Aspects of Scientific Lives—Research Note

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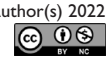
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Luck and the 'situations' of research

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Abstract

This research note uses material from interviews with senior scholars in the natural sciences to highlight, and start to explore, the role and nature of 'luck' in scientific careers. By examining this in the context of STS work on the nature of contemporary academia, we argue for the importance of taking luck seriously as we interrogate life and work in research.

Keywords

luck, academic work, situations, careers

> I know of hardly any career on earth where chance plays such a role. I may say so all the more since I personally owe it to some mere accidents that during my very early years I was appointed to a full professorship in a discipline in which men [sic] of my generation undoubtedly had achieved more than I had. And, indeed, I fancy, on the basis of my experience, that I have a sharp eye for the undeserved fate of the many whom accident has cast in the opposite direction and who within this selective apparatus in spite of all their ability do not attain the positions that are due to them. (Weber, 1948, p. 132)

In a series of studies that explore experiences of contemporary academic work and practice (e.g. Davies, 2020, 2021; Davies & Horst, 2015), we have found that luck is a repeated refrain, one threaded through the accounts of researchers and scientists. It is never the main thing that our interlocutors discuss, but it persistently recurs as an aspect of narrations of careers and work practices. Researchers often say that they have been 'lucky', 'fortunate', 'privileged', or the like. What does it mean, we wonder, that 'luck' is so frequently present in accounts of surviving or thriving in academia?

In reflecting on this question we want to frame references to luck not only as a discursive resource – one that might allow a speaker to present themselves as modest or to

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gloss over the structural injustices of the academy (Loveday, 2018a; Ye & Nylander, 2021) – but also as a feature of academic practice, something with agency and a defining yet uncontrollable role in the lives of academics. Our aim is to encourage STS to take luck seriously, both in research that explores academic work and epistemic practice and in efforts to care for academic lives within research policy and management.

In doing this we draw on accounts of careers in science narrated by senior women professors in Norway and Austria. As in previous studies, 'luck' as a means of explaining success was present in almost all interviews; here, we focus on and unpack these explanations by relating them to recent conceptual work on luck and on the notion of the 'situation'. We start by exploring this conceptual landscape below.

Luck in the context of science

There has been relatively little sustained attention to the role of luck in the context of academic careers. Luckiness is mentioned in Hermanowicz's (2006) structured interview study of 'what it takes to be successful' within science, but it comes at the bottom of the list of qualities that the physicists he spoke to mentioned (persistence is at the top). Merton and Barber (2006), however, trace scientists' discussions of serendipity in scientific practice (and particularly contexts of discovery or invention) through history, showing how it became a language for the 'happy accidents' and 'vagaries' of science whilst simultaneously being something that must be earned (p. 177). Murayama et al. (2015) also suggest that serendipity (or, perhaps better, the possibility to act on serendipitous findings) can be managed through internal group dynamics, such as who leads a research team. Such serendipity is framed as a positive thing, something to be aimed at and controlled for. It is a fortuitous and timely accident (Leahey & Cain, 2013), albeit one that may fall on prepared ground, which results in new findings or other positive outcomes. In contrast, Sand and Copeland (2020) are more concerned with unlucky eventualities in science. In a discussion focused on efforts towards responsible research and innovation (RRI), they suggest that 'luck is a threat to the responsible governance of science and technology' (Sand and Copeland, 2020, p. S1) because it may result in 'unforeseen disasters and technological catastrophes' (p. S4). Both they and Merton and Barber (2006) are interested in the moral challenges that luck poses for science, framing luck as a 'problem' for thinking about responsibility, reward, and accountability. What does it mean to account for luck in a moral economy that rewards success (the breakthrough finding) and penalizes failure (the 'unforeseen' side effect) at the level of individuals or institutions?[1]

Outside of STS, Sauder (2020) argues that sociology has previously considered luck a 'residual category', rejecting it 'as antithetical to a sociological approach to understanding the world' (p. 197) because it challenges the systematic study of causation. He calls for new theories and studies of luck that take it seriously as a 'real phenomenon', defining a lucky event as 'one that involves chance, is consequential (either beneficial or harmful), and is at least partially outside the control of the person or people affected by it' (Sauder, 2020, p. 195). The research programme he outlines involves attention to the 'social construction' of luck, on the one hand, and its 'real effects', on the other, and therefore covers both questions of luck's framing and salience and of how it comes to

matter in particular contexts. His argument that studying luck can 'balance skewed neoliberal narratives about individual efforts and achievement' (p. 209) resonates with other recent accounts of the 'myth' of meritocracy and the tendency of the successful to underestimate privilege in their success (Frank, 2016; Power et al., 2016). Other work theorizing luck has sought to disaggregate luck, chance, and serendipity by defining the different forms these can take (Yaqub, 2018): Both Roumbanis (2021) and Sand and Jongsma (2020), for instance, discuss different types of chance or luck, in terms that are tied to the contexts in which they emerge.

Luck thus presents a paradox. It is by definition a chance event, but is constantly subject to efforts to control, manage, or prompt its appearance.[2] It is entangled with moral questions that relate to justice and responsibility. And it is both a real thing, with real effects, and a discursive construct – something that, as Ye and Nylander (2021, p. 418) write, 'does not have an essential meaning and can produce different representations of legitimacy'. In practice most social research into luck – and especially that which has focused on luck within career paths – has focused on the latter of these two aspects, exploring how luck is framed within talk or practice, and how it is mobilized to particular ends. For Bornat et al. (2011), 'luck stories offer one way of accommodating the unexpected in narratives of career progression' (p. 345); similarly, Ye and Nylander (2021) explore the complex ways in which elite university students frame luck (as being tied to both humility and to hard work, for instance). Most extensively, Loveday (2018a) has examined how early career researchers incorporate references to luck into accounts of their career paths, arguing that such references primarily appear in connection with moments of success, while failures are viewed as a 'personal responsibility'. The recourse to ideas of luck, chance, and happenstance by her interlocutors relates, she suggests, to the 'tenuous position' (p. 762) these researchers find themselves in, and to the subjectivities prompted by an academy that individualizes responsibility for career paths without acknowledging structural inequalities. As she notes, she is concerned with the 'narrativization of "luck"', not with whether it was 'really' present in researchers' experiences. Combining this interest in narrativization with recent work on atmospheres of science might help us to draw Sauder's (2020) two strands of studies of luck – its 'social construction' and 'real effects' – together.

For Davies (2021), 'thinking with atmospheres' is a means of becoming attuned to 'the tensions and non-coherences' of researchers' accounts of their careers (p. 228), one that is attentive both to the affective regimes of science and to the multiplicities of their accounts. The notion of the 'situation' (Berlant, 2011; Stewart, 2011) is central to this. For Berlant, a situation is:

> a state of things in which *something* that will perhaps matter is unfolding amid the usual activity of life. It is a state of animated and animating suspension that forces itself on consciousness, that produces a sense of the emergence of something in the present that may become an event. (Berlant, 2011, p. 5)

Situations are therefore mundane but may blossom into something else. They are 'things hanging in the air', things that are 'worth describing' (Stewart, 2011, p. 447) because they show us something of how life is lived and what its possibilities are. To foreground

situations therefore allows us to understand research work as a field of potentialities, a zone of constant possible eventfulness. Something 'that will perhaps matter' is immanent but not yet fully visible, and perhaps never will be. The notion of the situation frames academic work as a space into which luck may irrupt, turning situations into events. Events are moments of change, of shifts in the 'force fields' in which individuals live (Stewart, 2011), but they will also be made sense of and narrated in complex and presumably shifting ways. Such work offers one way of approaching luck in science, one which takes the reality and agency of lucky events seriously while remaining attentive to how they are narrated and accounted for. Luck is both a moment of external action beyond one's immediate control and an experience to be reported and framed.

At least, that is our argument. We use this framing to explore how luck emerges as a theme in interviews with senior scientists. In the next section we briefly introduce the background to the study and how it was carried out.

Background and methods

The research on which we are drawing can be situated in a body of literature that has explored and critically interrogated the conditions of contemporary academic work. In broad brushstrokes, this literature has sketched the ways in which dynamics of marketization, projectification, globalization, new logics of evaluation, and academic capitalism are (re)shaping universities and research organizations and the working practices of those within them (Ball, 2012; Espeland & Sauder, 2016; Fochler, 2016; Larner, 2015; Slaughter & Leslie, 1997; Ylijoki, 2014). Amongst other impacts of these developments, academic work around the world is becoming marked by increased competition, greater use of short-term contracts, and heightened precarity (Anderson et al., 2007; Cannizzo & Osbaldiston, 2020; Courtois & O'Keefe, 2015). While there is now a large body of work that has traced the pernicious effects of this situation on early career researchers in particular (Fochler et al., 2016; Loveday, 2018b; Müller, 2014), this study was prompted by an interest in how more established scholars were making sense of their work contexts and activities. It therefore focused on senior professors in the natural sciences working in two different university systems (Norway and Austria), engaging women scholars in an effort to explore the degree to which gender emerged (or not) from interviewees as a central theme in narrating career progression.

Nine semi-structured qualitative interviews were carried out in Norway, and nine in Austria,[3] with most lasting between one and two hours. Interviewees were identified by searching for recipients of high profile 'excellence' grants, membership of elite academic societies, and senior university roles. All interviewees were full professors, and most held or had held other roles (such as directing large research centres). Interviews were carried out between 2019 and 2021, either in person or as an online video conversation, and focused on the elicitation of narratives of career histories. Interviewees were asked to describe their journeys through the academy, including challenges and enabling factors, as well as any changes they had observed. The interviews were transcribed (and where relevant translated to English) before being analysed through a process of repeated reading and coding using the software MaxQDA. This analysis was abductive in the

sense that it combined a concern for emergent themes and meanings with theory-led interest in sense-making about academic careers (Timmermans & Tavory, 2012).

We do not report all findings from this study here, instead focusing specifically on how luck emerged in explanations or accounts of interviewees' 'success' (as they interpreted the term). It is worth noting, though, that gender was introduced by some, but by no means all, interviewees as a pertinent factor in how they had navigated their careers, and that they framed its role in complex and multi-faceted ways (rather than straightforwardly as a challenge or advantage). Similarly, differences between the accounts of those based in Norway and Austria were minimal[4] – perhaps not surprising given that several interviewees had experienced extensive international mobility, and were not living in their country of birth. In what follows we therefore report on findings from across the interview material.

Being lucky

How did interviewees account for (their) success in scientific careers? The trajectories they described, and the ways in which they narrated these, varied widely: There was no single way to achieve the positions that they had or to make sense of how they had done so. A number of themes are, however, discernable: Interviewees spoke of the vital role of particular *people* in supporting them; of the importance (or necessity) of *hard work* and sacrifice; and of *luck*. These themes overlapped: It was not unusual, for instance, for interviewees to speak of being lucky in the people who had surrounded them, or of one's hard work as a scientist preparing the ground for the right reception of lucky events.

Luck is present throughout the interviews, both as brief comments – 'I've been lucky with the people I have recruited', for instance (Interview 5, Norway) – and in more extended accounts. The fundamental role that luck plays across the material is well summarized in the following quote:

> So I don't think one person that is doing well is necessarily so much better than the other person. It's also a matter of coincidence, or luck, or of course it's not only luck, *but it's also no guarantee that even though you work hard and are intelligent and a good scientist that you will be successful*. (Interview 4, Norway; emphasis added)

Luck is vital in these accounts because of what this interviewee states: Even if you do everything right, there is no guarantee of success in science. There are many people who work hard, and many who have supportive networks or mentors, but it takes something extra – a moment or moments of luck – to reach a stable, established position. Most at some point shared the perspective expressed by this interviewee: 'I've been very lucky to be successful' (Interview 7, Norway).

To understand the place that luck holds in interviewees' accounts it is useful to contextualize it in terms of the wider ways in which they narrated their career trajectories, and in particular with respect to a central tension that emerges across the material. On the one hand, these scholars often presented themselves as goal-directed, focused, and highly motivated: They had 'a sense for exciting science … burn for it … [have] a vision' (Interview 8, Austria). They experienced a 'driving force', or had decided 'this is going

to be my career'. On the other hand they explained their career trajectories through terms such as 'random', 'happenstance', 'coincidence', 'accidental', or 'arbitrary', often presenting their lives in science as a series of choices or changes that were more or less outside of their control and that were structured through a mix of personal and professional factors (see Davies, 2021). 'The path is shaped while you walk' (Interview 5, Norway). 'Sometimes a train passes and you need to jump' (Interview 4, Austria). The process of navigating a career in science was therefore not readily plannable or controllable; rather, it was incremental, deeply uncertain, and at times haphazard or chaotic. As such luck was frequently framed as playing a central role in the step-by-step pathway that had brought interviewees to their current positions.

Such luck took different forms. Unlike the scientists who participated in Sand and Jongsma's (2020) focus groups, there was no clear distinction between luck in the 'social dimensions' of science and that within 'scientific practice'. Indeed, as noted above, people were viewed as integral to the work of science – 'my science is my people, right?' (Interview 3, Austria). Lucky events, choices, or moments thus ranged from the people one worked with to luck in securing funding, 'meeting the right people at the right time', a job coming up at a good moment, an unexpectedly significant research finding, or choosing a good research field. The extract below shows one account of the pivotal role of the latter form of luck:

> I've been very lucky in my research field. I started in something that was more or less completely unknown … And because we managed to develop a [particular] method the field changed completely. … So from being something that was only theoretical suddenly it became very practical. And the research field exploded.
>
> (Interviewer) And you say that was, you say you were lucky in that, but I suppose it was also your work that made that happen?
>
> Oh yes absolutely. But I think that you have to accept that in – As everywhere in life you – Certain paths that you take are lucky paths. And I was very lucky in what I selected.
>
> (Interview 3, Norway)

The exchange is significant because it gives one example of how luck was embedded in the other modes through which success was narrated and explained. 'I suppose it was also your work that made [the explosion of the research field] happen?', asks the interviewer. The interviewee agrees, and, indeed, emphasized throughout the interview the importance both of hard work and of being someone who is able to 'harvest from luck'. At the same time, she is clear that luck played a significant role, one that is not reducible to other factors. The path she took in getting into her field was fundamentally a 'lucky path'.

Luck's ubiquity in accounts of scientific careers thus seems in part to be tied to the incremental and at least partly unplannable nature of those careers, as well as to the sense that other factors such as hard work and supportive peers are not sufficient for success. In the next section we reflect on how this relates to theories of luck and situations.

Luck and the situations of science

How should we think about the central role that luck plays in accounts of (these) scientific careers? One possibility is to consider it in the context of the interviews themselves, and the discursive act of narrating one's career. Perhaps references to luck are a means of presenting oneself as modest – as humble about one's success (Merton & Barber, 2006). Aside from references to being a 'good scientist', none of our interviewees talked of genius or natural brilliance: Such claims could well be viewed as inappropriate in self-presentation. Luck thus becomes a means of acknowledging success without attributing it solely to oneself. Another possibility is to understand at least some references to luck as content-free fillers in the process of constructing an account. To say, for instance, 'we have been very lucky with having this [particular] collaboration' (Interview 6, Norway) could be understood as conveying 'we are very happy about this collaboration', rather than making a point about its particularly lucky nature. In both cases references to luck are a discursive tool in building a coherent, and interactionally appropriate, account of oneself and one's career. For Loveday (2018a), junior researchers 'take recourse to these notions [of luck] when describing situations over which they felt no control' (p. 763) and thereby demonstrate a 'lack of entitlement' (p. 765). Something similar might be said of this cohort: References to luck function to retroactively make sense of trajectories that were framed as incremental and uncertain, whilst presenting oneself as pleasingly modest.

Such an approach lends itself to the debunking of luck – the idea that talk of luck simply masks privilege. In this view, as Sauder (2020) writes, the analytical mission 'is to take events that people see as lucky or unlucky and then explore the actual social causes or processes that can account for these outcomes' (p. 198). Such an analysis would certainly be possible in the context of science, where there is at least a possibility that 'luck' in funding, jobs, or networks can in fact be traced to one's gender, location, or other structural factors (Ginther et al., 2016; Jöns, 2011; Lutter & Schröder, 2016; Pereira, 2019). But this approach – what Ye and Nylander (2021, p. 147) term the 'critical inclination of unveiling the myths of meritocracy and deservingness' – implicitly mobilizes a Bourdieusian notion of 'misrecognition': it assumes that actors misrecognize, or misinterpret, their situations, and that we must 'dissect [their] narratives' in order to understand them. In writing about undergraduate students' accounts of how they got access to elite universities, and the role of 'luck' in this, Ye and Nylander argue that focusing on such 'unveiling' of the myths through which individuals explain their current positions inevitably involves distrust of their accounts, and undermines the 'radical uncertainty' that is in fact at the heart of 'educational trajectories'. What happens, they ask, when we bracket such unveiling, at least temporarily, and take luck seriously?

This returns us to the notion of the situation. The empirical material as a whole gives us some sense of what is 'hanging in the air' (Stewart, 2011) within the situations of science: networks of people and relations, hard work and long hours, sacrifice and costs, but also pleasure, drive, and passion. This atmosphere is also marked by fundamental uncertainty. For long stretches of their careers many of our interviewees simply didn't know what would happen next: The focus of their work, locations, and whether they would remain in science at all were unclear. In moving through a scientific career step by step, moment by moment, always seeing what emerged next, it was, of course, possible to

exert agency. Even when 'floating with a river' (Interview 6, Norway), seeing what emerged next, a researcher could be 'driven by the science that [she] wanted to be doing' (Interview 7, Austria). Similarly, the idea of hard work offers the possibility of taking some control over one's career path. Respondents were often clear that academic work was simply 'not for' some people, because of the costs and dedication it involved; one therefore chose to engage in it, and chose to work to the extent that was necessary. But despite these means of acting, science remained uncertain and, often, unfair. This, for instance, is one interviewee reflecting on her current situation:

> The science is really exciting, we are quite successful, and I have to say my PhD was difficult enough that I can still very much appreciate that the science is going so well because you have to also be lucky for that. I know many good scientists who haven't had that kind of luck even though they are really, really good. (Interview 3, Austria)

In such framings, success is at least to some degree random, outside of one's control. Luck irrupts into the situations of some and not others, becoming the defining mark of those who are able to thrive. Science is a field of potentialities, and one acts as best as one can. The interviewee quoted above, for instance, also noted that, while she [still] didn't make long term plans, 'of course it's good to think what you want because this helps to recognize opportunities'. At the same time, academic careers, like the pathways of Ye and Nylander's (2021) students, are marked by radical uncertainty. Lucky events, meetings, or 'paths' (to quote a previous interviewee) turn situations into events, pushing some into success and others – not.

Taking luck seriously

Taking luck seriously thus means understanding scientific practice, and successful careers within it, as marked and shaped by luck. Luck becomes central to the *eventfulness* of science. This view leads us to a number of suggestions – though before making these, we should note again the specificities of our interviewee group: They identified as women, worked in the natural sciences, were in very senior roles, and were located in two national contexts, Norway and Austria. While we also see an emphasis on luck in other studies, one important question is thus of how these accounts would relate to those of researchers in other situations and locations. Gendered identities are particularly pertinent here. We know that there are differences in how, on average, men and women scientists talk about their work (Sarathchandra et al., 2018; Zeldin et al., 2008); perhaps references to – and experiences of – luck (as opposed to mastery or brilliance; Hermanowicz, 2006; Zeldin et al., 2008) could be one aspect of this. We therefore echo Sauder's (2020) call for research that explores how luck is differently patterned, experienced, and discussed by different populations – in this case by those who inhabit different identities within the academy.

To understand science as comprised of situations that are partly outside of personal control, and in which luck is an inescapable aspect of success, makes the point, familiar to STS (e.g. Law, 2017), that *things could be otherwise*. 'Luck is the instantiation of one among the better possible worlds' (da Col, 2012, p. 6). Other worlds could easily have

been: This is true of scientific knowledge production, which is contingent, becoming fixed only through its accretions (Law, 2017), but also – according to these interviewees – of scientific careers. To incorporate luck into our thinking about scientific work is thus to extend STS's emphasis on the contingencies and localities of knowledge production to the trajectories of those engaged in it. Who rises to the top, and who is left behind, is at least partly due to the eventfulness of luck and not only to the actions of individuals in either of those categories. To return to Weber's statement heading this article, there will be many who 'in spite of all their ability do not attain the positions that are due to them' (Weber, 1948, p. 132). Taking this for granted when we examine epistemic practices and the negotiation of careers will mean that we explore accounts from within research not only as constructing science in a particular way, but as themselves fundamentally shaped by uncertainty and chance. When we examine the doing and shaping of science, in other words, we should take seriously as agents not only the actions of scientists, the practices of funders, and the various discursive and affective regimes that these co-produce, but luck (and bad luck) as active, impactful, and fundamentally unpredictable actants. Luck acts in science just as much as other features we identify in contemporary academia; one challenge for scholarship, then, is of how to notice, study, and further characterize it (Sauder, 2020).

A further implication is the need to study not just luck, but the way in which it is made sense of – to find ways of combining engagement with luck as discursive resource and as unpredictable actant. This will mean both acknowledging the role of luck in redefining particular situations *and* critically examining talk of luck, the structural inequalities that this may conceal, and the ways it functions as a discursive resource in particular contexts. To return to the notion of the situation (Berlant, 2011; Stewart, 2011), the central analytical challenge will be to hold together an awareness of luck as transforming (some) situations into events with a sensitivity to the frames and languages through which such events are made thinkable and tellable. This calls for more extended studies of luck in the academy, and of the events that render some scholars successful or established. What is the texture and patterning of luck, how are lucky events situated, and what are the forms of discourse that emerge around them?

To acknowledge the place and agency of luck also leads, as others have pointed out, to questions of justice and morality (Merton & Barber, 2006; Sand & Copeland, 2020). If luck is central to success, lifting up one or two out of many qualified candidates who have also 'worked hard' and had good support networks, what does that mean for systems of reward and responsibility in science? While this question speaks to contemporary debates about the use of randomization in reward systems, for instance in research funding (De Peuter & Conix, 2022; Reinhart & Schendzielorz, 2020), acknowledging luck also suggests both the importance of humility and the continuing necessity of rejecting hero narratives of excellence and exceptionalism. Indeed, as Loveday suggests, perhaps talking (more) of luck has the potential to intervene in current evaluative regimes. Luck could become:

> a means of puncturing neoliberal discourses of 'enterprise' …. I believe 'luck' might also have an interesting potential to disrupt those narratives that celebrate the success of the 'superstar' individual, while simultaneously encouraging the taking of responsibility for failure. (Loveday, 2018a, p. 772)

Funding and recruitment processes still frequently continue to celebrate – and in doing so constitute – 'superstar individuals'. Discussing and foregrounding luck might help to disrupt these practices, and to drag further into public and policy consciousness the nature of science as uncertain and contingent – features that continue to be elided in many accounts of science (Djanegara, 2022). Further, in a context in which exploitative and abusive behaviour by such 'superstars' is by no means unheard of (Ball, 2021; Thompson, 2022), the acknowledgement of luck and the enforced humility that this brings may aid in accountability. If those in senior roles are just some of many who could take on such work, then there is more incentive to hold them accountable for their behaviour.

All of this takes us some distance from the accounts of our interviewees – none of whom, we should emphasize, we suspect of exploiting their positions. In closing, we briefly return to our interviewees' talk to note again that – although we have focused on luck in this research note – their accounts of success presented complex interweavings of their own actions and those of others. Understanding how luck intersects with other enablers of surviving and thriving in academia, such as hard work or beneficial relationships (Hermanowicz, 2006; Leahey & Cain, 2013), will be another important goal for future research.

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Notes

1. The related problem of 'moral luck' has been extensively discussed in philosophy (e.g. Nagel 2012 [1976]). Studies of the Matthew Effect can also be understood as an effort to explore the consequences of luck: One (lucky) achievement leads to the garnering of more resources, and thus to more research achievements, and so on in a virtuous circle (Merton, 1968).

2. In anthropological studies, luck is not an isolated or one-off event but is integrated with whole cosmologies; as da Col (2012, p. 17) writes, such work presents 'the flow of fortune and luck as originating from human and non-human agents that create interlaced spheres of exchange'.
3. The two countries were selected because of their different types of university system (Shin & Jung, 2014) as well as convenience: We had local access in both countries.
4. The exception was a particular emphasis on institutional structures and contexts as defining the experiences of interviewees based in Austria, something that is likely to be explained by the different university systems in the two countries (Shin & Jung, 2014).

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