

# Chapter 6

## Sex Education—Normativity and Ethical Considerations Through Three Lenses



Auli Arvola Orlander and Iann Lundegård

### 6.1 Focusing on Ethical Concerns with the Lens as a Metaphor

Viktor: Usually, only vaginal sex is regarded as sex ... the norm is that a woman gets her orgasm through vaginal sex ...

Ulrika: Yes.

Viktor: ... and that's the only thing that gives her pleasure.

Ulrika: Exactly! And the norm is that heterosexual sex is what's normal, so to speak.

Viktor: It is our macho culture that has created it.

All societal discourses, including school and education discourses, are entangled in values and norms. Irrespective of whether the educational content is drama, language or science, some specific value-based dimensions are highlighted as more important than others. Even when the students themselves are asked to discuss an issue, certain normative assumptions are given higher priority. It is important to pay attention to and discuss this tendency in the context of teaching as well as in the educational research that examines such teaching. In the short example above two upper secondary students, Ulrika and Viktor, point out what they identify as common sexuality and relationship assumptions in contemporary society. Together they identify common norms and ethical considerations they regard as being typically included in a discourse about human sexuality in society and in education: that sex implies penetration (and is that which gives a woman an orgasm), that sexuality should be defined on the basis of heterosexual relationships, and that the premises for these norms are set by a male-oriented society. The conversation between the

---

A. A. Orlander (✉) · I. Lundegård  
Stockholm University, Stockholm, Sweden  
e-mail: [auli.arvola.orlander@mnd.su.se](mailto:auli.arvola.orlander@mnd.su.se)

two students takes place in a classroom where they were explicitly assigned the task of identifying and discussing issues relating to sexuality which are taken for granted in our society.

This chapter highlights how ethical norms concerning human sexuality generally and women's bodies specifically manifest when we explore teaching through different lenses. Later, it also becomes clear how great the responsibility is that we as researchers carry when we want to make these conditions visible, since norms and forms of oppression are often situated in a contemporary context. While in some cases research ethics is limited to considerations only of those who participate in a specific study, we want to emphasise the importance of professional ethics. By this we mean "the researcher's responsibility towards research and the research community /.../ Issues of the researcher's behaviour in various roles, of responsibility in connection with publication, and of so-called research misconduct belong to this category." (Swedish Research Council 2017, p12).

To highlight the ethics in a classroom context we draw on the concept of transaction that the philosopher John Dewey developed during his lifetime, and in his final publication eventually refined together with his colleague, the political philosopher Arthur F. Bentley (Dewey and Bentley 1960). From the moment we are born, they claim, our lives unfold in a flow of actions in a certain environment. Instead of assuming the individual as the given object in analysis of knowledge production, their focus shifts to highlight ongoing encounters and actions within them as the object of analysis. These transactional events can then be analysed within different depths of field (DOF) depending on which encounters need to be focused on. Thus, it is possible to shift the analytical focus from one particular action and encounter to another taking place at the same time and in the same activity but from another depth perspective, where one is foregrounded and the other backgrounded. For example, the focus can be shifted from what is revealed by a student's individual reflection (depth of field one, DOF 1), to what comes up when a group of students take part in a conversation (depth of field two, DOF 2), or to what transpires in these narrow settings viewed in the context of the historical and social conditions in which they take place (depth of field three, DOF 3). The latter analysis may also be derived from what the philosopher Foucault (2002) came to call genealogy, simply described as the contingent movement of values and ethics that determines the boundaries of thought and morality in a certain domain and period — a historical and social context that, from a research ethics perspective, becomes crucial to consider.

In order to highlight this shift, from studying values and ethics from an individual perspective, to studying them as they develop in different transactions, we need a new metaphor. Here we use the terms foreground and background and the metaphor of lens. Rogoff (1995) explains how these lenses always occur as mutually dependent in the formation of an activity.

Nonetheless, the parts making up a whole activity or event can be considered separately as foreground without losing track of their inherent interdependence in the whole. Their structure can be described without assuming that the structure of each is independent of that of the others. Foregrounding one plane of focus still involves the participation of the backgrounded planes of focus (Rogoff 1995, s.140).

In the science of optics, we use various technical lenses to approach an object or phenomena from different depths of field. A stronger lens zooms in and distinguishes detail that a weaker lens cannot. A wide-angle lens reveals larger entities and relationships that the sharper lens cannot. If we apply this metaphor to the concept of transaction, it is not about lifting individual details out of an event, but rather gaining an understanding of phenomena taking place within different depths of field in the same activity, placing some issues in the foreground, others in the background. In the present context, this metaphor helps us when selecting events as they occur at different depths of transaction in a field that deals with teaching about sexuality and relationships.

### ***6.1.1 Companion Meanings***

In science education included and unfounded norms, or ‘extra’ meanings often resulting from what is not discussed, are sometimes talked about as “companion meanings” (Östman 1998). All teaching, it is thus said, comprises a companion meaning—a hidden message that we are not aware of. For example, when a biology teacher organises plants and animals in a food chain or as a trophic pyramid, it may imply that biology, as science, provides a true picture of how nature is construed. Presenting biology as an objective stance then becomes a value in itself. When another teacher in the same discipline uses biological knowledge to demonstrate how ocean oxygen interacts with the same chains and pyramids, and how this is critical for animal and human survival on earth, then the knowledge renders another kind of value for the students. The latter context includes a companion meaning that influences the students’ view on the utility of biology in societal issues, while the former claims an objective, factual description. Consequently, there are normative implications that give rise to ethical considerations about what is to be regarded as good, right or beautiful in all teaching. Often, this value-biased content is based on unreflectad habits, which have rarely, or perhaps never, been taken into consideration (Dewey 1957). Sometimes, however, it is useful to raise these unconsidered habits of teaching to the surface and examine what consequences such way to prioritise renders in teaching as well as in research. It was such a task that preceded the discussion between the students above, and also that to which we pay more detailed and closer attention in this chapter when using depth of field (DOF) as a heuristic. Before we proceed with the analysis, we describe the context in which the empirical data were recorded.

## 6.2 Five-Week Visit to a Science Education Classroom

In this chapter we use events from a science education classroom to highlight the ethics questions that come up in different depths of field while observing 56 students studying sex education. The students had given written permission to follow their work, all in accordance with current ethical regulations (Swedish Research Council in 2017). In a collaborative project between the biology teacher, Monica, and Auli (one of the authors), two upper secondary classes were followed for 5 weeks. During this time, different types of teaching took place. The overall theme of the students' work, as the teacher labelled it, was an examination of a "critical Review of Sexuality" and their task was to norm-critically examine something concerning human sexuality that they regarded as taken for granted in society. Or, as the teacher expressed it, to "search for norms on sexuality that you perceive as present in your everyday life". Moreover, to discuss what kind of consequences these norms could give rise to and how some norms could be challenged with the help of further knowledge of norm criticism and biology.

The data set consisted of several hours of audio recordings of student discussions, recorded student interviews and written submissions with examples of critical studies of norms. The chosen excerpts which demonstrate the analysis work with the three different depth perspectives illuminate not only the phenomena moving through different fields in an activity, but also the ethics that are evident in the students' discussions.

## 6.3 Ethics in Three Depths of Field (DOF)

In order to illustrate how norms in teaching can be highlighted by shifting focus we use the metaphor of lens and the associated concept, depth of field. We use three depths to zoom in and out on what takes place in different encounters. The first depth of field, DOF 1, focuses on the transaction taking place when an individual student is given the opportunity to take a step back and challenge common assumptions about sexuality and relationships. Here we are able to see what kind of framework the individual student constructs when given an opportunity to make a critical analysis of contemporary norms. Thus, the data involve the student's individual reflections and the statements they make before they begin a discussion with their classmates. The second depth of field, DOF 2, focuses on what happens within the immediate exchange of views in the encounters between the students related to the issues they raised in DOF 1. The data consist of all exchanges of content and values between the students when they were involved in conversation.

Finally, we zoom out. Thus, the third depth of field, DOF 3, focuses on what becomes visible when, as researchers, we highlight the transaction between what happens in the classroom and the unspoken historical and societal context within which this takes place (Foucault 2002) and what then, from a research ethics

**Table 6.1** A methodological heuristic describing the ethical concerns in three depths of field

Depth of field	Transactions to be studied and highlighted
DOF 1	Ethical concerns raised in transactions between an individual student and the content.
DOF 2	Ethical concerns raised in the transactions between students involved in a communicative activity.
DOF 3	Ethical concerns raised in the transactions between the communicative activities being studied and the historical and societal context within which these activities take place and the researchers' responsibility to shed light on this.

perspective, becomes important to take into account. In Table 6.1 we present a summary of the ethical concerns in the DOFs.

These three different lenses each bring different issues into focus and we need to be aware that it is always we as researchers who must take responsibility for the analytical tools we shape. The use of other “instruments” might have illuminated other patterns in the student discussions. Or, as Donna Haraway (1988) more poetically expresses it,

There is no unmediated photograph or passive camera obscura in scientific accounts of bodies and machines; there are only highly specific visual possibilities, each with a wonderfully detailed, active, partial way of organizing worlds. All these pictures of the world should not be allegories of infinite mobility and interchangeability but of elaborate specificity and difference and the loving care people might take to learn how to see faithfully from another's point of view /.../ (p 583).

Below we present three norm-critical considerations that the individual students themselves made in relation to the content (DOF 1). Thereafter we show what happened in the communicative exchanges in accordance with these considerations (DOF 2). Each example is followed by a brief summary of the ethical questions the students touched upon in conversation (Tables 6.2, 6.3 and 6.4). Finally, the third lens, DOF 3, focuses on what becomes visible when highlighting the content of the student encounters in relation to the historical and societal context within which they take place.

### 6.3.1 Example 1

#### 6.3.1.1 DOF 1: “Men have greater sexual desire than women”

The teacher, Monica, has divided the class into small groups consisting of 4–6 students. In one of the groups they discuss Alicia's norm-critical exposition (DOF 1): “Men have a greater sexual desire than women”.

Alicia begins by explaining how she conducted her investigation into how sexual desire is said to work and if there really are any relevant biological differences between men and women. She has looked at the norms that might maintain such an

**Table 6.2** Summary of ethical issues. Example 1

<b>Ethical concerns that the students touch upon in the norm-critical investigation of the topic “Men have greater sexual desire than women” and “Men are dangerous”</b>
– Should we assume that there is a biological difference between girls’ and boys’ sexual pleasure, or is it something you learn?
– Should we regard women’s sexual desire as shameful?
– Should we assume that there are hormones like testosterone and oxytocin that affect the sex drive of men and women?
– Should sex drive be regarded as something normal, natural and good for men?
– Is it good for society that men sow their seed?
– Should we think that men are just looking for sex?
– Should men who have no sexual drive turn to pharmaceutical companies?
– Do drug companies benefit from these norms?
– Does the norm relating to men having a strong sex drive normalise rape?
– Should one generalise, or is everything individual?
– Should girls be afraid of guys?
– Should all guys be horny?
– Can one generalise that all boys are dangerous because 99% of all rapes are committed by men?
– Should one have sex even if the girl does not want it?
– Should the erection be seen as an enabler of sex, or can a woman rape a man even if he doesn’t have an erection?

**Table 6.3** Summary of ethical issues. Example 2

<b>Ethical concerns that the students touch upon in the norm-critical investigation into “The length of the act of penetration is important” and “A woman should come through vaginal sex”</b>
– Should sex only be defined by penetration or should the whole act be included?
– Is there a norm that says that a woman should have an orgasm only through vaginal sex?
– Should only penetrative sex between men and women be counted/are homosexuals and people with several partners then excluded?
– Should orgasm be regarded as the main aim of sex/can touching also be counted as sex?
– Should there be a limit for what is counted as sex?
– Must the man delay orgasm in order to please the woman?
– Must the woman have an orgasm several times for it to be considered good

assertion and from which individuals and groups may derive benefit or disadvantage. First, she points out that it has not been an easy task to find reliable sources.

Alicia: I have not found very good sources, but I have found a few on the Karolinska Institute [a medical university] website. There was a professor in clinical sexology who claimed that no actual difference is supported by research. Anyway, boys and girls learn from early ages that the sexual desire of a woman is shameful. Then a woman can ... yes you simply get such an idea.

**Table 6.4** Summary of ethical issues. Example 3

<b>Ethical concerns that the students touch upon in the norm-critical investigation into “It is going to hurt and will bleed” and “It’s important to show that you are a virgin”</b>
– Should girls bleed, and should it hurt during first intercourse?
– Should the maidenhead burst during first intercourse?
– Should we use the word ‘maidenhead’ or ‘vaginal corona’?
– Does the claim that women should bleed during first intercourse cause problems?
– Should some cultures and religions be allowed to regard it as important that girls bleed during first intercourse?
– Should girls be worried that it will bleed and hurt?
– Should doctors in Sweden perform surgery on girls to enable them to bleed during first intercourse?
– Should girls have to bleed to show their virginity?
– Is it important to keep the myth alive?
– Can an operation be a viable way to help girls?
– Should doctors advise girls on how to make it appear as if the hymen had burst, or is it better for doctors to provide men with information about how it actually works?
– Is there a risk that the myth will persist if one fails to provide facts?
– Should Swedish hospitals consider how things are done in other parts of the world?
– Should well-known clinics practice such surgery, or is it just shady clinics that should perform them?
– Should women decide whether they want surgery, or should others decide for them?
– Should it hurt for the woman during first intercourse?
– Do girls need to be limited by the threat that it’s going to hurt?
– Can you see if a girl is a virgin?
– Should a girl be a virgin when she has intercourse for the first time?
– Should a girl prove that she is a virgin by showing that she has got rid of something that was never there?

Anna: Yes, it feels like it’s a norm somehow.

Alicia: Then how it works, the sexual drive ... Here I found some ... it was ... in the brain ... there are a lot of neurotransmitters operating. Among other things, a substance that regulates serotonin, and hormones such as testosterone and one named oxytocin affect sexual desire in women. And what are the norms behind ...? It’s regarded as good or natural for men, though ... because they are going to spread their semen, and that’s good for society. Other norms are also in circulation, like, men are just searching for sex. Those who benefit from these norms are ... What I most thought about was drug companies. Men who feel that they don’t have this sexual desire should be looking for medication, because it’s not considered normal to not have a strong sex drive. This explanation has also become a justification for men’s sexual behaviour. I also thought about that when it comes to a situation of rape there is so much focus on women’s behaviour. Perhaps because it is somehow normalised that men would have this awesome sex drive.

Here, Alicia refers to several norms, which, based on her individual reflection, relate to differences between men's and women's sexual activity — how women's sexuality can be seen as shameful, and how men are naturally expected to have a stronger libido.

### 6.3.1.2 DOF 2: “Men are dangerous”

Alicia continues to discuss her claims while her classmates present new angles on the same issue. The teacher interrupts and ask about the male role: What will happen if men are described as constantly horny and without control? What consequences arise from such a generalisation?

- Alicia: Then, it's individual how people are, so, it's sort of difficult. You shouldn't generalise, but it's hard to do something about it just because it has become kind of a norm ... that if a girl walks home by herself and happens to see a boy she becomes a bit scared, even though he is the world's kindest. It's unconsciously generalised that men are dangerous. It's hard to do anything about it just because ...
- Anna: Because it's like the norm. That guys are always so damn horny. It's also that you are lumping all men together ...
- Lotta: Isn't there some percentage ... that rapists ... that it's only men ... that it's kind of 99% men. Then it's no wonder you think so, but it is still wrong.
- Fredrika: I think if you want to have sex with a girl and the girl doesn't want to, it's still possible ... you know, vaginal sex. If a girl wants sex with a guy, it will not work unless the guy has a hardon. It rests very much on the guy, I think.
- Monica: Because men can't be raped?
- Lotta: So, of course they can. But I mean that they can't be raped by vaginal sex. If they don't get a hardon, they cannot ...
- Monica: So, there are other ways? We don't have to go into details ... It is possible to abuse. But it's incredibly hard to think that ... It's likely that the statistics are right, that there are more men. But what would happen if a man was raped by a woman?
- Ida: He's looked upon as rather weak.
- Sandra: It's like such a tremendously hard norm to kill. I don't even know where to start.

Now the conversation leads to a new norm about girls' vulnerability, about how girls are expected to be afraid of boys due to the danger of their strong sexual desire. But also, about how the men who fail to live up to this norm are regarded as weak. The students also discuss how rape statistics fuel the norm about men being dangerous. In Table 6.2 we present a compilation of the ethical questions that the students raised in their discussions, taken from DOFs 1 and 2.



### 6.3.2 *Example 2*

#### 6.3.2.1 **DOF 1: “The length of the act of penetration is important”**

In another group (mentioned in the introduction as having discussed the norm of penetration) Viktor shifts focus, introducing the idea that people generally believe penetration should last for a long time, (DOF 1). Another student in the group, Ulrika, agrees:

- Viktor: Do you only count penetrative sex or do you count the whole action? Or, homosexual ... namely gay sex, or as between several partners ... so, what is the range? And how do you regard sex in general — is it just the orgasm that has to be the goal? Or can sex just be a little ... can sex just be a little ... that you just touch each other but nothing more and ...?
- Ulrika: Yes, where are the boundaries in relation to ...? Where is the limit of calling it sex?
- Viktor: Yes, exactly! I think a lot comes from the porn industry and that like ... it should be ... for sex to be ... A guy should be able to keep on going for a long time without coming and thus be able to give a woman pleasure. She should come several times and it should be good, according to the norms.

In the situation, Viktor has chosen to raise some issues which he looks upon as a common norm in this context, i.e. that the sex act should last for a long time. He continues, “it’s supposed to be an intense fuck for at least half an hour or so to make it count as good”.

#### 6.3.2.2 **DOF 2: “Sex should last for a long time”**

When studying what is happening in the conversation it becomes clear that the student discussions lead the norm-critical analysis further than the students were required to go. The discussions raise several new norms they need to consider. First, they engage the question of what should really be counted as sex. Is there a norm in our society that prescribes what counts as sex? The conversation continues when Ulrika addresses what Viktor said about the impact of porn on norms.

- Ulrika: I thought it was interesting what you said about porn. The porn industry apparently comprises 90% men. It is created by men.
- Viktor: Yes, exactly.
- Ulrika: And it is men who have created the norm that they should have a big penis, and it feels a bit like it’s about the same thing, because it is maintained. Porn has a big impact and it is maintained by men who say that the sex act should last for a long time.
- Viktor: Yes, if two [men] are talking, then maybe one says, “I had sex for an hour, and I made my partner come many times” and “it was so good”. Then the other, maybe, goes like, “Oh, I have to beat that”.

According to Viktor, the length of the sex act becomes, in this way, a norm that contributes to competition between men. An ethical issue raised here concerns the question of whether it is the men who determine the norms.

### 6.3.2.3 DOF 2: “A woman should come through vaginal sex”

Now the students have distinguished a new norm in their conversation — that intercourse should last for a long time, which quickly changes to another norm that is about the size of the man’s penis.

Viktor: It’s the same as “I have a huge penis”.

Ulrika: Yes. “I want”, “I have a bigger one”. But actually, most orgasms don’t come from penetration, it is the clitoris that ... So, that’s quite interesting ... the length should not really affect ...

Viktor: No.

Ulrika: ... if the orgasm mostly comes from the clitoris so to speak.

Viktor: Must it then be ... Usually, only vaginal sex counts as sex ... the norm is that a woman should come through vaginal sex.

Here another two norms are apparent. One is that sex should mean vaginal penetration, and the other that this is framed by heterosexuality. The ethical issues discerned by the student group in example 2 are summarised in Table 6.3.

## 6.3.3 Example 3

### 6.3.3.1 DOF 1: “It’s going to hurt and will bleed”

In another group, Sofia has investigated what she has perceived as a norm, namely that women should bleed at first intercourse and that it should hurt (DOF 1). This is a norm that she believes is still predominant in several cultures. The ethical question raised here relates to norms about the female body.

Sofia: The statement I wanted to investigate was if it is true that all girls bleed the first time they have vaginal intercourse. I have chosen this because it was something I believed, not so many years ago when I was in high school — that one actually should bleed the first time and that it should hurt. That was how it should be. And this is associated with this myth of the maidenhead — that you have a membrane covering the entire opening, and it will burst and then you will bleed the first time. But there is no such thing. Instead, you have a skin fold, a better word for this is a vaginal corona. So, maidenhead is perhaps a word we shouldn’t use at all. And this, about bleeding the first time, it has caused a lot of problems for a long time. For some, it has really become important to bleed

the first time ... in some cultures and religions. For others, it's been, like, somewhat scary, the bleeding and the pain. That it has to be like that. I watched a programme where they interviewed a doctor about this. He practices a surgery there ... for girls who worry about not bleeding the first time.

Klara: Are they worried about not bleeding?

Sophia: Yes. Girls from such cultures where it is very important for them to bleed the first time, they ... in order to prove that you're a virgin; to prove that this membrane, which does not exist, is there ...

Klara: Mm [agrees].

Here, Sofia points out the myth of the so-called maidenhead, which is expected to burst when girls/women have intercourse for the first time. First, she gives a scientific, anatomical description of the myth of the vaginal corona. Then she talks about the expectations and concerns that are associated with this wrongly described 'membrane'. Then she goes on to say that there are doctors in Sweden who perform surgical procedures to help vulnerable women who want to prove their virginity.

Sofia: And then there are two ways to do it. Either way you insert stitches that will cause bleeding. Or you sew these skin folds you have, so they become like a membrane. And I reacted quite strongly to the fact that, like, here in Sweden, one can go and get such surgery. And it's like this ... that way you can help ... or keep this myth alive. So, I think it's really important to help girls from such cultures where it's important to bleed the first time. But creating such a membrane may not be the right way to help them. And this doctor also advises them on how they can make it seem as if the membrane burst. That they should hurt themselves. That they put something sharp in bed, so ... It was just like this ...

Sofie points to an ethical dilemma where the act of helping women simultaneously helps to maintain the myth of the maidenhead. The discussion between the students continues to address the problem of how menstrual bleeding takes place if there is supposed to be a membrane across the vaginal orifice.

Berit: What about when having a period?

Sofia: Yes, so if there was such a barrier, it would not have been possible for menstrual blood to run out or discharge. So, it's, like, completely ...

Klara: But wouldn't it be better then, for this woman ... or these women who are afraid that it will not bleed, that they could bring their men to the hospital, so that the doctor can explain.

Sofia: Yes, I think so. Such a solution would have been a better ...

Ready: Yes.

Sofia: ... rather than make it look as if this membrane exists. Because then this myth continues to live and ...

### 6.3.3.2 DOF 2: “It’s important to show that you are a virgin”

The conversation raises a new ethical dilemma: why not rather put effort into informing men of the scientific fact that there is actually nothing that bursts during first intercourse. Sofia states that the dilemma is linked to how you regard intercourse in other parts of the world. Klara is wondering if this kind of surgical procedure is performed openly in Sweden or if it is done under cover.

- Sofia: In Sweden ... it is still quite modern and so on. That one can still do this, I think ... [depends on] how it is in other parts of the world.
- Klara: But these operations, are they done at regular hospitals or are they done under cover, in secrecy?
- Berit: No, I think they ...
- Sofia: It is private clinics that do them, I think.
- Berit: But is it wise ... private clinic, or are they dodgy?
- Sofia: Oh yes ...
- Klara: I think like this, academy ... clinics that are well known. That they would do such surgery ...
- Berit: No. Although they might think that it is important for the woman, that she should decide for herself ... if she really wants it.
- Walter: Precisely, yes.
- Klara: I had no idea that you could perform such surgeries in Sweden.
- Walter: I’ve heard about this before, that it’s important to show that you are a virgin and about that ... myth. But never about the fact that some act to fix it.

In this discussion, the students revealed additional ethical questions. Is it okay to perform this type of surgery, and who actually performs the procedures? What is most important — to satisfy the women’s perceived need to be operated on or to choose not to operate because it’s really just a myth? Eventually the conversation moves on to discussions about how the fear women experience can affect them to the point that they fail to become aroused at all and how that in turn can lead to bleeding.

- Pauline: But it’s not ... they’re not just doing that to show you are a virgin. It also has to do with ... to justify that it’s hurting the first time.
- Sofia: Yes, there are girls who are restricted because of that. That they will be scared and just say, “no, it will hurt, I will bleed, I do not want to”.
- Pauline: And it’s kind of normal, that it’s going to hurt.
- Sofia: Yes, it’s going to hurt.
- Pauline: It depends ... then something is a bit wrong.
- Berit: Yes, maybe she is not aroused then.
- Pauline: Or, if she’s nervous then it can be so.
- Sofia: But there are those who bleed. Isn’t it about 30% who bleed the first time? And it’s not because there’s some membrane that bursts. It is because you are not aroused enough or that you are too tense.

- Pauline: Or for some ... vaginal corona ... can ...
- Sofia: Yes, it can.
- Pauline: It may break a little.
- Sofia: But there is nothing that breaks or disappears or something.
- Klara: But you cannot see if someone is a virgin.
- Sofia: No.
- Pauline: But well, it's kind of that I've got rid of it now, I can never be a virgin again. You're never completely clean.
- Sofia: But there's nothing "to get rid of".
- Pauline: That's what I mean, there's nothing to get rid of. But you kind of try to make it as if it was so ... that's why you have to wait, because you'll get rid of it.

What we have seen here is that when students get the opportunity to discuss the 'taken-for-granted' norms, it creates space for a series of new ethical questions. The ethics identified in DOF 1 lead to new areas in DOF 2. For example, we can see how Sofia's norm investigation about bleeding as evidence of a woman being a virgin or not led to a number of other issues to consider — issues to stand for or against. Should the patriarchal structures found here be challenged, and should the men who perpetuate them be informed so that they learn that there is no covering membrane. Or should the cultural tradition survive? Should Swedish society protect scientific findings, or should other customs and experiences be allowed to fit within the framework of Swedish society? What significance should knowledge about biology, physiology and anatomy be allowed to play in that discussion? In Table 6.4 we summarise the ethical concerns that arose in example 3.

### **6.3.4 Concluding DOF 1 and DOF 2**

In the classroom interaction reported above we were able to follow groups of students in discussions which departed from their own norm-critical investigations (DOF 1). Furthermore, based on their intuitive feelings which arose in a narrow conversation, our analysis showed that students were able to identify a diverse range of new ethical issues (DOF 2). What an analysis of these conversations further shows is that the students conducted a discussion that revealed a variety of ethical dilemmas and positions that would not have been raised outside of such a communicative exchange. It is obvious that the teaching methodology gave the students opportunities to tackle these issues from a variety of angles, raising numerous interesting ethical questions (summarised in Tables 6.2, 6.3 and 6.4). Through their resistance to existing norms and a critical review of them, a new flow of content where meaning constantly shifted was raised (Lenz Taguchi 2004). The creation of learning spaces where students are given such opportunities should be a basic design principle in all education where science intersects with ethically loaded content.

## 6.4 Researchers' Steps Backward into the Depth of Society — A Question of Responsibility, DOF 3

In this final section we emphasise that all teaching flows from more or less conscious choices based on the curriculum and practical reality where certain content is foregrounded and other backgrounded. Following Foucault's (2002) writings we reflect on the students' discourses in relation to the historical and social context in which they are embedded (DOF 3), and discuss the implications for research ethics.

We begin by giving a brief 'genealogical' background to the human search for ultimate reason. Many philosophical reflections (c.f. Dewey 1929), declare that early in human history, during a lengthy animistic era, we created structures, essences and entities in nature to describe the origin of emerging phenomena. Soon those explanations became refuges and safe places to rely on when nature appeared in its most insecure guises. Later, when the western tradition (with its origins largely in Ancient philosophy, and then Christianity) took over, more generalised metaphysical representations concerning the order of existence came to have wider expression. The answers to life's big questions, which people sought primarily in universal principles of nature and social life, thus became dependable superordinate principles to guide people through the immediate struggles of everyday life (Dewey 1929). Subsequently, from these ideal principles, power relations and social hierarchies such as family formations, ethnicity, roles in trade and economics, as well as class and gender, were further crystallised to form permanent power structures in western culture (Honneth 2008).

However, during The Enlightenment people started challenging such predominant systems. Increasingly the answers came to be informed by science rather than religion. Thus, science, and above all, biology, became an alternative paradigm in the pursuit of identifying ethical maxims. Contrary to searching for rules given by divine power, one now rather asks for what can be identified as 'natural' based on science, biology and evolution. Accordingly, in teaching about sex, sexuality and relationships, biology has assumed a particular position as a basis for what is considered 'natural' in relation to questions about the human body and human behaviour (Barron & Brown 2012).

In this chapter, we followed a class that, in a non-confessional environment, had the task of examining prevailing views of sexuality in society. Based on a biological framework they asked questions such as: What is it in our common cultural assumptions that sets the limits for how we allow ourselves to think and act sexually? Should we take heterosexuality for granted? Are our gender roles biologically determined? Is orgasm the ultimate proof of desire and pleasure? Should we expect all women to bleed during first intercourse? Thus, the question we must ask ourselves as researchers is: What inclusions, exclusions and systems of power are inherent in these particular systems of thinking (Gytz Olesen et al. 2004)? In what way does this biological framework help us to challenge assumptions about what is regarded as natural human sexuality?

Certainly, what is classified as biological can be regarded as ‘natural’, but we cannot allow biology per se to determine human social behaviour. Gang rape among animals and the practice of male animals killing the offspring of their rivals to ensure the dominance of their own genes can hardly be regarded as healthy models of behaviour for the human species. What biology regards as natural can never be formulated as a role model in a human community (Orlander 2016). Certain delusions, manifested in brown coats, have already tried this the spirit of social-Darwinism (Crook 2007). Moreover, contemporary researchers have shown how some ‘objective facts’ produced in the natural sciences are often pervaded by a social ideology where notions of sexuality and gender have a significant impact on how the biological content is interpreted and presented (Ah-King et al. 2014). Historically the notion that human being is ‘naturally’ hetero-sexual has been extrapolated from sexuality as it is described in research on animals. It is better to define the criteria for human sex and interrelationship on the basis of human values and deliberation. Within this context, the biological perspectives of course create an important resource among many others. Furthermore, it becomes apparent that the students contribute to broaden the view of what is to be counted as a relevant content in the school-subject biology. However, as researchers (and perhaps also as a teachers), we may need to take a step back in relation to the whole teaching situation. Based on a genealogical framework (Foucault 2002), one can grasp the idea of the historical and cultural scaffolding within which teaching takes place (DOF 3). What is considered natural within a biological framework may not always be applicable to the human context. In summary, the third depth of field, DOF 3, focuses on what becomes visible in the transaction between what is happening in the classroom and the historical and social context within which this takes place (Foucault 2002), and what then, from a research ethics perspective, becomes important to take into account. However, the position one chooses to take on this issue is ultimately a question of what consequences we are willing to take responsibility for as a researcher, and this is what is highlighted from the position of DOF 3.

## References

- Ah-King, M., Barron, A. B., & Herberstein, M. E. (2014). Genital evolution: Why are females still understudied? *PLoS Biology*, *12*(5), e1001851.
- Barron, A. B., & Brown, M. J. F. (2012). Science journalism: let’s talk about sex. *Nature*, *488*, 151–152. <https://doi.org/10.1038/488151a>.
- Crook, P. (2007). *Darwin’s coat tails. Essays on social Darwinism*. New York: Peter Lang publishing.
- Dewey, J. (1929). *The quest for certainty: A study of the relation of knowledge and action*. Montana: Kessinger Publishing.
- Dewey, J. (1957). *Human nature and conduct*. New York: The Modern Library, cop.
- Dewey, J., & Bentley, A. F. (1960). *Knowing and the known* (p. 1960). Boston: Beacon Press.
- Foucault, M. (2002). *Vetandets arkeologi* [Archaeology of Knowledge] (C. G. Bjurström & S.-E. Torhell, Trans. [Ny utg.] /ed.). Lund: Arkiv.

- Gytz Olesen, S., Møller Pedersen, P., & Johansson, I. (2004). *Pedagogik i ett sociologiskt perspektiv: en presentation av* [Pedagogy in a sociological perspective: a presentation of]: *Karl Marx & Friedrich Engels, Émile Durkheim, Michel Foucault, Niklas Luhmann, Pierre Bourdieu, Jürgen Habermas, Thomas Ziehe, Anthony Giddens*. Lund: Studentlitteratur.
- Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies*, 14(3), 575–599.
- Honneth, A. (2008). *Reification: New look at an old idea*. New York: Oxford University Press.
- Lenz Taguchi, H. (2004). *In på bara benet: en introduktion till feministisk poststrukturalism* [Down into bare bone. An introduction to feminist poststructuralism]. Stockholm: HLS förlag.
- Orlander Arvola, A. (2016). So what do men and women want? Is it any different what animals want? *Research in Science Education*, 46(6), 811–829.
- Östman, L. (1998). How companion meanings are expressed by science education discourse. In D. A. Roberts & L. Östman (Eds.), *Problems of meaning in science curriculum* (p. xii, 288). New York: Teacher College Press.
- Rogoff, B. (1995). Observing sociocultural activity of three planes: Participatory appropriation, guided participation, and apprenticeship. In J. Wertsch, P. Del Rio, & A. Alvarez (Eds.), *Sociocultural studies of mind* (pp. 139–164). Cambridge: Cambridge University Press.
- Swedish Research Council. (2017). *Good research practice*. Stockholm: CM-Gruppen AB.

**Auli Arvola Orlander** has a great part of her professional life been involved in various issues in the school world. With a background as a teacher and later as a teacher educator, educational consultant, etc. she has been in contact with practice-related issues in the field. She has been involved in various research and development projects within the school and nursery, all in close collaboration with principals and practicing teachers. Today Auli is working in the Department of Mathematics and Science Education at Stockholm University as director of studies. Her main research focus is on gender issues in science education.

**Iann Lundegård** is an associate professor in Science Education at the department of Mathematics and Science Education at Stockholm University and partly employed by SWEDEST at Uppsala University. His research interest is educational philosophy associated with high school students' deliberations and meaning making on sustainable development. He has quite a long experience in working with pre-service and in-service teacher training in Science Education and has written several textbooks aimed to be used at upper secondary school. Over the years he has contributed to curriculum development at the Swedish Agency of Education, and recently on behalf of them, also produced texts and other material that may support teachers for didactic reflection on their teaching in/on/about sustainable development.