalism (in the sense of belief in inevitable progress) are concerned? We can draw the following conclusions:

- 1) The question we need to ask when we involve natural entities in historical accounts, is whether the involvement of these entities constitutes a causal anachronism. We have seen that this may, generally speaking, be the case under the assumption that natural entities, too, can be interactive kinds in Hacking's sense of the word; that their existence goes hand in hand with the availability of a corresponding concept. In chapter 6, we will see that Bruno Latour holds this position, but unless it turns out that this case can indeed be made in general, there is no reason not to involve natural entities in historical accounts.
- 2) That this is legitimate does *not* depend on scientific exceptionalism: it is not because science manifests progress that presentism with regard to natural entities does not constitute a causal anachronism. It is simply because what constitutes such an anachronism is identified by our present causal beliefs. Thus, there is no anti-presentist default position to which history of science forms the exception.