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The Reversed Causalities of Doctoral Training on Research Integrity: A Case Study from a Medical Faculty in Denmark

Laura Louise Sarauw

Abstract
Over the last decade, a plethora of international policies and guidelines on research integrity have been produced, and many countries have developed national codes of conduct. Recently, as a way of implementing these codes, institutions have begun offering mandatory training in research integrity for PhD fellows. This paper is based on a case study of a mandatory course in research integrity for PhD fellows at a faculty of medicine in Denmark (2017–18). The study comprised a small survey, participatory fieldwork, and interviews with six course participants, the course leader and a teacher. Based on this study, the paper shows that the PhD fellows perceived the integrity course as if it, to some extent, contributed to normalising the questionable research practice (QRP) and grey zone behaviour that the course was conceived to prevent. The interviews, however, also show that this latent normalisation must be seen in the context of the PhD fellows' position within a strongly competitive culture, which sometimes rewards questionable behaviour. For this reason, creating a culture of research integrity cannot be accomplished by integrity training alone, it demands a wider structural change in the incentives for career advancement that sustain the current asymmetries of power.

Keywords
Higher education policy. Academic development. Research integrity training. Responsible conduct of research (RCR). Questionable research practice (QRP). Research Ethics

Introduction

> It is like driving on the highway. If the people around you are driving too fast, you just have to follow their speed, although you know it's wrong. Otherwise, you may very well damage yourself and others. (Interviewee A, November 2017).

This quote is from a 34-year-old PhD fellow who participated in the mandatory course in research integrity for doctoral students in the medical sciences. We shall return to him again later in this paper as we follow his reflections on the integrity course, and those of his fellow participants. In the quote, the PhD fellow suggests that there is an analogy

between a driver's relationship to the speed regulations on the highway and the researcher's relationship with the increased number of national and international codes and guidelines for responsible research and research integrity. Like speed regulations, researchers are expected to learn and follow these codes and guidelines as part of their 'professional driver's licence'. The PhD fellow, however, also remarks that there is an important distinction between ideal and practice, since, occasionally, it might be wiser to disregard the regulations and adapt to the local traffic. On the integrity course analysed in this paper, this local traffic was described through a narrative about the medical sciences as a culture dominated by questionable research dilemmas and (incentives for) grey zone behaviour.

The institutional concern with training in research integrity emerged in the United States in the 1960s and 1970s, and was revived in the 1990s by an increased number of scandals (Montgomery & Oliver, 2009: 142; Resnik D., Resnik L., Rasmussen & Kissling, 2015). The emergence of these concerns has followed different paths in Europe, the USA and China, and the definitions of integrity and misconduct vary in different geographical contexts (Macfarlane, 2014; Bretag, 2016; Tauginienė, Gaižauskaitė, & Razi, 2019). However, many of the codes of conduct for research integrity that are currently formulated assign the formal training for doctoral students and staff the major responsibility for diffusing integrity norms (Degn, 2017; Douglas-Jones & Wright, 2017; Wright et al., 2019; Tauginienė et al., 2019).

Based on fieldwork in the mandatory research integrity training course for PhD fellows at a large medical faculty in Denmark (2017–18), this case study focuses on tensions between the different political and organisational ideas regarding what kinds of problems the integrity training for PhD fellows is intended to solve. It shows how the local actors translated the issue of scandal and malpractice of the overall policy documents into a problem of questionable research practice (QRP) and grey zone behaviour as a prevalent problem for many researchers. In this process, the responsibility for research integrity was passed from the institution to the individual PhD student, who was seen as a vehicle for solving decisive problems within the field.

If the traditional idea is that a culture of malpractice is the 'cause' and individual breaches of research integrity are the 'effect' (Macfarlane, Zhang, & Pun, 2014: 342), the study suggests that the narrative about QRP and grey zone behaviour as a prevalent problem within the medical sciences to some extent served to normalise the QRP and grey zone behaviour that the integrity course was initially conceived to prevent. However, the interviews with the PhD fellows also show that this normalisation was to a great extent determined by the local 'traffic circumstances', i.e. the PhD fellows' working conditions and prior experiences with QRP and grey zone behaviour.

Analytical Framework

The integrity course of this study emerged within a policy scape with various actors and diverse interests in promoting integrity training as the solution to diverse problem narratives. In Denmark, the so-called "Penkowa scandal" was a case in point, when one of Denmark's star neuroscientists and winner of the national Elite Research prize was found to have fabricated her research and falsified results, and was accused of fraud and embezzlement. Influenced by such scandals of research malpractice and a general debate regarding the accountability of research, several policies and guidelines for research integrity have been produced over the last decades, such as the Organization for Economic Cooperation and Development's (OCED) Best Practices for Ensuring Scientific Integrity and Preventing Misconduct (2007), the European Science Foundation's (ALLEA) Code of Conduct for Research Integrity (2011, revised in 2017), and the Singapore Statement on Research Integrity (2011).

On a national basis, Denmark, the EU, and many of its member countries have developed codes of conduct, which are currently being brought into practice. These codes have been integrated into the fabric of much of the European and national research funding, translated into institutional policies and procedures, and have influenced disciplinary research and dissemination practices (Montgomery & Oliver, 2009; Resnik et al., 2015; Douglas-Jones & Wright, 2017; Sarauw et al., 2019). The European Code for Research Integrity (2017), for example, suggests that training should ensure that all researchers are made aware of codes and regulations; that all should receive "rigorous training in research design, methodology and analysis", and that the senior researchers should act as mentors in order to facilitate "a culture of research integrity" (European Science Foundation, 2017: 5). These policies and guidelines commonly depict the doctoral student as a key actor in the enactment and development of a university culture of research integrity and responsible conduct of research (RCR). At the same time, they place new responsibilities on the individual institutions (Montgomery & Oliver, 2009; Bone, 2012; Reubi, 2012; Hiney, 2015; Muthanna, 2016; Hedgecoe, 2017). This is, for example, seen in the Danish Code of Conduct for Research Integrity (DCCRI), in which institutions are held "responsible for ensuring that all staff […] and students involved in research have sufficient knowledge of and receive training in the principles of research integrity and responsible conduct of research" (Minstry of Higher Education and Science, 2014: 16).

However, recent studies such as Tauginienė et al. (2019) show that whilst many institutions are focusing on teaching and establishing acceptable behaviours, the interpretation and conceptual understanding of terms linked to integrity vary depending on the field of study, from country to country, and from institution to institution (see also Douglas-Jones & Wright, 2017; Sarauw et al. 2019). To this end, there is a gap in the research literature built on empirical studies that explore this local interpretation work, e.g. in relation to the development and teaching of courses in research integrity for PhD fellows. Furthermore, as argued by Macfarlane et al., (2014), the field remains undertheorised in terms of approaches that explore the co-constitutive effect of the widespread normative framing of academic integrity as a 'corrupt' or 'bad' practice (Macfarlane et al., 2014: 342).

Responding to this gap in research, the analyses in this paper are based on a narrative approach, which is grounded in poststructuralist theory. It starts from the position that 'problems' with research integrity are not given, but can rather be seen as social constructions that are put into work by presenting a particular way of defining a problem and its solution (Shore & Wright, 1998, 2011; Bacchi, 2009). This approach contributes to the current research literature on research integrity by challenging the idea that policies and practices react to pre-existing problems, and instead argues that these policies and practices are also active in producing those 'problems' (Douglas-Jones & Wright, 2017: 30). Therefore, while the policies and practices related to research integrity training for PhD fellows are usually informed by an argument that there is an extensive culture of malpractice, which pre-exists – and legitimises – actions to reclaim integrity, this approach suggests that integrity training for PhD fellows, when based on the idea of questionable research practice (QRP) and grey zone behaviour as highly prevalent problems, may play an unintended role in normalising the occurrence of QRP and grey zone behaviour. Taking this approach therefore enables the study to focus on the yet underexplored layers of tension between diverse locally embedded problematisations (Macfarlane, 2014; Tauginienė et al., 2019) and their 'lived effects' for the PhD fellows.

Fieldwork in a PhD Course: Data and Methodology

The paper is based on fieldwork and follow-up interviews with teachers and participants

of a compulsory two-day integrity course for PhD fellows at the faculty of medicine at a large Danish university. The university's graduate school offered the PhD course, Responsible Conduct of Research (RCR). The course had a capacity for 24 participants, and had a full workload of 3.10 ECTS (European Credit Transfer System) points. The course was developed and taught by the course leader and a teaching team of six experts who covered a range of different topics and issues. The course curriculum and official learning outcome are described in further detail under the first theme of the findings, which concerns the 'hidden curriculum' of the pedagogic design.

The course was studied using ethnographic participant observation. This means I participated in, and engaged with, the students and teachers throughout the two-day PhD course, focusing on the micro-level interpretation of integrity principles and conducting both formal interviews and informal talks with teachers and students (see also Sarauw et al., 2019; Wright et al., 2019). To gain an impression of the teaching team's considerations behind the course, the course leader and one of the teachers were interviewed after the first course day. The course leader and the teacher were selected for the interviews, because they had both been engaged in the working group behind the development of the course. They had both taken an active part in discussions revolving around research integrity training on a cross-faculty level at their university, and they were both members of the university's Committee for Responsible Conduct of Research and Freedom of Research (Research Practice Committee, in short). For these reasons, the course leader and the teacher are not representative of all seven members of the teaching team, but I expected their reports to be telling for the institutional context in which this particular integrity course was developed.
The selection of PhD fellows for the semi-structured interviews was guided by an online questionnaire that was circulated among the total cohort of course participants before the course. The aim of the questionnaire was to capture the variations within the cohort in terms of gender, age, research interest and fellowship. [i]

After talking to the PhD fellows during the course, six of them were invited to participate in a focus-group interview, which was undertaken immediately after the course. In order to gain further knowledge of the PhD fellows' individual reflections on the integrity course, if/how these reflections related to their specific situation, and the extent to which they developed over time, four focusgroup members were subsequently invited to be interviewed individually, in two rounds, six months and 12 months after the course. Two males and two females of different ages and from different disciplinary areas were invited to participate in these follow-up interviews. Due to maternity leave, one of the female interviewees, however, only participated in one follow-up interview. To maintain the data commensurability, I have chosen not to include this interview in this paper.

All interviews had a duration of approximately one hour and took place at locations chosen by the interviewees, either within the medical faculty, at a nearby caf. or in the university hospitals where they were employed. All interviews were semi-structured and informed by the foregoing fieldwork observations, including document studies of course material and official policy documents, revolving around the research integrity training at the medical faculty. The semi-structured interview guide comprised questions about the interviewees' considerations concerning the integrity course in the context of their own experiences with being/becoming a researcher (e.g. the everyday practices and working conditions and their research environment, scientific virtues, and the relation they had to their supervisor). All interviews were audio-recorded and transcribed in full length verbatim. The PhD course was taught in English, but all interviews were conducted in Danish. Accordingly, all quotes in the paper are my English translation of the original Danish wording. In order to convey the overall meaning, this has at some points implied an interpretative

dimension, where single words and phrases have been adapted.

The field notes and interview transcripts were coded and analysed thematically, using the concept of 'problem narrative', which served as a guiding principle for the coding as well as the analyses emerging from this coding.[2] The analyses followed the relevant points of Carol Bacchi's 'What's the problem represented to be?' (WPR) approach (Bacchi, 2009:2–9), focusing on how the 'problems' to be solved by research integrity training were represented in course materials and interviews; the presuppositions or assumptions that motivated this representation of 'problems', and the effects the representation had for the PhD fellows' outcome of participating in the course. Inspired by the policy of anthropology tradition (Shore & Wright, 1998; Wright & Reinhold, 2011), the coding and analyses furthermore encompassed a focus on potential tensions between different problematisations within the material as well as the messy and multi-determined 'lived effects' of these tensions.

The analytical focus on 'problem narratives' has affected the findings in the following ways. Firstly, it repeatedly foregrounds 'problems' and tensions emerging from the data, while elements that did not involve such 'problems' and tensions have not been given the same attention.[ii] Secondly, due to the poststructuralist framing, the analyses are not looking for a stable, autonomous, pre-discursive individual behind the statements of the interviewees. Instead, all statements were approached as provisional, processual and multidetermined 'subject positions'[iii] that are continuously established and re-established within a given set of power relations (Foucault, 1982; Mouffe, 1992; St Pierre, 2011). In the analyses, I have also chosen not to distinguish between statements made by the PhD fellows in the first and second follow-up interviews. Hence, while in particular one of the PhD fellows (Interviewee C) underwent a significant development between the two interviews, the analytical focus on 'problem narratives' implies that the analyses primarily include statements from the first follow-up interview, in which the interviewee discussed the dilemmas he experienced as a complete newcomer to research.

All quotes have been approved by the interviewees in their current translation from Danish to English. As part of the approval the interviewees were invited to comment on whether they recognised themselves in the analyses. Some of them gave suggestions to sharpen the English translation, and all suggestions have been implemented in the text. The course leader furthermore asked me to clarify that the PhD course has been developed since 2017 when the fieldwork was conducted. She underlined that she did not recognise the conclusion that the course may contribute to normalising questionable research practice (QRP) and grey zone behaviour in response to the course leader, I would therefore once again like to underline that the analytical focus on 'problem narratives' implies a foregrounding of problematisations and tensions, which are not necessarily representative of the PhD course as such. Furthermore, the conclusion is based on the PhD fellows' account, and, as displayed in the analyses, structural matters as well as the PhD fellows' prior experiences with QRP and grey zone behaviour were decisive for their 'moral' learning outcomes.

The Significance of the Fieldwork within the Larger Research Context

While researchers investigating academic integrity predominantly draw on multivariate analysis using surveys/questionnaires, documentary analysis and, more occasionally, interviews, (Macfarlane et al., 2014), this case study has a strength in its ethnographic approach to policy analysis, based on fieldwork observations and interviews with the actors involved. The case study arises from a larger research project, 'Practicing Integrity'[iv], which was funded by the Danish Ministry of Higher Education and Science (2014–19). This larger

research project researches the history of the emergence of international and national codes of 'integrity', how they are being translated into institutional procedures and educational courses, and how early-stage researchers navigate their requirements in the context of management and performance incentives, research and funding conditions and the challenges of career development. Within this wider context, the medical sciences are an interesting area of study. First, because political narratives about scandal and malpractice are often associated with the medical sciences (Bone, 2012; Reubi, 2012; Hedgecoe, 2017). Second, because the medical sciences have often been forerunners in developing the courses and integrity training formats that are currently spreading to other faculties (Degn, 2017; Sarauw et al., 2019). If not generalisable to all disciplinary areas, this case study therefore provides a strong empirical platform for discussing the implications of the development within the medical sciences as an assumed signpost within the increased institutional concern with creating research integrity training.

Findings

The following are the main themes of this study. Based on fieldwork observations from the PhD course and interviews with the course leader and teacher, the first theme comprises two major findings. First, the course appeared ambiguously planned, as actors within the same organisation built on different ideas about the purpose of the research integrity training for PhD fellows, which also implied quite different ideas about how the training should be formed. To this end, it was found that the course comprised a 'hidden curriculum'. While this curriculum was not explicit in the official learning objectives of the course, it was systematically enhanced during the course through a series of reflexive and student-engaging pedagogies that focused on QRP and grey zone behaviour, which the teaching team believed was the main problem to be solved by the integrity course. Second, it was found that pedagogic concern with the individual researcher's ability to reflect upon their own practice implied a shift away from responsiblising the research institutions, as did the international and national codes of conduct, and towards responsiblising the individual PhD fellows who participated in the course.

The second theme concerns the PhD fellows' accounts of the integrity course. The first key finding within this theme was that the three PhD fellows who were interviewed for this part of the study all found that the reflexive pedagogies' emphasis on the prevalence of QRP and grey zone behaviour to some extent contributed to normalising QRP and grey zone behaviour. However, a second key finding was that the extent to which the interviewees accepted degrees of QRP and grey zone behaviour, e.g. as a prerequisite for career advancement, varied according to age, scholarship, relation to the supervisor as well as established power hierarchies and practices within their research environments.

The third theme concerns the vision of changing the culture by means of research training for PhD fellows, which is found in international, national and institutional policies and strategies, as well as in the teaching team's visions behind the course. A key finding under this theme was that, after the course, the PhD fellows did not perceive themselves as being capable of acting as agents of change in their research environments. They often situated themselves at the bottom of well-established hierarchical structures, whether in relation to their supervisor, or structurally within research teams or departments, against which they did not feel empowered to speak up after participating in the integrity course. In particular, the co-authorship-based incentives for career advancement made them feel that they were presented with an impossible task.

Theme One: The 'Hidden Curriculum'

The two-day PhD course, Responsible Conduct of Research (RCR), was offered by the

university's graduate school. The course had a capacity for 24 participants. It had a full workload of 3.10 ECTS (European Credit Transfer System) points and had been mandatory for all PhD fellows since spring 2016. By the time of the fieldwork, the course had been running approximately four times a year to cover the demand.

The course was opened with an eight-hour introductory online session (supplied by the commercial provider Epigeum), followed by two independent course days with participant attendance. The learning objectives listed in the course description included: 1) Familiarity with Danish Code of Conduct for Research Integrity, guidelines and standards, 2) Understanding principles of integrity and responsible conduct of research, and 3) Ability to identify misconduct and questionable research practice. The course leader and a teaching team of six experts covered these topics and issues.

The teaching was based on a combination of lectures and active participation, for example through online polls, plenary and group discussions of cases and an individual case assignment. On the first day of the course, there were seven sessions of 45 min. After the first day, there was a two-week break in which the PhD fellows worked individually on an assignment regarding dilemmas with cases of malpractice or QRP that they had experienced or heard about in their own research environment. On the second course day, the PhD fellows met and discussed their casework. The last day also included a lecture on conflicts of interest and procedures for handling suspicions of research misconduct.

All three points of the official learning outcome were explicitly addressed and covered on the individual sessions, which had the following session headings: "Responsible conduct of Research (RCR): Principles and guidelines", "Research misconduct and QRP (Questionable Research Practices)", "Plagiarism", "Authorship and plagiarism", "Dilemmas in relation to Responsible Conduct of Research (RCR)", "Conflicts of interest and do's and don'ts in fund applications and during review", and "Responding to research misconduct, why and how?" In addition to these, the fieldwork observations unveiled a 'hidden curriculum' (Dewey, 1916) which added an unofficial fourth learning objective to the course. This fourth learning objective concerned the participants' ability to reflect upon dilemmas within their own research practice, while projecting the idea that all researchers within the medical sciences are frequently confronted with situations that may lead to QRP and grey zone behaviour (see Sarauw & Mejding, 2020 for a detailed analysis of this dimension).

While other categories of the international and national codes and guidelines for research integrity, such as misconduct, which is further defined as falsification, fabrication and plagiarism (FFP), can be sustained by relatively clear 'do's and don'ts' in a programme of research integrity training, the categories of QRP and grey zone research are inherently dilemmatic, and, to some degree, open to interpretation. As indicated by the adjectives 'questionable' and 'grey zone' it is not always obvious what should be perceived as good conduct of research. The two categories therefore by their nature place a difficult task of continuous reflexivity about one's own research practice onto the shoulders of the individual researcher – and it was this task that I found to be represented in the 'hidden curriculum' of this particular course.

Although not explicit in the official learning outcome, a reflexive dimension was present in the pedagogic design throughout the course. All sessions included active participation, group work and discussions of cases, interactive online polls, and, between the two course days, the PhD fellows were asked to submit a written assignment based on their own

experiences with research integrity dilemmas. As the course progressed, the problematisation of everyday QRP and grey zone behaviour became manifest in the teaching in several ways. In one of the first sessions on the first course day, for example, the participants were shown a slide with a drawing of an iceberg, while the teacher explained that famous scandals such as the "Penkowa scandal" where Denmark's star neuroscientist and winner of the national Elite Research prize was found to have fabricated her research and falsified results, represents only the visible tip of the iceberg. According to the teacher's analogy, however, the more dangerous part was lurking beneath the surface in the everyday practices of researchers, who overall consider themselves decent and honest.

Later the same day, the PhD fellows were asked to answer an online poll, based on interactive software that enabled the participants to answer anonymously. The questions were designed to reveal, first, whether they had lied or cheated since January that year, and, second, if they considered themselves honest and trustworthy individuals. A majority of 73% percent replied that they had recently lied or cheated, but 96% still considered themselves honest and trustworthy individuals. For the remainder of the course, the teacher would refer to this discrepancy to show that people often see themselves as honest and sincere without being 100% honest and sincere. In this regard he problematised the PhD fellows' assumed lack of awareness of their own roles as possible contributors to a regime of grey zone conduct in research. This problematisation also served as a point of reference on the second course day, when evaluating the PhD fellows' case assignment about their own experiences with research integrity dilemmas.

While the international and national codes of conduct for research integrity often problematise structural challenges such as globalisation, increased competition and publication pressures, which are seen as harmful not only to research but also to society (OECD, 2007; European Science Foundation, 2011, 2017; Danish Ministry of Higher Education and Science, 2014), this PhD course problematised the everyday practices of grey zone research and the individual's (unintended) inclination to cheat as the main problem to be solved by the research integrity training (see Sarauw et al., 2019 for a comparative study of this tendency across faculties). In the following quote, the course leader expands on the teaching team's rationale behind this change of focus:

> We have agreed that the scandals are not interesting […]. We have decided that our [the teaching team's] starting point is that we trust people, and that ninety-nine percent of all researchers are honest and decent people. You cannot avoid scandals. A course like this does not help people who have a psyche that makes them sit and invent animals that have never existed or data they have not provided. The avoidance of scandals has just never been our goal. Our goal is the culture. I think awareness makes a difference. I want them to be able go back home and ask questions […]. Because we can all do something unintended, because we are too busy. (Course leader, May 2017).

In the quote, the course leader explicates the shift from focusing on major scandals to looking at the small everyday breaches as the problem to be solved by the integrity course. In her opinion, scandals were caused by a minority of people who had a "psyche that makes them sit and invent animals" and such people could not be helped by a PhD course in research integrity. Therefore, as she explained, the target group of the course was the ordinary PhD fellows, who she considered to be "honest and decent people" who might do "something unintended." Therefore, in the eyes of the course leader, the purpose of the PhD course was to prevent such unintended actions by creating "awareness" of their occurrence and enabling the participants to "go back home and ask questions" in their own

research environments.

In the following quote, the teacher discusses the initial discussions that the teaching team had with the faculty management about the aim and scope of the PhD course:

> After all, it is very paradoxical. It is, on the one hand, a priority because the management says that they want it. However, when they [the faculty management, ed.] suggested: "Let's just run it as mass attendance courses", then it is not a priority. […] What works on a course like this is the discussion, where you are allowed to relate to cases, and where you are allowed to relate to the dilemmas you face. Integrity is not a question of calculating right or wrong. It's all about the dilemmas that you face […] but again, some incentive systems make it favourable for the medical faculty, perhaps even as the first faculty, to show that we have this as a compulsory course that all our students pass through. See we are good! Tick box, tick box, tick box. There is an incentive for the university to do this, but this is not the same as if there is a real commitment to creating more honest and trustworthy students and researchers. […] Morality and ethics are something that you have to practise repeatedly. It's not something you can practise once a year and then say that you have practised. (Integrity teacher, April 2017).

The quote displays how different definitions of the kind of problem the integrity training for PhD fellows should solve also varied among actors within the same institution. According to the teacher, the faculty management saw the research integrity training for PhD fellows as an opportunity to strengthen the reputation and competitiveness of the institution (the managemnent's problem definition) by showcasing to the public that the faculty was acting in accordance with the principles of responsible conduct of research (the management's solution). In the teacher's account, this represented an insufficient understanding of the problems related to research integrity, and how they should be solved. In its place, he defined the problem to be the individual researchers' lack of reflexivity in relation to their own research practice, and specified the solution as repeated discussion and casework in relation to "the dilemmas you face."

Both the teacher and the course leader explained that the resources allocated to the PhD course were the result of a negotiation between the teaching team and the faculty management. They also underlined that, as the PhD course evolved (as it had been running 4–6 times a year since 2014), the course itself became strong evidence of the need to focus on the individual's ability to reflect upon matters of integrity in the context of their own research practice. In this quote, the teacher explains what the teaching team learned from the PhD fellows' case assignments during first years they were teaching the course:

> In the beginning, we [the teaching team] discussed whether the PhD fellows had any experiences with misconduct, but then we said to them: "You must write about a case. It may be self-experienced, but you may also invent something." And we saw […] that the level of detail in their cases was so rich that it could not be complete fiction. It was clear that they had experience with this. They know what it is about, and therefore we could afterwards go out and say: "Do you know what, this problem is larger than you expect. Perhaps you think it is only a small thing, related to your own research, but it exists out there." Those two polls I took [in the lecture on the first course day, described as part of the fieldwork observations above] also reflect it. Eighty percent of the PhD fellows say they know about it, and it is not because they have had years of experience and met thousands of researchers. Therefore, I think we have evidence to say that it is more widespread than we expect […]. We are all 'small

> cheaters', who want to find those short cuts that make life easier for ourselves. (Integrity teacher, April 2017).

The teacher explained how the reflexive dimensions of the course and its emphasis on QRP and grey zone behaviour as a prevalent problem were continuously developed based on the experiences from previous courses. The polls and case assignments had served as evidence that the PhD fellows were already familiar with QRP and grey zone behaviour, and, according to the teacher, this confirmed that the pedagogic focus on the individual's reflexivity was an acceptable choice.

In summary, the analyses under this theme show how competing understandings of the kind of problems that integrity training for PhD fellows should solve were at stake in the development of the PhD course, ranging from scandal, reputation and competitiveness to the individual researcher's lack of individual reflexivity in relation to QRP and grey zone dilemmas. While the reflexive pedagogies of this 'hidden curriculum' appeared well argued and well evidenced in the narratives of the teacher and the course leader, the findings under the next theme show that the focus on the individual fellow's ability to handle QRP and grey zone research did not represent a feasible solution for all PhD fellows on the integrity course. Firstly, the PhD fellows believed that the PhD course was in danger of normalising QRP and grey zone behaviour. Secondly, while the faculty management clearly did take responsibility for the matter by providing this compulsory integrity course for its PhD fellows, the course's emphasis on the agency of the individual PhD fellow can seem contradictory to the overall policy documents' concern with the responsibility of the institution and senior staff for creating a culture of research integrity.

Theme Two: The PhD Fellows' Representations of the Integrity Course

This theme introduces three PhD fellows (Interviewees A, B and C), who attended the integrity course at the medical faculty in Spring 2017, after which they participated in a focus-group interview and two individual follow-up interviews six and 12 months after the course. The analyses concern the three interviewees' accounts of the course; the extent to which they identified with the idea QRP and grey zone behaviour as a prevalent problem in their own research environments, and how they perceived the individualisation of responsibility in the context of their own experiences.

The analyses start by giving an account of the PhD fellows' immediate reflections on the course, focusing on the degree to which they familiarised with the course's problematisation of QRP and grey zone behaviour as a prevalent problem within the medical sciences (Subtheme A). Against this background, the analyses explore the possible intersection between these reflections and the PhD fellows' working conditions and experiences of being positioned within particular hierarchies of power in their respective research environments, including the relation to their supervisor (Subtheme B).

Subtheme A: The PhD Fellows' Representations of QRP and Grey Zone Behaviour

An interesting finding under this theme was that only one of the three interviewees identified with the course's representation of QRP and grey zone behaviour as being a prevalent problem within their own research environment. While Interviewee C saw the course as an adequate representation of the problems with QRP and grey zone behaviour within his own research environment, Interviewee A suggested that the course was in danger of normalising these practices as something that that must be done to advance a career within the competitive structure of the medical sciences. In between these two positions, Interviewee B found that the course's representation of QRP and grey zone behaviour as a prevalent problem had encouraged her to form her own moral attitude. The analyses indicate a coherence between the PhD fellows' acceptance of the course's representation of QRP and grey zone

behaviour as a prevalent problem within the medical sciences and the extent to which they had experienced this to be a legitimate discourse within their own research environments. In this quote, Interviewee A explains how he felt manipulated to believe that QRP and grey zone behaviour were widespread and that he was himself a potential contributor to this regime:

> That question about lying was a trick […]. If my wife asks me if she looks good in her pants, and I say, "Of course", even though I may not think so. I think this is very different from lying about having applied for permission from the Data Protection Authority before you started your research. I think there is a huge difference. At least I felt provoked by it, and I don't think I was the only one there. I think people can distinguish. (Interviewee A, November 2017).

In the quote, Interviewee A, a 35-year-old PhD fellow in neuro-medicine, shares his reflections on the course poll, in which the participants were asked if they had told lies in the past three months, and if they considered themselves honest persons. The quote shows how Interviewee A was at first irritated by the equation that was made between the polls, in which it was intimated that if the PhD fellows answered yes to the question about lying in their private lives, they would also be inclined to lie in their research. From Interviewee A's point of view, the "trick" with the poll exemplified how the reflexive course pedagogies might potentially contribute to normalising a false image of the health sciences as a culture where everybody cheats on a minor scale – and where it is legitimate to do so:

> I remember that I left the course with the feeling that it's okay to add an extra author. From what I heard people saying, it is very common. Everyone does it anyway. It's not that bad. I think they [the teachers] should strengthen the moral guidance a little bit. That is to say, they should say that it is in fact wrong. […] The problem is that it is a question of interpretation, and the interpretation is handed over to the individual, and to the morals of the individual. I believe there are people out there for whom ambition overshadows ethics. I believe that many of them will think twice, but I still think there's someone who will say: "I just have to have this one [publication], and next time, you'll be on mine, and then we have helped each other." (Interviewee A, November 2017).

In this quote, Interviewee A problematises the moral open-endedness of the reflexive course pedagogies. He found that the course's reoccurring representation of everyday QRP and grey zone behaviour in combination with a lack of moral guidance from the teachers left him with an impression that it would be "okay to add an extra author" since "everyone does it anyway." Furthermore, Interviewee A found that the pedagogical open-endedness implied a negative individualisation, in which the "interpretation is handed over to the individual." In the last part of the quote, Interviewee A relates this problematisation to what he saw as an unresolved conflict between compliance with the principles and guidelines for research integrity and the established power relations and cultures in academia, in which "ambition overshadows ethics."

Interviewee B did also not familiarise herself with the course's representation of everyday QRP and grey zone behaviour as a prevalent problem. Unlike the teacher who referred to the PhD fellows' case assignments as evidence that the problems with QRP and grey zone research is "out there" and "it's larger than you think", Interviewee B did not recognise these practices from her own research environment. In this quote, she explains how she ended up making up a case for the case assignment, based on five

different stories that she had been actively "digging out" by talking to people in her research environment:

> We had to write about a case and I didn't immediately have a story to tell. But then I asked people [in my research environment] and I ended up fabricating a case that was a mix of five minor stories. I had not experienced anything myself where I had been thinking that there was misconduct involved, but if you dig for it, you may find something. Then you have to be careful not to believe that no matter where you look, there is something. In one's everyday life, one does not encounter it, but of course you find something if you are looking for it. That was probably what shocked me the most after the course. Because you started to look for it. (Interviewee B, June 2018).

Interviewee B was a 24-year-old PhD fellow in biomedicine, the youngest participant on the integrity course. Based on the quote, it seems as if Interviewee B fulfilled the teaching team's ambition that the PhD fellows should gain an awareness and reflexivity about problems within their own research environment. This is for example seen in that she describes how the case assignment had contributed to opening her eyes to the occurrence of QRP and grey zone behaviour. The quote, however, also displays that she had "fabricated" a story based on five minor stories. Implicitly Interviewee B herby suggested that the case assignment might have had the effect of incentivising the PhD fellows on the course to invent problems where there were none.

In the following quote, Interviewee B discusses the idea that the course also may have had a co-constitutional influence on the PhD fellows' ideas of the prevalence of QRP and grey zone research in further detail:

> When I was on the course, I thought: 'Stop saying that researchers are cheaters!' I was a little provoked by it. But what would the course be if this was not so? It must have some content, so maybe they used those horror campaigns to make people really reflect on what kind of a researcher they want to be. Do you want to be Penkowa [name of the Elite Prize winner behind a major scandal in Denmark] or not? Normally, you don't notice the everyday issues. Maybe you have seen things that you thought were a little odd, but on the course, you were told that these things are actually wrong.[…] It provoked me that they said: "Look how many people are doing it." I interpreted this slightly as if they said: "See how awful an industry it is." Therefore, I must also show that there is some good [researchers] in between.[…] That was my personal assessment, but it may well be that you could say: "Okay, if everyone else does it, then I also ought to do it to be competitive." (Interviewee B, November 2017).

Interviewee B's reflects upon the implications of the course's representation of the medical sciences' "awful industry", where "all researchers are cheaters." Since Interviewee B did not recognise the negative representation from her own research environment, she believed that it might have been an intended pedagogical feature. In her own case, for example, the negative representation had helped her to reflect and decide for herself that she would like to stand out as the good example. However, she found that some of the PhD fellow might interpret the "horror campaign" as if QRP and grey zone behaviour were represented as prerequisites "to be competitive." To this end, her augment resonates well with the arguments of Interviewee A, but in contrast to Interviewee A's impression that the interpretation was "handed over to the individual", Interviewee B found that the course did provide information about what is "actually wrong".

Interviewee C, for his part, partially empathised with the course's representation of the medical sciences as a culture in which QRP and grey zone behaviour prevail:

> I had to exaggerate so that there was something exciting in the case. Again, my case involved co-authorship – should he or she be added as co-author? Don't all the others probably do that too? The basic part was taken out of my daily life, but I also had to angle it a little so that it became juicier. […] My experience is that issues with co-authorships exist in many environments of medical sciences. (Interviewee C, June 2018).

In the quote, Interviewee C, a 27-year-old PhD fellow in medicine, explains how he added some small inventions to his case assignment "so that it became juicer." Unlike Interviewee B, who invented her entire case, Interviewee C explained that the basic parts of his case were taken from his daily life. In this vein, Interviewee C was the only one of the three interviewees who corresponded to the problem narrative of the teacher about the PhD fellows' familiarity with QRP and grey zone behaviour prior to the course. Perhaps for this reason, Interviewee C appeared more satisfied with the reflexive course pedagogies than the two other interviewees:

> It's good to have considered that you should actually think about things. There may be someone who does not follow the rules, but if you can live with yourself, that's fine. Well, then you might also have had some prerequisites for the choices you think you can live with. Many of the issues on the course, namely the grey zone in the middle, which is called 'questionable' – it's not misconduct, but questionable – I thought that was good to have discussed. Because when it is a grey zone, it's because it is difficult. But then the course could not come up with what you should do. […] How to meet the criteria is also very vaguely formulated, so that you can interpret it in several ways. (Interviewee C, December 2018).

In the quote, Interviewee C explains how he found the reflexive pedagogies that "could not come with what you should do" to be an adequate reply to the experiences he had from his own research practice. Instead of distancing himself from the idea of QRP and grey zone behaviour as a prevalent problem, as did the two other interviewees, Interviewee C made sense of the course's categorisation of "grey-zone research" and "questionable research practice" as inherently dilemmatic categories. In Interviewee C's understanding, these categories were purposely "vaguely formulated" because of their dilemmatic nature. Conversely to, while Interviewee A who problematised that the interpretation was handed over to the individual, Interviewee C therefore found that ideally it should be up to the individual to decide if "you think you can live with it."

Subtheme B: The Significance of the PhD Fellows' Working Conditions and Prior Experiences

A second key finding regarding the PhD fellows' accounts of the course was that their individual situation, including age, family, future career plans and relation to the PhD supervisor, all seem to play a role in their reflections after participating in course. Interviewee A explained the following about his career aspirations and relation to the PhD supervisor:

> The three letters [PhD] don't mean much to me. I would have done well without the research. So, I'm relatively free. If demands are made that I don't think I can live up to, or if corners are cut that are not compatible with my personal integrity, then I am free to say that I will not participate. To me it [the PhD] was just the convenient choice because I wanted to spend more time with my family […]. In relation to my supervisor, I am also the only one who has figured out how to do this thingamajig

> with electrodes and so on, and therefore I am quite free. I think that being an expert has been useful. That gives you a kind of momentum. (Interviewee A, November 2017).

Interviewee A represented "personal integrity" as preconditioned by being "relatively free" from outer pressures from the research environment and/or the PhD supervisor. Talking of his own situation, he found that this freedom was partly enabled by the fact that he did not aspire to a career in research, partly because of his unique expertise in "this thingamajig with electrodes" which he believed had provided him with "momentum" in relation to his PhD supervisor. In other words, A defined "personal integrity" in opposition to aspiring for a career in research and/or being dependent on the PhD supervisor's goodwill (which is the situation for quite a number of PhD fellows). Hence, he implicitly problematised the research culture and supervisors that produce these pressures. However, Interviewee A also found that the PhD course had contributed to sustaining his "personal integrity" by introducing the shared guidelines and rules:

> Now [after participating in the course] I have something to refer to, rather than my own set of rules. So, instead of saying, "I don't want to do this, because it violates my own set of rules", it may be easier to get through with: "I do absolutely not think we should do this, because on the research integrity course we have learned that this is not to be done." It gives another authority because you have the university and the faculty behind you. […] I don't have a problem with burning bridges, but were I considering a career within university research, or if I was going for a professorship, I believe I would think twice. (Interviewee A, November 2017).

As regards power relations, Interviewee A found the integrity course valuable, because it provided him with a deeper knowledge of the international and national codes and guidelines, which he found useful in order to sustain his arguments in case of future conflict. However, the course did not succeed in eliminating Interviewee A's impression that PhD fellows who want a career within research have to "think twice" about referring to the guidelines in order not to "burn bridges." Hence, for some PhD fellows, making use of the knowledge achieved on the course might be directly damaging to their career.
In contrast to Interviewee A, Interviewees B and C both aspired to a career in research. For this reason, the two of them may serve as case points for exploring Interviewee A's idea that PhD fellows who aspire for a career in research may face difficulties with maintaining their integrity. Interviewee B explains her situation as being that:

> Research is something I do because I find it interesting. Because I have personal motivation and drive. I think it's exciting and that is what I want with my life, but […] I also want to have free time. I want to spend time with my friends, have children, and see my friends and family. There must be room for that. Otherwise, I think that you will not produce good research, because you just become a zombie in the end. So it's all conditional. […] Maybe my point of view relates to having a huge number of colleagues who are on sick leave due to stress and depression, and who are falling out of this world [the medical sciences] because it is too competitive. And I don't think it is worth it.[…] I'm still at an early stage of my project, but my supervisor has never pushed me to do any of the things they talked about [in the integrity course], and I don't think he will ever do so. He is so fond of the research I am doing, and I think he believes that the result will speak for itself. (Interviewee B, June 2018).

Interviewee B clarified that her dedication to research was driven by interest. She explained that the "too competitive" research environment with "colleagues on sick leave because of stress and depression" had made her prioritise her work-life balance at an early stage (being 24 years old at the time of the interviews). Albeit she talked about the research

environment in general terms, and not specifically pressures to commit QRP or grey zone behaviour, it seems as if Interviewee B shared Interviewee A's critique of the research culture being too competitive. In her own case, however, she had not experienced any kinds of pressures from her PhD supervisor, who she found supportive of her belief that the "result will speak for itself." Whereas Interviewee A appealed for an overall cultural change, the PhD supervisor's support may have influenced Interviewee B's outcome of participating in the PhD course in a different way:

> I have concluded that the research must speak for itself and not the number of publications on my CV. Yes, if anything, it [the PhD course] may have strengthened my attitude; that you should remember what is important and not stress too much. It's easy to get stressed and pressured. Then it may well be that you just make your results finer, e.g. by removing an outlier as the example in the case assignment [which was the case in another case assignment on the course], if it makes one's article easier to publish, but you just have to keep yourself far away from such pressure. When you do a PhD, it is the first research contribution you really add to. And I would not accept to publish something that was wrong […]. It may well be that since it is my own project, and I myself have figured it out, then I'm also very honest about it. (Interviewee B, June 2018).

In the quote, Interviewee B represents herself as being well aligned with the teacher and course leader's idea that problems with research integrity could be solved by enhancing the individual's reflexivity. In contrast to Interviewee A's idea that it may be difficult to maintain integrity if one wants a career within a competitive research environment, Interviewee B found that the course had helped to make up her mind about the kind of researcher that she wanted to be – a researcher for whom "the research must speak for itself and not the number of publications in my CV." While Interviewee A argued that PhD fellows will often have to "think twice" before referring to the knowledge of the codes and guidelines that were introduced on the PhD course, Interviewee B found that this knowledge had enabled her to take full responsibility for avoiding non-compliance with the codes and guidelines. Read in continuation of one another, the three PhD fellows raise important questions about the role of the supervisor and the local research environment for obtaining this kind of learning outcome. Particularly in the first interview, it became clear that Interviewee C found himself within a different set of power relations, which gave him a different framework for interpreting the integrity course. Firstly, Interviewee C had already began preparing for a career in research when he was a medical student and appeared more determined to pursue a career within research after the PhD. Secondly, while Interviewees A and B, albeit in different ways, defined themselves as being relatively free in relation to their supervisors, Interviewee C described himself as the "doer"[v] of a project that was conceptualised by his PhD supervisors, and in the beginning of the PhD period this may have implied in a more asymmetrical relation:

> Ethically, I think you should do it properly, but then the question is whether you are willing to compromise in order to achieve something in the end. That is to say, when you think, this is really what I want to achieve, also if I have to compromise. Sometimes there might be a higher end, which is about getting a breakthrough in your research, and that might make you bear standing as a co-author or having added someone who has not delivered. After all, the research results are not less true for that reason, and, within this culture, it is the norm. […] If it involves, for me, to be accepted and to get a foothold in this group and reach a higher end, and if that's what I have to accept, okay then, although I believe it is not appropriate. Then you bend it and say: "Well this is not something that is absolutely grotesque. It's not a misconduct." (Interviewee C, December 2017).

In this quote, Interviewee C argues that gaining a "foothold" within the research environment might legitimise minor compromises on one's integrity. In his experience, there was a tension between ideals (of the codes, rules and scientific virtue) and practice (of the local research culture, requirements and rules of acceptance) within the field of research integrity. In line with the two other interviewees, Interviewee C emphasised how social pressures from other members of the research team might contribute to normalising malpractice, but in contrast to the two others, he argued that minor compromises with for example co-authorships might be a precondition for gaining the acceptance of the research team. Interviewee C pointed to the individual as being responsible for judging what is to be perceived as the right and wrong conduct in research, and yet it seems as if "the norm" in the research environment had helped him to conclude that accepting questionable co-authorships might be legitimate strategy as a means to a "higher end", such as "making a breakthrough with your research." To sustain his argument, Interviewee C referred to the distinction between "questionable research practice" and "misconduct", which was present throughout the integrity course, and in this quote became a way of legitimising to accept a questionable co-authorship; it has no implications for the research results, he argues, and therefore it is "not a misconduct."

Analysed in continuation of one another, Interviewees A, B and C introduced important themes about the significance of differing individual motives for writing a PhD (in this case ranging from "the convenient choice" (A) over "research interest" (B) to "reaching a higher end" (C) for their outcome of the integrity course. There was, however, also a relative coherence between experienced pressures from the supervisor or other parts of the research environment and the PhD fellows' dissimilar ideas of what could be perceived as acceptable behaviour after participating in the course. Interviewees A and B, albeit in different ways, described themselves as relatively free from pressures from their own research environment. They were both critical about the course's depiction of QRP and grey zone behaviour as prevalent tendencies within the medical sciences, and none of them were willing to compromise on integrity matters. Interviewee C, who in the beginning defined himself as a "doer" of his supervisor's project, was on the other hand not surprised by the PhD course's representation of QRP and grey zone behaviour as a prevalent problem in contrast to Interviewees A and B, Interviewee C drew the conclusion that having a successful career may require minor compromises, e.g. in relation to co-authorship, which he emphasised as an example of QRP that may be acceptable because it does not influence the research content.

Based on these differences, it may be argued that the PhD fellows picked up elements from the course that they found useful in the context of their own research environment. For this reason, it can also be argued that the PhD course, perhaps due to the emphasis on individual reflexivity and the moral openness of the reflexive pedagogies, implied an individualisation of responsibility in terms of deciding what can be considered an acceptable conduct of research. While the current policies and guidelines emphasise the responsibility of the intuitions for creating a culture of research integrity, it seems as if this responsibility was delegated to the individual PhD fellows, who at the same time had to navigate in research environments that were more or less supportive of compliance with all aspects of the international codes and guidelines. Therefore, the case study also seemed to confirm the conclusion from a recent literature study (Muthanna & Alduais, 2020) that there is a strong connection between research supervision and research integrity, and that there is still an important task to be dealt with, for instance in terms of providing relevant training for the PhD supervisors.

Theme Three: The PhD Fellows as Agents of Change?

As described in the introduction, most international and national policies on research integrity include a shared vision that early career researchers should act as catalysts in changing the research culture after participating in integrity training similar to the integrity course of this case study. During this particular PhD course at the medical faculty, this vision became manifest in that the participants were asked to go back to their own research environments and act as role models, ask critical questions, and, eventually, report suspicion to the university's RCR committee or the national committee on scientific dishonesty.

However, a main finding within this theme was that, after participating in the integrity course, none of the three PhD fellows felt capable of going back to their own research environment and acting as agents of change in relation to academic integrity. According to the interviews, this was partially an effect of incentive systems and power hierarchies within their field, i.e., a longstanding culture revolving around co-authorship as a currency, and partially an effect of the fact that the PhD fellows felt left to their own devices on the question of how to navigate the system. They found themselves in a tense situation between trying to be good researchers and positioning themselves within a system with diverse forms of accountability, measures of publication output, and evaluations of their CVs for career advancement that ran counter to the principles of research integrity (cf. Wright et al., 2019). In earlier quotes, we saw how Interviewee B believed that one must start by changing one's own practice, while Interviewee A advocated the necessity of an overall structural change in the performance and publishing pressures, academic career structures and incentives. As can be seen from this quote, Interviewee C in particular problematised the asymmetrical power relationship between the PhD fellows as newcomers and the established culture, which he saw as the main reason that it would take more than a PhD course to change the culture:

> When you enter a completely new world, it's nice to know which holes to take care of and which frames you have to work within. It just gives one a better chance of being able to act in that world. […] When it's new you follow the stream until you find your foothold. If you unfortunately come to a dirty stream, then you follow it until you find out that it's not the way it should be. But then it's hard for you to break out. (Interviewee C, December 2017).

Interviewee C argued that PhD fellows always enter a process of socialisation, which is necessary to become a part of the research environment. In his own case, he believed that the PhD course had helped him find his own "foothold" instead of just following the "dirty stream." He also acknowledged, however, that even if enlightened by a PhD course about "which holes to take care of", it could be hard to break away from the culture into which one has been socialised. Interviewee A, who found that the senior generations' questionable routines were hard to break because they have proven efficient in terms of career gains for the senior generation, made a similar argument:

> I think it is utopian to believe that it can be as it should be, but I certainly think it will be better. I think it helps a little bit to begin with the youngest. At some point, I am going to sit with somebody who has become a professor in his or her own area, and who has actually been on the same course. Such a professor maybe thinks more about it than they did 20 years ago. But it requires that you have not yet entered a routine. Because [as a professor.] you have evidence that what you have done before has worked. So, if it ain't broke, don't fix it. […] You can't go to the university and

> say: “My supervisor was shabby there.” There I think people are more career-oriented. I think it is very, very difficult to change the characters of the senior staff. (Interviewee A, November 2017).

From Interviewee A’s point of view, changing the culture through integrity training for PhD fellows should be seen as a very long-term process. In the quote, Interviewee A addresses the eternal question of ‘chicken and egg’ in relation to integrity training for PhD fellows – is change required in a supervisor’s conduct (the chicken) prior to changing the conduct of the next generation of PhD fellows (the egg)? Or will change automatically evolve from the next generation? According to Interviewee A, the hierarchical structures and asymmetrical power relations were so strong that he found it unthinkable that the PhD fellows would feel empowered to go back and confront or report their supervisor after completing the integrity course. In line with Interviewee B (in the previous section), who decided that her contribution to changing the culture was to forego with a good example in her own practice, Interviewee A therefore argued that the PhD course’s aim of changing the culture would not be accomplished, until the PhD fellows will become professors themselves and will be able to act as role models for the generation after them. In the following, Interviewee C shares his reflections on the matter of change:

> How do we get a cultural change? Should we start from the top or do we have to start from below? Maybe that’s what this PhD course is saying: If we catch these green sprouts, while they are still formable, we can actually shape them as we want and in this way move the environments. I think it’s an important thing, but I just think the problem is deeper. In my case, for example; how can I influence a large system from below? Little me? […] I think in principle, if you, hypothetically, found out there was a problem and you shouted, then you would be put in your place. That’s just how it is. And then? […] I’d pull out rather than continuing a fight that would ultimately have a great impact on my PhD and my research. What is it? A fight against the system? Sometimes you have to choose the right fights at the right times. (Interviewee C, December 2017).

Albeit speaking of a hypothetical situation, Interviewee C almost repeats the situation laid out by Interviewee A in the previous quote that most PhD fellows will not speak up or report problems because they are concerned about how it will impact on their careers. In this regard, Interviewee C explained that he saw himself as being in an inferior position when measured against a system, which he expected would sanction his career, if he found that there was a need to speak up. In Interviewee C’s account, however, the individual “distinguished gentlemen” were not the cause of the problem:

> As PhD fellows are the lowest in the food chain, we cannot change what the distinguished gentlemen find right. If I don’t do what they say, I don’t have a future. That’s the problem. If you have to do something about the behaviour with authorship, you have to understand why it is that you add each other, and that is because you want jobs and you want funding. So, these are the employment criteria and assessment. That’s where to make a difference. […] Because, why do I want these co-authorships? In my younger days, it is because I need publications in order to get a PhD, and, after that, to get a better position. (Interviewee C, December 2018).

Interviewee C argued that the individual researchers themselves, as, for example suggested by the teaching team, did not cause the problems with QRP and grey zone research. In Interviewee C’s account, the problem was to be found on a “deeper level” in the incentive structures, underpinning the mentioned asymmetries of power. As an example of such

incentive structures, Interviewee C in particular emphasised the authorship-based employment criteria, which he believed incentivised early career researchers to accept dubious co-authorships. While the overall policies and the teaching team envisioned integrity training for PhD fellows as a means of changing the culture, C suggested that a better solution would be to eliminate the incentives for QRP and grey zone behaviour by changing the criteria for career advancement. By pointing to the need for an overall structural change in the incentives for career advancement, Interviewee C, suggested that neither integrity courses for PhD fellows nor relevant training for the PhD supervisors, as suggested under the previous theme, stand out as the only and best ways forward.

Discussion and Conclusion

This paper was introduced with a quote from Interviewee A, who used a metaphor about adapting to the "traffic circumstances" to indicate that the PhD course's focus on QRP and grey zone behaviour as a prevalent problem in the everyday lives of many researchers within the medical sciences might lead to normalising undesirable behaviour.
In a similar vein, the paper has employed the concept of 'problem narratives' to critically explore the constitutional effect in relation to different narratives about the kinds of problems that research integrity training is supposed to solve. Taking this approach, the paper taps into a sparsely explored field of study that concerns the local interpretation work taking place in the development and teaching of courses in research integrity for PhD fellows. I will now consider the implications of these interpretations in the context of a wider debate on how to deal with research integrity issues (Macfarlane, 2014; Bretag, 2016; Tauginienė et al., 2019).

Under the first theme of the analysis, it was found that the reflexive course pedagogies, which were intended to solve the PhD course's problematisation of QRP and grey zone behaviour as prevalent problems within the medical sciences, implied an individualisation of the responsibility for ethical conduct of research that ran contrary to the international and national policies and their emphasis on the responsibility of the institutions and senior researchers in creating "a culture of research integrity" (ALLEA, 2017). The university did take responsibility by running a compulsory course on research integrity for PhD fellows, but through the course's emphasis on individual reflexivity about QRP and grey zone behaviour within one's own research practice this responsibility was passed on to the individual PhD fellows. Regardless of the teaching team's sound arguments for not focusing on major scandals and misconduct, the findings under this theme therefore call for a discussion of the extent to which this individualisation may limit the effect of the PhD course in strengthening the wider institutionalisation of a research integrity culture.

The second theme, concerning the PhD fellows' accounts of the integrity course, showed that the course's emphasis on QRP and grey zone behaviour as being a prevalent problem within the medical sciences to some extent served to normalise the questionable behaviour that the PhD course was initially conceived to prevent. The interviews with the three PhD fellows, however, also showed that individual career aspirations and working conditions, i.e., the relation to the PhD supervisor and power relations in the research team, were crucial to their outcome of the PhD course and their conclusions about whether QRP and grey zone behaviour were acceptable or not. As also indicated by previous studies (Muthanna & Alduais, 2020), in particular the PhD supervisor seemed to play a major role, and it seems as if there is still an important task to be dealt with in terms of providing relevant training for the PhD supervisors.

The significance of established hierarchies of power also applied to the findings under the third theme, which concerned the role that integrity training for PhD fellows may play

in creating a culture of research integrity. A key finding under this theme was that, because of the uneven power relations in their field, none of the three interviewees felt empowered to immediate action after participating in the PhD course, e.g., by going back to their research environments and speaking up about the problems they experienced. Furthermore, their frustration with the co-authorship-based incentives for career advancement suggested that, while the PhD course created awareness and to a wide extent led them to actively reflect on integrity matters within their own practice, overall, it did not prepare them for an active reflexive citizenship that would promote these integrity matters within their institutions. For these reasons, the study suggests that a long-term change of culture cannot be accomplished through integrity training alone. Rather, it demands a wider structural change in the incentives for career advancement that sustain the current asymmetries of power.

Compliance with Ethical Standards

The author declares that there are no conflicts of interest.

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1 A few weeks before the first course day, an online questionnaire was circulated amongst the 24 PhD fellows who had signed up for the course. The questionnaire provided demographic details about the participants' field of study, gender, age and nationality, as well as their prior experiences with integrity matters. The questionnaire was distributed by email through the course leader two weeks before the course. A total of 22 out of 24 (90%) participants answered the survey, and 15 (60%) completed the full survey. The average participant was a 34.9-year-old PhD fellow in the field of medicine, molecular medicine or health, the youngest was 23 and the oldest was 50 years old by the time they participated in the course. Only two of the 22 respondents answered that they did not have any expectations for the learning outcome. The gender distribution was more or less even; nearly all were of Danish origin, having completed their last degree at a university in Denmark. Only two were of non-Danish origin and had completed their last degree in Norway and Iran, respectively. Irrespective of this homogeneous demography, the respondents' experiences with research integrity prior to the integrity course were diverse. Half of them (48%) had not actively considered or addressed any integrity issues before the course. The other half (52%) had already actively considered or addressed integrity issues, for example regarding questions of authorship, patient ethics, or more technical questions of authorisations from the Danish Data Protection Agency, the Danish Medicines Agency or the Ethical Committee. The majority of the respondents had high expectations for their learning outcome of the course. Approximately 50% expressed a pragmatic-instrumental concern about obtaining more information about the rules and guidelines of research integrity; how to avoid pitfalls, and where to get help in order to

do things properly from the start. The other half undertook a more reflexive- and process-oriented concern with a deeper level of understanding and reflection by discussing practical issues and real-life examples. Capturing the main differences between the pragmatic-instrumental approach and the reflexive approach.

[ii] The concept of 'problem narrative' was not established as a prism for the analyses prior to the fieldwork, but was chosen along the way as diverse understandings of the purpose of integrity training emerged from comparing similar data on research integrity training on the three other faculties at the same university. Cf. Sarauw et al. (2019) these data displayed marked differences between the definition of the 'problems' the research integrity training for PhD fellows was intended to solve with different implications for the PhD fellows.

[iii] Foucault (1982) argued that individuals respond to different situations and issues by adopting 'subject positions'. Since each situation is unique and reflects current social expectations and contexts, positions are fluid, different positions can be maintained simultaneously.

[iv] Grant ID: 6183-00003B.

[v] "Doer" is Interviewee C's own wording in a part of the first follow-up interview, which is not included in this paper. However, I have chosen to take account of it here, because it indicates that Interviewee C, in particular in the beginning of his PhD period, saw the relation to the PhD supervisor as a 'principal-agent' relation, which was, by nature, asymmetrical.