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How often are theories developed through empirical research into higher education?

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Abstract

This article reports on a review of empirical research published in selected higher education journals in 2008, which was focused on examining how often theories are developed through this research. This review found relatively little evidence of theory development. Drawing on the notions of internal and external languages of description, it is argued that this is partly due to the lack of explicit conceptualisation of the object of research in the writing-up of higher education research and the lack of a discursive gap between the ways in which research objects are conceptualised and the ways in which data are analysed in accounts of empirical research into higher education. In conclusion, four ways of promoting such a discursive gap in the reporting of research are discussed.

Introduction

To the reader of empirical research into higher education, the issue of how theory is used and developed in this research can seem a particularly thorny one. Much of it appears to have little explicit engagement with theoretical resources (Tight 2004) and, where theory is used, it rarely seems to be developed through the research process in a sustained manner over time. Rather the impression given is of a succession of theoretical lenses, the relations between which are not clear and the reasons for the changes in lens very seldom discussed

(see Bernstein 2000 for a discussion of a similar process in sociological research). Thus, for example, in research into teaching, learning and assessment in higher education there have been recent shifts between 'approaches to learning', 'academic literacies', and 'communities of practice' (Haggis 2009) but little discussion of the different strengths and weaknesses of each of these lenses for asking particular types of question (see Ashwin 2009 for my own attempt to develop such a discussion). This can leave the reader with the sense that such changes are more a matter of fashion than of ongoing critical discussion of the most useful ways of conceiving of teaching-learning processes in particular situations. In this article I report on a review of empirical research published in selected higher education journals in 2008, which examined whether this impression had some substance and, if so, to examine some of the reasons for this lack of theory development in empirical research into higher education.

The use and development of theory in empirical research into higher education

The use and development of theory in empirical research has been the source of much debate in educational research, from those who question its usefulness (for example, see Thomas 1997, 2007) to those who argue that it plays an essential role in research (see for example Ball 1995, Anyon et al. 2009). In research in higher education, there has been less discussion of these issues until recently. Where they have been discussed the focus has been either on the extent of theory use and or the type of theory used in research into higher education. In relation to the *extent* of theory use, Tight (2004, p.400), based on a review of articles in non-US higher education journals in the year 2000, argued that over half of the articles were 'wholly a-theoretical' and only around a quarter made explicit use

of theory. This was in contrast to a sample of articles in US Higher Education journals in the same year, in relation to which Tight (2007) argued over half of the articles showed explicit use of theory and around a quarter were a-theoretical. In relation to the *type* of theory used, there have been a number of critiques of the limited range of theories, particularly in relation to research into teaching, learning and assessment in higher education (see for example, Malcolm and Zukas 2001; Haggis 2003, 2009). In this article I argue that there is also a need to consider the *way* in which theory is used in, and developed through, empirical research into higher education.

My interest in the relations between theory and data in empirical research in higher education comes from a concern about the tendency of this research to often appear tautological with theories seeming to over-determine the outcomes of empirical research in higher education (see Ashwin 2009). Whilst this issue has not been discussed extensively in relation to research in higher education, it has been the source of much debate in educational research more generally (for example see Tooley and Darby 1998; Desforges 2000; Gorard 2002, 2004; James et al. 2005; Gorard and Cook 2007; Thomas and Gorard 2007). As James et al. (2005, p.116) argue:

> [T]hroughout the research process, from project conception to the interpretation of results and the presentation of conclusions, there is movement back and forth from data to theory in an iterative sequence of theory testing and theory building. Most important is the development of a disposition of healthy scepticism that encourages researchers to question their own assumptions, to make their theories explicit and to seek alternative ways of making sense of the

> data. The discipline of deliberately seeking and eliminating plausible rival accounts of changes in learning outcomes has a vital role and particular virtue in developing coherent, internally consistent and empirically grounded conclusions.

In the wider educational literature the lack of 'theory building' and the development of alternative ways of making sense of the research outcomes are often presented as methodological problems with a number of methodological devices suggested as promoting 'healthy scepticism'. These include the use of mixed methods (Desforges 2000; Johnson and Onwuegbuzie 2004; Greene 2005; Zembylas 2007; Woolley 2009; Weis, Jenkins and Stich 2009), and the related notion of triangulation (Tooley and Darby 1998). However, in this article I argue that this problem is also connected to the ways in which the relations between theory and data are accounted for in journal articles which report empirical research into higher education.

Using 'Languages of Description' to conceptualise the role of theory in empirical research

My focus in this article is on the extent to which theories are developed through empirical research into higher education. In order to conceptualise this process I draw on Basil Bernstein's notion of languages of description (see Bernstein 2000 and also Dowling 1998; Moore 2001; Moss 2001; Brown 2006). For Bernstein (2000), empirical research involves an internal and an external language of description.

The *internal language of description* is the language of conceptual models, in the terms of this article it is the language of theory. Clearly the word 'theory' can have multiple

meanings. For example it can be thought of in terms of 'Grand Theories' which attempt to offer a full explanation of human experience or history (for a discussion see Skinner 1985) or in terms of individuals' personal theories as in Agryis and Schon's (1974) distinction between 'theory-in-action' and 'espoused theory'. In this article, I focus on how theory is used to inform empirical research and in this context I see 'theory' simply as a way of seeing or characterising a research object (for similar ways of viewing theory see Rajagopalan 1998, Pring 2000). As Bourdieu, Chamberon, and Passeron (1991 p.248) argue:

> "The fundamental scientific act is the construction of the object; you don't move to the real without a hypothesis, without instruments of construction. And when you think that you are without presuppositions, you still construct without knowing it and, in that case, always inadequately".

So in this sense, the internal language of description is about seeing the object of empirical research in a particular way and *not in other ways.* For example, this could involve seeing a teaching-learning interaction as an example of a 'community of practice', an 'activity system' or a 'learning environment' (see Ashwin 2009 for further discussion of these ways of seeing). From this perspective all empirical research involves an internal language of description, whether implicit or explicit, because in order to conduct empirical research researchers need to see their object in certain ways (for a similar argument in relation to research in higher education see Tight 2004).

The *external language of description* is the description that is provided by the empirical evidence generated in the study. I see the external language of description as provided by the outcome of data analysis. It is important to be clear that Bernstein never explicitly characterises it in this way and both Dowling and Brown (2010) and Moore (2001) argue

that data analysis involves a dialogue between the external and internal languages of description. I have adopted this alternative position because if something is going to be seen as a *language* of description, then this implies that it has some systematisation and structure beyond that which is contained within raw data. My view is that data gains this structure through being systematically analysed and I am not convinced this is provided by the sorts of interim analysis discussed by Dowling and Brown (2010).

What Bernstein (2000) usefully argues is that both the internal and external languages of description need to be explicit and related to each other in a non-circular manner. This involves the creation of a 'discursive gap' (Bernstein and Solomon 1999, p.275), which is essential if empirical data are to do more than simply exemplify theory and the 'healthy scepticism' valued by James et al.(2005) is to be promoted. Bernstein (2000) emphasises that moving from the internal language of description to external language of description involves a translation of a theoretical object into an empirical object. Moss (2001, p.18) describes Bernstein's approach in the following way:

> It is the general principles, that which 'makes the data tick', which Bernstein always prioritizes. His way of getting at this was to look at the relations between data. The way the researcher groups the data, and thereby categorizes it through description, makes those relations visible. The relations between categories then point to something else—the underlying rules or principles that generate the particular instance.

This quote is helpful because it highlights one of the major strengths of the notions of the internal and external languages of description. This is that it emphasises that ways of seeing the research object (the internal language of description) are different from ways of organising and analysing data which lead to the production of the external language of description. Clearly the internal and external languages should be aligned with each other, in terms of being based on consistent assumptions about the social world, but the central point is that thinking about data analysis in this way requires an approach that is more than simply the 'identification' of theory within the data. Such an approach would in Bernstein's terms be 'circular', as there would be little or no space for the analysed data to contradict the theory. In this way the data need to have space to knock against the theory. In journal articles this space is usually provided in 'discussion' sections, where the outcomes of the research are brought into relation to the literature in order to discuss their wider significance.

Using the notion of the relations between the internal and external languages of description to examine the development of theory in journal articles based on empirical research involves focusing on: how the research object is conceptualised in the article; how the data are analysed; and how the research outcomes are related to the conceptualisation of the research object. Whilst drawing on Bernstein's (2000) notion of languages of description offers a useful framing of the issues raised in examining the role of theory in empirical research, it is important to recognise that a consideration of these issues are not by any means unique to Bernstein's work. The importance of adopting a position, and the related requirement for reflexivity, is key to Bourdieu's work (as indicated by the earlier quote from Bourdieu, Chamberon, and Passeron 1991) and has been central to many forms of feminist

research (for example see Harding 1987, Stanley and Wise 1993, and more recently Letherby 2003).

Method

My focus in this article is on examining the extent to which theories are used and developed in empirical research into higher education. In order to do this, I undertook a review of journal articles in higher education journals in a particular year. I chose journal articles because these can be seen as being the primary place in which researchers seek to present and justify their research outcomes.

Sample

In order to get a sense of a range of research articles I decided to focus on all the journal articles published in particular higher education journals in a particular year. I initially examined all the articles published in 2008 in the following journals: *Higher Education*, *Higher Education Research and Development*, *Journal of Higher Education*, *Research in Higher Education*, *Review of Higher Education*, *Studies in Higher Education*, and *Teaching in Higher Education*. This selection was based upon Tight's (2007) argument that six of these journals represent the leading specialist higher education journals in North America (*Journal of Higher Education*, *Research in Higher Education*, *Review of Higher Education*) and the leading UK (*Studies in Higher Education*), Australasian (*Higher Education Research and Development*), and the leading non-US higher education journal (*Higher Education*). I added *Teaching in Higher Education* (another UK-based journal) to this list, in line with Haggis's (2009) argument that, compared to *Studies in Higher Education* and *Higher Education*, it can be seen to be more strongly influenced by critical perspectives in Sociology. As such, it was included because it seemed that it might include a slightly different range of approaches to

relating theory and method in higher education journals. In this article, I refer to the North American journals as 'US journals' and the other four journals as 'non-US journals'. Whilst this categorisation may be seen as privileging the three North American journals, the intention behind it is to allow some comparison with Tight's (2007) analysis of the differences between North American and UK, European and Australasian specialist higher education journals.

Data analysis

The journal articles were initially sorted in terms of whether they focused on empirical data. This was informed by my focus on the relations between theory and empirical data. Initially 292 articles were identified (211 in the non-US journals and 81 in the US journals), book reviews were not included in this initial sample. When those articles that did not deal with empirical data were removed (for example extended literature reviews), this left 220 articles to be analysed. These articles were initially analysed in terms of their overall methodological approach. They were seen as quantitative if they analysed their data as numerically, qualitative if they analysed their data as a form of text, and mixed if they employed both of these approaches. Table 1 summarises these data for the non-US and US journals and indicates that the non-US sample had more qualitative and the US sample more quantitative articles.

TABLE 1 ABOUT HERE

Based on my conceptualisation of the internal and external language of description I then analysed the way in which each article used theory to inform: 1) the conceptualisation of

the research object; 2) the approach to data analysis; 3) the discussion of research outcomes. Table 2 sets out the categorisation that was developed through an iterative process of examining the articles and developing the system of categorisation. In developing this system, I was focused on describing the different approaches with as few categories as possible. For example under 'the use of theory to conceptualise the research object', I developed nine categories from my initial reading of the articles and this was reduced to four by examining the overlap between the different categories.

TABLE 2 ABOUT HERE

The key difference with Tight's (2007) approach was that rather than taking the use of the words 'theory', 'model' or 'concept' as evidence of the use of theory, my focus was on whether the article appeared to set out a clear position from which the research object was conceptualised, the data analysed and the outcomes were discussed.

Caveats and potential misunderstandings

In developing my argument through this article, there are a number of caveats and potential misunderstandings of this argument that I want to address before I discuss the outcomes of this study. First, it should be clear by now that I am examining how research is accounted for in specialist higher education journal articles rather than having direct access to the research process. There is an extensive and rich literature about the differences between scientific practices and how these practices are presented in the reporting of research (for example see Latour and Woolgar 1986 and Latour 1987). In recognising this, it is important to be clear that journal articles are particular types of texts that seek to achieve particular

tasks. My assumption is that whilst the research process is very often messy and involves an iterative movement between theory and data, in the writing up of research the intention is to give the reader access to the way in which the object of the research had been conceived, the ways in which data had been analysed, and the significance of the research outcomes. If this assumption is correct, then they would appear to be a useful way of understanding the ways in which researchers seek to link theory and data in empirical studies.

Second, this leads to a related potential misunderstanding of the argument in this article. It is important to be clear that my argument in this article is focused on collective ways of making knowledge claims in higher education research rather than about the 'failings' of individual researchers. As I have argued before (see Ashwin 2009), too much of what passes for criticism in higher education research is focused on castigating other researchers for not taking the 'right' approach to their research rather than engaging with what they are actually trying to achieve and recognising the way that all research is bounded by the collective practices that characterise a field of enquiry at a particular moment in time and space. For example, it is worth noting that at the time of this review only one of the journals (*Review of Higher Education*) explicitly mentioned the discussion of theory in its 'guidance to authors'. It is also worth remembering that all of the articles were written for particular journals and subject to critical peer review and so in this way can be seeen as the product of the research community rather than simply the outputs of individual researchers or groups of researchers (on issues around peer review see Macnab and Thomas 2007; Oancea 2007). It is for this reason that I do not discuss any of the individual articles when presenting my analysis.

Third, I want to be explicit that my argument is focused on how theories are developed through empirical research. It should be obvious that empirical higher education research can have other valuable aims, such as the development of higher education practices (see Hammersley 1995 for a discussion of the different aims of educational research). My argument is that the development of theory is one important aspect of higher education research.

Outcomes

Internal language of description: the conceptualisation of the research object

TABLE 3 ABOUT HERE

Table 3 shows that 19% of the articles offered an explicit conceptualisation of their research object. This was equally common in both the non-US and US journals. It was more common in the qualitative than the quantitative or mixed methods studies. The vast majority (78%) of the articles set out no explicit position from which the research object was conceptualised. There were two main ways in which these articles dealt with the object of their research. The first I labelled as using 'implicit' theories and this was used in 59% of the articles. This involved the discussion of previous research relating to the research object but without the adoption of a position. This was more common in the non-US journals. The second approach, which I labelled 'multiple theories', was where a number of theories were discussed but without a discussion of how they were related to form a position on the research object. This approach was more common in the US journals and was often

presented as a 'theoretical', or 'conceptual', 'framework'. Finally, a small proportion of articles set out 'competing theories' on the research object with the intention of testing which theory best fitted with the data they generated. This was more common in US journal and quantitative articles.

External language of description: the approach to data analysis

TABLE 4 ABOUT HERE

Table 4 sets out the approaches taken to analysing data in the 220 articles. In the majority of cases the data appeared to have been analysed based upon the initial conceptualisation of the research object, whether or not an explicit position was developed in relation to the research object. In these cases, the authors appeared to take the concepts that were highlighted by their theoretical frame or their review of the literature and use these to interpret the data. In general this seemed equally common in the US and non-US journal articles and qualitative, quantitative and mixed method articles. However, it is worth noting that it was far more common in qualitative research reported in US, rather than non-US, journals.

In around a quarter of the studies the data were analysed using a different approach (whether implicit or explicit) than was used to conceptualise the research object. This was more common in quantitative studies than qualitative and research reported in US rather than non-US journals. However, it is again worth noting that this was more common in

quantitative studies reported in US journals than in non-US journals and qualitative studies in non-US journals than in US journals.

In 12% of the articles no account of how the data were analysed was offered. These were all in non-US journals. This was more likely in mixed method and quantitative studies than qualitative studies. Finally, in 9% of studies an account of the approach to data analysis was given but it was unclear. This was either because vague phrases were used such as 'themes were identified from the data' without an explanation of how this was done or because it was not possible to relate the account of data analysis to what were reported as research outcomes. These were all in qualitative studies or mixed method studies.

Relations between the internal and external languages of description

TABLE 5 ABOUT HERE

Table 5 sets out the relations that were constituted between the outcomes of the research and the conception of the research object. The most common approach was to use the conception of the research object, whether implicit or explicit, to explore the meaning of the research outcomes. This approach was more common in non-US journal articles. In 29% of studies, there was no discussion of the outcomes in terms of the conceptualisation the research object. This was equally common in quantitative studies and qualitative studies published in non-US journals. It was considerably less common in qualitative studies published in US journals.

In 18% of studies the outcomes were used to interrogate the conceptualisation of the research object. This was more common in articles published in US journals. Finally, in 3% of articles the outcomes were used to develop a theory of the research object. This was most common in qualitative articles published in non-US journals.

Overall paths

There were twelve variations in overall path that the articles appeared to follow in their use of theory from the conceptualisation of their research object, through the analysis of their data, to the discussion of their research outcomes. Table 6 sets out the two main paths and their variants, which were followed by nearly 90% of the articles.

In nearly two-thirds of the articles the same theory (whether implicit or explicit) was used to conceptualise the research object and analyse the data and to discuss the outcomes meaning that there was a single language of description used. There were three variants of this path. In Variant 1 the same theory was used to conceptualise the research object, analyse the data and this theory was then used to explore the meaning of the research outcomes. In Variant 2 the path was the same except that the outcomes were then used to interrogate the theory. The first of these variants was more common in the non-US journal articles whilst the second variant was more common in US journals. Whilst the first variant was equally common in quantitative, qualitative and mixed methods studies, the second variant was more common in qualitative studies. In Variant 3, which was mainly found in non-US journal articles, the same theory was used to conceptualise the research object and analyse the data but the outcome was discussed without reference to this theory.

In the studies that used separate approaches to conceptualise their research object and analyse their data and therefore had separate internal and external languages of description, there were three different paths. In the most common (Variant 3), the outcomes were discussed without reference to the conceptualisation of the research object. This was most common in quantitative articles in US journals. In Variant 1, the conceptualisation of the relations between the conceptualisation of the research object and the research outcomes was used to explore the meaning of the outcomes. This path was most common in quantitative articles in non-US journals. In Variant 2, the relations between the outcomes and the conceptualisation of the research object were used to interrogate the theory. This path was most frequently taken in quantitative articles in US journals.

Discussion

In examining the significance of the outcomes of this research, I return to my original question which was 'How often are theories developed through empirical research into higher education?' Based on my review, it appears that in 18% of articles the research outcomes were used to interrogate the conceptualisation of the research object. It is this interrogation of the research object that is likely to lead to the development of theory. However, in the majority of these cases this was based on the same language of description being used to conceptualise the object of research and analyse the data. This relates directly to the concerns about theory over-determining the outcomes of research cited earlier (Tooley and Darby 1998; Desforges 2000; Gorard 2002, 2004; James et al. 2005; Gorard and Cook 2007; Thomas and Gorard 2007). If the same theory has been used to conceptualise the research object and analyse the data, then it is very difficult to see how the data can interrogate the theory because, in Bernstein's terms, there is a lack of a discursive gap between the internal and external languages of description. For example, if I

see teaching-learning interactions in terms of 'communities of practice', and use the concepts of communities of practice to analyse my data, then it is completely predictable that my data will offer support for the concepts related to communities of practice. This tells me very little about the explanatory power of the theory. Equally, as Bernstein (2000, p.135) argues it can raise ethical issues about why data have been generated if "the researched can never re-describe the descriptions of them" because the data have no chance to change the theory.

The finding that nearly two-thirds of the articles used the same 'theory' to conceptualise the research object, analyse the data and to discuss the research outcomes needs to be handled with care. I want to be clear that, in itself, this is not necessarily a problem. In this article, I have used the conceptualisation of 'languages of description' to see my research object and to analyse my data and have come back again to this notion in discussing my outcomes. However, what this offers is an *exemplification* of the theory rather than a way of challenging or developing theory. This means that there is nothing in the analysis of my data in this study that could lead to the development or interrogation of this framework; rather I am using this framework as a way of highlighting particular issues about the relations between theory and data in empirical research into higher education.

Interestingly, there was more chance for 'theory' to be interrogated in quantitative studies than qualitative studies (a fifth of quantitative studies compared to a twelfth of qualitative studies). Given that qualitative studies are often intended to offer access to a rich sense of the context researched, it is perhaps a wasted opportunity that very often this is used to illustrate a perspective rather than to develop this perspective further.

In examining the possible reasons for the lack of a discursive gap in the majority of the articles, there are clearly likely to be a number of different explanations. As discussed earlier, in the wider educational literature it is often presented as a methodological problem (Tooley and Darby 1998; Desforges 2000; Johnson and Onwuegbuzie 2004; Greene 2005; Zembylas 2007; Woolley 2009; Weis, Jenkins and Stich 2009). It is also likely to be a problem of what researchers, as well as the funders and users of research, value as outcomes from the research process. However, the analysis in this article suggests that this problem is also related to the ways in which the relations between theory and data are accounted for in journal articles which report empirical research into higher education. There appear to be two main aspects of this.

First, as Tight (2004, 2007) argued, there is little explicit use of theory to conceptualise the objects of research. Only 22% articles outlined an explicit way of seeing the research object. It is worth noting that this is much lower than those found in Tight's (2007) study. This is because whilst Tight (2007) took use of the word 'theory' as evidence for engagement with theory, in the present study the focus was on how the research object was conceptualised. As was noted earlier, in the non-US sample there was a tendency to discuss the literature without adopting a position on how the research object was conceptualised, whereas in the US sample it was more common to discuss a number of theories, usually under a heading such as 'theoretical framework' without an account of which of these theories were used to conceptualised the research object. In the vast majority of articles that did not set out an explicit theory, it is clear that there was unlikely to be any development of their implicit conceptualisation of their research object. In addition these articles are subject to the

problems outlined in the earlier quote from Bourdieu, Chamberon, and Passeron (1991). This is because the lack of an explicit account of how the research object was conceptualised makes it very difficult for both the researchers and readers to judge how the implicit model of the research object has informed and shaped the research process. For example, it makes it difficult to gauge how much the research outcomes have been shaped by this initial conceptualisation as oppose to the data generated and analysed. Similar issues are raised by the finding that nearly a fifth of the non-US articles offered no account of how the data in the article had been analysed, which is also consistent with Tight's (2007) findings. Without an account of how data were analysed, it is very difficult to get a sense of how they have been transformed in order to produce the outcomes of the study and thus to judge the plausibility of these outcomes.

Second there is a lack of recognition that conceptualising research objects and analysing data involve different kinds of 'theory'. Whilst these different 'theories' need to be aligned with each other, there needs to be a greater explicit understanding that viewing the object of your research in a particular way is different than the ways of seeing involved in systematically organising and analysing data. Overall, the analysis conducted here suggests that in the sample examined only 27% of the articles set up a discursive gap between the internal and external languages of description and very few of these used this discursive gap to interrogate their conceptualisation of the research object. It is important to note that, because this analysis is based on journal articles, it is possible that the separation between internal and external languages of description is already common place at particular moments in the empirical research process but this is not discussed when the research is reported for publication. This would mean that the underlying issues are related to how the

studies were written up rather than how the research was actually carried out. However, this would still mean that theory development is largely a private matter within empirical research into higher education, which makes it very difficult for others to understand why ways of conceptualising research objects have been rejected in particular contexts.

Ways forward

The discussion of the outcomes of this article can be seen as raising four possibilities of ways of making the development of theory through empirical research more common in higher education journal articles.

First, it would seem important for researchers to be more explicit about the theories that have underpinned their view of their research object. Related to this, there is need for greater reflexivity in recognising what has been achieved in research that uses a single theory to conceptualise its research object and to analyse its data. This greater awareness also needs to become part of the peer review process, so that researchers are asked to address these issues when they submit their work for publication.

Second, in order for the discursive gap to be promoted there needs to be greater recognition that ways of conceptualising the object of research and ways of analysing data are different kinds of 'theory' or 'ways of seeing'. In a great deal of research these two types of theory are elided, which prevents the space being developed in which theories can be interrogated and developed.

Third, in terms of practical strategies for creating a tension between the way of seeing the research object and the way of analysing data, the analysis here suggests that mixed method studies can be useful not only because they offer different forms of data but also because they tend to involve different strategies for analysing data, which allows a discursive gap to be developed. However, this still needs to be made explicit in the writing up of the research; for example it should be noted that mixed method studies in this sample were the *least* likely to offer the space for the development of theory. Equally, using different analytical approaches to analyse the same data set could offer a way forward in promoting this discursive gap.

Fourth, it seems possible that US and non-US journals could usefully learn from each other, with, according to the analysis developed here, quantitative research in US journals and qualitative research in non-US journals more likely to develop a discursive gap between their ways of viewing research objects and the outcomes of their data analysis.

If these four strategies could encourage the separation of ways of seeing research objects (the internal language of description) from the production of the outcomes of data analysis (external languages of description) in the practice and writing up of empirical research, a discursive gap could be provided which would allow for the explicit development of theories through empirical research and an understanding of the contexts and situations in which particular ways of viewing research objects are more helpful than others.

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Table 1: Basic methodological approach of the non-US and US journal articles

Articles in:	Quantitative	Qualitative	Mixed methods	**Totals**
Non-US journals	56 (38%)	72 (49%)	18 (12%)	**146 (66%)**
US journals	54 (73%)	19 (26%)	1 (1%)	**74 (34%)**
Totals	**110 (50%)**	**91 (41%)**	**19 (9%)**	**220 (100%)**

Table 2: Categorisation of the ways 'theory' was used to conceptualise the research object, analyse the data and discuss the research outcomes

Use of 'Theory' to:	Categorisations
Conceptualise the research object	1. 'Implicit theory' – use of literature without stating a position on research object 2. 'Multiple theories' – a number of different theories used without a sense of what position was taken in relation to these 3. 'Competing theories' – a number of competing theories discussed without a position being set out. 4. 'Position on research object' – clear position taken on how the research object was seen
Analyse the data	1. No account given of how data analysed 2. Unclear account of how data analysed 3. Explicit account given of how data analysed – based on original conceptualisation of research object 4. Explicit account given of how data analysed – based on different theory to research object
Discuss the research outcomes	1. No use of theory of research object to discuss outcomes 2. Conceptualisation of the research object used to explore the meaning of the outcomes 3. The outcomes are used to interrogate the conceptualisation of the research object 4. The outcomes are used to develop a conceptualisation of the research object

Table 3: Percentages of articles that used 'theory' in different ways to conceptualise the research object categorised by type of journal and by methodological approach

		Methodological Approaches			
Ways in which 'theory' was used to conceptualise the research object	*Articles in:*	*Quantitative*	*Qualitative*	*Mixed Method*	***All approaches***
'Implicit theory'	Non-US Journals	79%	65%	72%	***71%***
	US Journals	39%	32%	100%	***39%***
	All Journals	**59%**	**58%**	**74%**	***59%***
'Multiple theories'	Non-US Journals	13%	8%	11%	***10%***
	US Journals	31%	47%	0	***35%***
	All Journals	**22%**	**16%**	**11%**	***19%***
'Competing theories'	Non-US Journals	2%	0	0	***1%***
	US Journals	7%	5%	0	***7%***
	All Journals	**5%**	**1%**	**0**	***3%***
'Position on research object'	Non-US Journals	7%	26%	17%	***18%***
	US Journals	22%	16%	0	***20%***
	All Journals	**15%**	**24%**	**16%**	***19%***

Table 4: Percentages of articles that used 'theory' in different ways to analyse their data categorised by type of journal and by methodological approach

		Methodological Approaches			
Approach taken to data analysis	*Articles in:*	*Quantitative*	*Qualitative*	*Mixed Method*	***All approaches***
No account given	Non-US Journals	24%	11%	28%	***18%***
	US Journals	0	0	0	***0***
	All Journals	**12%**	**9%**	**26%**	***12%***
Unclear account	Non-US Journals	0	19%	17%	***12%***
	US Journals	0	11%	0	***3%***
	All Journals	**0**	**18%**	**16%**	***9%***
Data analysis based on conceptualisation of research object	Non-US Journals	54%	51%	50%	***52%***
	US Journals	43%	84%	100%	***54%***
	All Journals	**48%**	**58%**	**53%**	***53%***
Data analysis based on different theory to research object	Non-US Journals	24%	18%	6%	***18%***
	US Journals	57%	5%	0	***43%***
	All Journals	**40%**	**15%**	**5%**	***27%***

Table 5: Percentages of articles that established different relations between their conceptualisation of the research object and their outcomes categorised by type of journal and by methodological approach

		Methodological Approaches			
Relation between initial conceptualisation of research object and outcomes	*Articles in:*	*Quantitative*	*Qualitative*	*Mixed Method*	***All approaches***
None	Non-US Journals	30%	32%	11%	***29%***
	US Journals	35%	16%	0	***30%***
	All Journals	**33%**	**29%**	**11%**	***29%***
Conceptualisation of research object used to explore meaning of the outcome	Non-US Journals	61%	50%	67%	***56%***
	US Journals	35%	37%	100%	***36%***
	All Journals	**48%**	**47%**	**68%**	***50%***
The outcomes are used to interrogate the conceptualisation of the research object	Non-US Journals	7%	14%	17%	***12%***
	US Journals	30%	37%	0	***31%***
	All Journals	**18%**	**19%**	**16%**	***18%***
The outcomes are used to develop a conceptualisation of the research object	Non-US Journals	2%	4%	6%	***3%***
	US Journals	0	11%	0	***3%***
	All Journals	**1%**	**5%**	**5%**	***3%***

Table 6: Percentages of articles that followed particular paths in their use of theory, analysis of data and discussion of outcomes categorised by type of journal and by methodological approach

			Approaches			
Path	*Variants*	*Articles in:*	*Quantitative*	*Qualitative*	*Mixed Method*	***All approaches***
Single language of description	Variant 1: Conceptualisation of research object used to explore meaning of outcome	Non-US Journals	43%	39%	39%	***40%***
		US Journals	28%	32%	0%	***28%***
		All Journals	**35%**	**37%**	**37%**	***36%***
	Variant 2: Outcome used to interrogate the conceptualisation of research object	Non-US Journals	2%	10%	11%	***7%***
		US Journals	13%	36%	0	***19%***
		All Journals	**8%**	**15%**	**11%**	***11%***
	Variant 3: Outcome discussed without reference to conceptualisation of research object	Non-US Journals	27%	18%	28%	***23%***
		US Journals	2%	5%	0	***3%***
		All Journals	**15%**	**15%**	**26%**	***16%***
Separate internal and external languages of description	Variant 1: Conceptualisation of research object used to explore meaning of outcome	Non-US Journals	14%	7%	6%	***10%***
		US Journals	7%	0	0	***5%***
		All Journals	**11%**	**5%**	**5%**	***8%***
	Variant 2: Outcome used to interrogate the conceptualisation of research object	Non-US Journals	4%	3%	0	***3%***
		US Journals	17%	0	0	***12%***
		All Journals	**21%**	**2%**	**0**	***6%***
	Variant 3: Outcome discussed without reference to conceptualisation of research object	Non-US Journals	4%	8%	0	***5%***
		US Journals	33%	5%	0	***26%***
		All Journals	**18%**	**8%**	**0**	***12%***