

# Gendered Boundary-work within the Finnish Skepticism Movement

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## Abstract

As a worldwide social movement, skepticism aims to promote science and critical thinking. However, by analyzing texts published in the magazine of the Finnish skepticism movement between 1988 and 2017, we find that the movement carries out its mission in a way that maintains and produces gendered hierarchies. We identify six forms of gendered boundary-work in the data: (1) science as masculine, (2) questioning women, (3) complementary and alternative medicine as feminine, (4) debating the status of gender studies, (5) gender within the skepticism movement, and (6) supporting equality. Gender is an important aspect of the boundary-work undertaken by the movement to establish boundaries between science and nonscience. The forms of gendered boundary-work contribute to the idea of “true” science as a masculine and male-dominated domain, excluding women from both science and the skepticism movement. Even when the exclusions are subtle, hidden, or humorous, they nevertheless produce

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gendered inequalities by excluding women, belittling women's knowledge production, or granting women-only dismissive recognition. Indeed, our analysis indicates that there is a need to look deeply into science-based social movements: exclusive structural tactics are part and parcel of such movements' mundane activities, as our examples from Skepsis ry's popular magazine demonstrate.

### **Keywords**

boundary-work, gender, science-based social movement, skepticism, science and technology studies, gender studies

## **Introduction**

In this article, we explore gendered boundary-work within the skepticism movement in Finland. In this way, we contribute to an important but neglected field within science and technology studies (STS) by providing new insights into gendered inequalities related to science (Pereira 2019; M'charek, Schramm, and Skinner 2014; Pollock and Subramaniam 2016; Rajão, Duque, and De 2014). As a worldwide social movement, skepticism aims to promote science and critical thinking and to strengthen the status of scientific knowledge in general. The movement draws strict boundaries between science and unscientific knowledge by debunking pseudoscience, paranormal beliefs, superstition, and irrational beliefs (Hall 2000; Forstorp 2005). The skepticism movement thus takes part in *boundary-work* (Gieryn 1983, 1995, 1999) by actively defending legitimate science and defining its boundaries. However, the movement carries out its mission to debunk non-science in a way that maintains and produces gendered hierarchies. For instance, while supporting the scientific worldview, the skepticism movement seems to regard scientific institutions as gender-neutral, even though universities and other higher education institutions in many ways generate and maintain hierarchies and exclusions related to gender.

In what follows, we provide a detailed analysis of forms of gendered boundary-work within the skepticism movement. Our article combines STS on boundary-work with women's, gender, and feminist studies (WGFS) to produce a detailed analysis of different forms of gendered boundary-work within this movement. We ask: *how* does this kind of defense of science actually happen, and *how* are the boundaries between science and non-science drawn in ways that are gendered? We participate in the discussion

started by Pereira (2019) on the importance of studying the interconnections between boundary-work and gender. The skepticism movement has rarely been studied within STS. A remarkable exception is the study by Forstorp (2005), who points to the “patriarchal project” of the skepticism movement but does not study it deeply. This article provides novel insights into the skepticism movement. It also contributes to the development of the concept of gendered boundary-work, which—as we argue—is a helpful analytical tool for grasping the production of gendered hierarchies within the realms of science, research, and knowledge.

We focus on the Finnish association for skeptics, Skepsis ry: our data consist of 120 issues of Skepsis ry’s magazine *Skeptikko* published between 1988 and 2017. However, the skepticism community is international, and similar associations and groups of skeptics can be found in most countries. These include the Skeptics Society (United States), Stichting Skepsis (the Netherlands), Comitato Italiano per il Controllo delle Affermazioni sulle Pseudoscienze (Italy), Association for Skeptical Enquiry (UK), Alternativa racional a las pseudociencias—sociedad para el avance del pensamiento crítico (Spain), and Association française pour l’information scientifique (France). An international umbrella organization, the Committee for the Scientific Investigation of Claims of the Paranormal (CISOP), was founded in 1976 in the United States and renamed as the Committee for Skeptical Inquiry in 2006. Since 2015, CISOP has been part of the transnational nonprofit educational organization Center for Inquiry (CFI 2015, 2020). The internationally renowned magazine *Skeptical Inquirer*, founded in 1976 in the United States, has been highly influential on both the American movement and the international community. With regard to our case, this influence is evident for instance in the Finnish association’s reference to CISOP rules and principles as its exemplar, and content originally published in *Skeptical Inquirer* has been translated into Finnish and published in *Skeptikko*. Other CISOP activities have also been adopted in Finland: one such import is the Humbug Award, which draws attention to violations of scientific norms and unwanted crossings of the boundaries of legitimate knowledge. Hence, even though our focus here is on Finland, it can be seen as an example of a wider international community of skeptics.

## **Gendered Boundary-work**

Gender has rarely been taken into account in analyses of the processes of boundary-work. As Pereira (2019, 340) argues, “there is still much work to be done in integrating into our theorizing of boundary-work a central and

systematic consideration of how that work is gendered, racialized, and structured by other axes of social inequality.” Pereira (2012, 2019) has explored boundary-work on the epistemic status of WGFS. She stresses that studies on boundary-work should engage more actively with feminist, critical race, and postcolonial scholarship and should examine more systematically the relationships between scientific boundary-work, broader structures of sociopolitical inequality, and boundary-workers’ (embodied) positionalities. In this article, drawing on feminist scholarship, we place “gendered boundary-work” at the center of our exploration. This concept has proven especially useful for capturing gendered hierarchies and asymmetries. For example, Persson (2010, 169; 2012) teases out metaphors and images that Swedish Army officials use as rhetorical devices in boundary-work “to produce symbolic constructions of gender.” Johansson and Lundgren (2015) show how boundary-work creates gendered norms of practices and interactions in supermarkets. Similar notions of gendered boundary-work have been articulated by Tedmanson and Essers (2015) regarding female Muslim entrepreneurship and Larsson and Magdalenic (2015) on sociology as a discipline.

Our analysis contributes in particular to the understanding of rhetorical aspects of boundary-work. Boundary-work takes place in meetings, research sites, classrooms, publications, conferences, media, courts, and more (Pereira 2019) and is by no means restricted to uses of language. Since our data consist of *Skeptikko* magazine, we especially focus on a certain kind of boundary-work where the boundaries are drawn textually. In these processes, gender plays a part both explicitly and implicitly. Gender issues are not always explicitly debated, nor is gender always directly named. Rather, gendered boundary-work often operates through the use of associations, euphemisms, metaphors, symbols, and expressions (Kolehmainen 2015). We pay careful attention to these forms of gendered boundary-work, which contribute in often subtle and ambivalent ways to the exclusion of minority groups from the sphere of science and to the regulation of norms related to gender divisions (see also Johansson and Lundgren 2015, 190, 199) within the Finnish skepticism movement.

However, unlike many previous studies, we do not take the gender binary for granted, and hence, we do not reduce the effects of gendered boundary-work to predefined women and men. Nor do we wish to treat the concept of masculinity as synonymous with men or to associate femininity exclusively with women. Especially when talking about gendered boundary-work, it is important to stress that although we find the concept of boundary-work useful, we are aware of the risk that if it is used without

sensitivity to the existence of more than two genders, or without a clear commitment to refuse binary models, the concept may strengthen binary understandings of gender—and beyond, of science and nonscience, knowledge and belief, and so on. We seek instead to identify the ways in which such binaries are produced in the processes of boundary-work.

The decision to look at the often subtle and ambivalent ways in which gendered inequalities and asymmetries are kept alive makes particular sense in the Nordic context, where equality is widely supported. In Nordic countries, it is difficult to find anyone who openly opposes equality (Holli, Magnusson, and Rönblom 2005). But the question remains as to which version of equality is supported (Kantola, Sandberg, and Ylöstalo 2020). When it comes to putting equality into practice, problems arise. Magnusson (2008), for instance, details rhetorical fact-construction techniques that oppose equality in Nordic countries. Yet, those techniques exist alongside the general support for equality. It is therefore necessary to look at gendered boundary-work in order to identify sites and situations where the ideal of equality cracks. Through a deep analysis of textual materials, we are able to pinpoint forms of gendered boundary-work that operate not by openly discussing gendered boundaries but rather by more nuanced and ambivalent means.

## **Skepticism as a Social Movement**

As a point of departure, we take it that the activities of skepticism movements fit the definition of science-based social movements (Hess et al. 2008) even though they have not widely been recognized as such. However, the skepticism movement is different than many other social movements in its closeness to the academic community: the central icons of the international skepticism movement are esteemed academics. In Finland, Skepsis ry has attracted active scientists, such as prominent professors and researchers from different disciplines, onto its advisory board. Therefore, rather than working against elites and reputable academic and scientific organizations, the skepticism movement is founded on collaboration with academia. In this way, it does not pose a challenge to elites or established scientific organizations but instead works alongside or from within the academic community.

As Forstorp (2005) argues, the skepticism movement is part of the elite and largely benefits from its dominant position. In Finland, Skepsis ry belongs to the Federation of Finnish Learned Societies. This is another way in which the movement is given the status of a scientific association rather

than a social movement. Nevertheless, this position may also foster a situation in the skepticism movement where the uncertainties of science or its social and political aspects are not considered (see de Ridder 2014). It also seems that neither the skepticism movement itself nor its publics see the goals of the movement as political. Yet, this apparent distancing from social movements may mask power relations and related political issues.

Similarly, the movement bears none of the hallmarks of the identity politics that characterize contemporary social movements. In Western countries, social movements are increasingly organized around identity politics. In order to achieve social recognition, the groups that seek improvements (such as increased status, recognition, or rights) must constitute themselves as vulnerable (e.g., Brown 1995; Skeggs 2005; Koivunen, Kyrölä, and Rydberg 2018): groups present themselves through claims of injury and trauma in order to make political demands. The skepticism movement, however, does not claim injury, and it locates vulnerability in “others,” that is, those who are harmed by their naive trust in non-science. The data we have analyzed manifest a mission to speak for those the movement sees as gullible, nonknowledgeable, or misguided. Yet, speaking on behalf of others could be regarded as a classic power strategy with links to traditional forms of masculinity: it could even be called “mansplaining” in the name of science. Nor do skeptics look for recognition as a collective, unlike many politically active groups, even though there is no particular reason for them to eschew this option. Rather, their position as defenders of truth is perhaps taken for granted: it is seen as rational to defend science—and perhaps science is widely seen as nonpolitical, or research and activism are considered to be two separate things. In any case, while many of the groups that mobilize claims of injury and trauma consist of (for instance, ethnic and sexual) minorities, the exclusion of vulnerability and its projection onto traditionally disadvantaged groups indicates a particular gendered dynamic.

Skepsis ry can best be described as a male-dominated academic association where the natural sciences are well represented. Exploring skepticism thus enables us to look at how gender becomes part of boundary-work in an association where epistemic authority does not need to be fought for since Skepsis ry mainly consists of “unmarked” (white) men (see also Pereira 2019, 340). The association was established in 1987 and had approximately 1,800 members in 2019. This membership is larger than that found in most Finnish scientific societies, which tend to have only a few hundred members (Finland is a small country). Information about the board members is provided at the end of each issue of the magazine. To judge from the names

provided, the board members during 1988-2017 were mainly men, and the association has never had a female chairperson. Hence, it seems that over the years, the leadership of the association has been in the hands of its male members. Nevertheless, we wish to warn against making assumptions based on members' gender, as gendered boundary-work is not reducible to individuals and can be fostered by people of all genders. Further, we want to point out that feminist scholars have long criticized the various ways in which men are seen as "ideal" academics and that academic cultures are masculine both internationally and in Finland (see Lund 2015; Lund and Tienari 2019). From this perspective, the facts that the skepticism movement seems to attract mainly men and fosters the idea of science as a masculine field are neither random nor unique; rather, both facts can be understood as part of the wider masculinist academic culture and traditions of knowledge production, which often cast masculine forms of knowledge production as neutral, objective, and valid.

## Data and Methodology

The magazine *Skeptikko*, published by Skepsis ry, provides the main data for this article. The association has published this magazine since 1988. It is also sold in major bookstores and is available in many public libraries. Today, the magazine is published both in print and online. Back issues are archived in electronic form and are open-access. Hence, the magazine is clearly the key public forum of the movement, widely available beyond the membership of the association. However, different social media accounts and blogs by individual members of the movement are also growing in importance, and hence, the data analyzed in this study cover only part of the activities of the association.

The magazine publishes a variety of articles, ranging from columns to literature reviews, and from interviews with scientists and skeptics to reports of various kinds. The articles all participate in the fight against pseudoscience by pointing out unscientific principles and demonstrating the general lack of knowledge. A great deal of the content focuses on revealing the paucity of well-informed (evidence-based) research behind complementary and alternative medicine (CAM). Homeopathy, graphology, and a belief in unidentified flying objects are examples of such violations. There is also much discussion of historical cases of the negotiation of scientific boundaries in psychology, medicine, and the natural sciences. While these lie at the heart of the magazine, we also recognize that there have been shifts in the focus of discussions and debates across the thirty-

year time span. For example, at the end of the 1980s, many articles targeted CAM; in the 1990s, paranormal phenomena became an object of critical inquiry; and in the 2000s, discussions emerged concerning sexual rights and gender equality, particularly in relation to Muslim women.

In order to track the forms of gendered boundary-work within the Finnish skepticism movement, we analyzed thirty volumes of *Skeptikko* magazine. Altogether, the data consist of 120 magazine issues, that is, all those published during 1988-2017 (four issues per year). We acknowledge that the magazine does not straightforwardly reflect the personal beliefs or views of the members of Skepsis ry. However, since the articles we explore were accepted for publication, the magazine nevertheless gives the movement a voice and demonstrates the forms of expression supported within the movement. More importantly, the magazine itself produces the public image of the skepticism movement in Finland (the articles are in Finnish).

The analytical work of tracking down forms of gendered boundary-work was conducted by the two authors of this article. We both followed the same procedure while analyzing separate data sets (the first author focusing on the older volumes and the second on the more recent). First, we decided to look at gendered boundary-work: while reading through the magazines, we paid special attention to content that discussed gender or related issues such as feminism, gender studies, or equality and which thus potentially entailed gendered boundary-work. However, we worked on the data with an open mind, without assuming that we could know in advance or a priori what forms the boundary-work might take. Our analysis was guided by the following analytical questions: How is gendered boundary-work mobilized in the texts to draw a boundary between science and nonscience? What forms of gendered boundary-work can be traced in the articles? How do these forms of boundary-work contribute to hierarchies of knowledge production? During this first stage, a total of 257 passages were extracted for closer analysis, which was conducted separately by the authors. These passages were coded.

In the second and third stages of our analysis, we analyzed the data together as a team, with the aim to identify and analyze distinct forms of gendered boundary-work. In the second stage, we reread the extracts independently, but we also discussed our preliminary findings together. We also jointly started to organize the extracts thematically, trying to identify forms of gendered boundary-work systematically. As a result, we identified six distinct forms of gendered boundary-work: (1) science as masculine, (2) questioning women, (3) CAM as feminine, (4) debating the status of gender studies, (5) gender within the skepticism movement, and (6) supporting



equality. In the third and last stage of our analysis, we closely interpreted each of these forms of gendered boundary-work. While the six forms are representative of the gendered boundary-work in the magazine, they do not represent the magazine as a whole. In what follows, we provide detailed analyses of each form of gendered boundary-work, giving illustrative examples. A list of all the passages we utilize as examples in this article is given in the Appendix. We refer to the passages by number (1–12). A full list of the passages analyzed is available from the authors on request.

The first form, science as masculine, was persistent throughout the time span of our exploration, meaning that expressions such as “man of science” were very common in the data in situations where neutral expressions such as “researcher” could have been used. The second form of gendered boundary-work, questioning women, was also apparent throughout the time span, emerging as tendencies to question women’s knowledge and to connect women’s culture with violations against science. CAM as feminine refers to the persistent ways in which women were made to represent both users and producers of CAM and were thereby nullified. Indeed, questioning and criticizing different forms of CAM was one of the most visible topics in the magazine. The fourth form of boundary-work, debating the status of gender studies, did not occur as persistently as the first three. Its emergence appeared to be closely connected to the moments when gender studies was established as a discipline in Finland, and when its position in academia strengthened (later in the 2000s, these departments were merged with the social sciences and humanities; for more on these developments in different countries, see, e.g., Pereira 2017; Kahlert 2018; Korvajärvi and Vuori 2016). Gender within the skepticism movement, our fifth form of boundary-work, emerged in particular in the 1990s, when the internal debate concerning the “gender division” within the skepticism movement seemed to gain traction. The sixth form of boundary-work, supporting equality, only appeared in the 2000s.

## **Forms of Gendered Boundary-work in the Finnish Skepticism Movement**

### *Science as Masculine*

Perhaps the most obvious form of gendered boundary-work is the association between science and masculinity. This association marks a gendered boundary since it contributes to an understanding of femininity as external to science. This association between science and masculinity is most

evident in the recurring use of the phrase “man of science” (*tiedemies* in Finnish, literally translated as “science man”). Indeed, this expression was so common in the data that we chose not to extract and code every single use of it. The persistent use of “man of science” strongly genders both researchers and science, associating academic membership exclusively with men (see also Johansson and Lundgren 2015, 190). Of course, it also contributes to the conception of skeptics and scientific communities as male-dominated and masculine.

In the following example, “man of science” seems to pass as an expression that refers to all critical thinkers, researchers, and supporters of science:

The use of obscure “scientific results” as the foundation of a philosophy of human life (as e.g. the new age movement does) is highly suspicious. In a way, the individual is then robbed of the right to make judgments, bear individual responsibility, and have opinions of one’s own, regardless of whether we are speaking of a man of science or not. (1)

In this passage, the expression “man of science” is used to refer to the most valued form of masculinity: hegemonic masculinity. Here, we draw on the theory of hegemonic masculinity by R. W. Connell. This theory stresses the existence of different masculinities, the most valued and desirable of which are hegemonic. Hence, hegemonic masculinity as a concept entails two crucial aspects: it underlines both the plurality and the hierarchy of masculinities (Connell and Messerschmidt 2005, 846). Hegemonic masculinity is thus not a stable or fixed category—and furthermore, it is less about actual men than it is about ideals and fantasies concerning desirable forms of masculinity. In the passage above, a “man of science” is pictured as an ideal who is sovereign in his judgments, bears individual responsibility, and has opinions of his own.

Boundaries are also drawn between the right and wrong kinds of masculinity. As previous studies stress, certain forms of masculinity are associated with authority and social power (Connell and Messerschmidt 2005). In the following example, desirable masculinity is associated with science, while other, less valuable masculinities are associated with practices classified as pseudo-activities. These subaltern masculinities are often associated with ethnic “others” (Kimmel 2013). In this passage, which discusses cabbage-leaf pain treatment during labor, “medicine men” stand for these othered, subaltern masculinities, with a distinct reference to ethnic others:

Mister medical superintendent goes on, saying that “it is possible to include one’s own feelings in care work. Here the staff have an opportunity to improve treatment. You cannot relate to these things in the same way you relate to medical science. Medical science must be premised on established principles, yet it is not possible to apply these kinds of test methods to all healthcare. Common sense suffices with many things. Since life experience in general has proved that you can use cabbage leaves to relieve pain, it is enough.” [...] No wonder all sorts of shiatsu therapists and medicine men can increasingly be found wandering the hospital corridors. (2)

The text not only questions the use of cabbage leaves but it is also an example of gendered boundary-work. Interestingly, not only are medicine men excluded from the realm of science but also the masculinity of the medical superintendent is detached from ideal manhood. It becomes evident in the text that his support for the use of cabbage leaves as pain relief is not appreciated. He is called “mister medical superintendent,” and through this ironic naming, his masculinity is ridiculed and undermined.

It is also noteworthy that the article in question discusses the gendered phenomenon of childbirth, and it questions the expertise of midwives—most of whom are women—as well as the personal experiences of women who have found relief in the use of cabbage leaves. It seems that the fact that midwives are not supervised by medical doctors also adds to gendered boundary-work. Of course, the same applies to the questioning of the medical superintendent’s expertise. As Connell and Messerschmidt (2005) remark, nonhegemonic forms of masculinity are often associated with feminine traits; here, it seems that the authority of the medical superintendent is questioned through his loyalty to women and midwives. One way to “police” masculinity is through social sanctioning, and the example articulates how men of the “wrong” kind are punished through the denial or ridicule of their masculinity.

### *Questioning Women*

Another form of gendered boundary-work in the data draws the boundary between things that are taken for granted and things that are seen as in need of questioning. In places, women’s accounts are questioned and hence labeled untrustworthy to the extent that the testimonials of female victims of sexual harassment are occasionally questioned. Women are represented as more gullible than men, and women’s knowledge is questioned. Moreover, women’s culture is often judged. For instance, reading women’s

magazines is condemned as nonsense, and such magazines are criticized for publishing horoscopes and other content that does not match the scientific worldview.

In the following example, which is represented as the witness testimony of a younger man, an interest in astrology is condemned as fluffy woo-woo for gullible grannies:

An excellent example was a situation where the astrologist Seppo Tanhua talked about people's characters with the help of astrological charts. In the traditional woo-woo manner, Tanhua tossed around utterly vague expressions for his listeners, and surprise, surprise—each one seemed to hit the mark. [...] There was someone who was labeled a researcher type. Not correct! No worries! Tanhua was as quick as lightning to correct his mistake: "you do analyze things, though." Indeed, that was what Seppo had meant in the first place. With these fluffy ingredients Tanhua got 50 grannies to clap in sync. [...] I sincerely hope that Skepsis ry will never again appoint any skeptic to perform such a burdensome task alone. Tough woo-woo wears out even a tough guy. (3)

In this example, gendered boundary-work is enacted by contrasting a mass of women against two individual men: the male astrologer who misleads the women and the male writer of the article. The audience are both gendered and aged—"fifty grannies" clapping in sync. Women are thus produced as gullible, in contrast to the unimpressed and individualized author, who distances himself from astrology. Being independent, strong, and tough, and having willpower are conventionally associated with masculinity, and they also play a part in attempts to prove one's masculinity (Kimmel 1996, 332; 2013; Kolehmainen 2015). Hence, the extract also highlights the masculinity of the author since toughness can be seen as a masculine trait: the text particularly produces the archetype of the skeptic as young and masculine.

In the following example, old women are once again dismissed. "The wisdom of elderly women" is simply trivialized through the contrast between modern, accurate science and historical women's lay knowledge:

In case "historicalness" and especially "the wisdom of elderly women" form the criteria for success, I must recommend the following advice. This recipe comes from Pernaja [a small town in Finland], and the handwriting can be dated to the mid-1600s. [...] First you take a puppy that has been fed with nothing other than milk from its mother. It must be scalded like a little swine;

then the puppy needs to be stuffed with the following ingredients. First you need approximately a knob of bear lard or St. John's butter (if bear lard is not available), a knob of ginger, a pinch of bay leaf, a little saffron, garden angelica, a pinch of sage, a little more of stinging nettle; these ingredients are to be minced in the mortar, and then the puppy is to be stuffed with them.

(4)

In this example, a humorous tone is mobilized. Yet once again, the “old women” are positioned outside of the boundaries of science and sanctioned for their beliefs. However, the text does not refer to any women in particular; rather, the gendered expression is used to refer to inaccurate knowledge. The wisdom of old women is associated with inaccurate knowledge and reactionary beliefs, which operates as a form of gendered boundary-work and further contributes to the notion that science is a masculine domain. Previous research has pointed out that the questioning of women's knowledge is a recurring theme in boundary-work (Vuolanto 2013, 2015) and that women lose their social value as they age (Hatch 2005). In the passage above, these two mechanisms of exclusion are combined to devalue and belittle women's knowledge.

### *CAM as Feminine*

In this form of gendered boundary-work, the boundary between Western medicine and CAM is gendered. CAM is associated with femininity either through explicit references to its users and practitioners as women or implicitly in descriptions of CAM that use feminine adjectives such as “soft.” As previous studies have remarked, therapeutic discourses are gendered, and CAM has been seen as dethroning “masculine” reason in favor of “feminine” intuition (Barcan 2011). Western medicine, on the other hand, draws upon the idea of combating disease—as is evident in its subtle reliance on military metaphors such as “fighting disease” (Barcan 2011)—and this easily becomes associated with masculine traits such as toughness.

Here, women are associated with CAM through the recognition of women as its actual and potential customers. Interestingly, the perceived customers are again both gendered and aged since middle-aged women are especially identified:

The fair booklet had announced in advance that anybody could try different therapies for free during the fair. However, most of the visitors had to observe the treatments as bystanders, since the therapists working for free seemed to

pick exclusively middle-aged married women as receivers of treatments; perhaps because they were seen as potential customers. For instance, one lady's feet were treated with a vibrating device the size of an electric toothbrush, with different blades attached to it. (5)

Women are discussed as a group that is inclined to various beliefs and scams. In the following example, women as a group are blamed for supporting cultural practices labeled "belief medication" and "flimflam," which comprises yet another example of gendered boundary-work:

It is a matter of fact that women in particular support the flimflam business, which is worth millions of marks. They read horoscopes, visit astrologists for guidance, and look for different belief medication treatments, even though they have access to a high-quality healthcare system where the latest research results are applied. (6)

It is correct that women predominate as practitioners and clients of CAM (Barcan 2011). However, in this example, it is not just a question of numbers; rather, women's interest in different cultural practices is contrasted with the high-quality healthcare system. Women are also held morally responsible for supporting flimflam businesses and investing their money in nonsense.

In this example, the term "belief medication" is used instead of talking about CAM, which can also be considered a typical form of boundary-work in the data. This choice of wording produces a binary between "facts" and "beliefs." CAM is thus ripped away from its scientific connotations: it is rendered mere belief medication and no longer conceptualized as medicine. Indeed, the term "CAM" overall can be seen as feminizing, as it has traditionally been women's fate to complement men (Barcan 2011). Here, the opposition between CAM and Western medicine is directly assumed, and women's use of CAM is contrasted with medicine.

### *Debating the Status of Gender Studies*

The fourth form of gendered boundary-work we identified in the data is about questioning the validity of gender studies as a discipline. In this form of gendered boundary-work, it is insisted that there is a boundary between valid and nonvalid disciplines, and gender studies as a discipline is categorized as nonvalid. There are several alternative, overlapping means to question its legitimacy. Oftentimes, gender studies are straightforwardly categorized as nonscience. Sometimes specific studies or books, or

individual researchers—particularly those who work across queer studies—are singled out and attacked, which can be considered a refusal to see gender studies as a discipline with a history. The thoroughly versatile and interdisciplinary nature of Finnish gender studies (see Korvajärvi and Vuori 2016) is not acknowledged.

The following passage provides a great example of the very limited engagement with gender studies. Even though only one book is discussed, the claims extend to the whole discipline of gender studies. Gender studies as a discipline is cut off from any disciplinary developments or academic debates. Pereira (2012) also identifies “cutting” as a way to devalue WGFS, defining cutting as the process whereby feminist contributions are acknowledged only after they have been cut off from their feminist sources or from the critical stances that ground them. In the example below, queer theory is portrayed as something one professor just “made up,” cutting it off from any disciplinary or historical development:

Professor of rhetoric Judith Butler has made up queer theory, which is very popular in current women’s studies, and it [queer theory] is pure behavioral creationism. The classic book in women’s studies, *Gender Trouble: Feminism and the Subversion of Identity* by Butler (Gaudeamus 2006), has been translated into Finnish by Tuija Pulkkinen and Leena-Maija Rossi, 16 years after its publication. They have managed this difficult task in a brilliant, fantastic way. [...] Such a pity, though, that the text Pulkkinen and Rossi have made so much effort to translate is hopeless nonsense. It is internally so controversial that every single page—every sentence, to cite Osmo Tammi-salo—would deserve harsh criticism. (7)

In this example, gender studies is recognized as a discipline but then repudiated. As Pereira (2012) finds in boundary-work concerning WGFS, oftentimes the epistemic status of feminist work is simultaneously both asserted and denied, enabling a dismissive recognition of feminist scholarship. Further, Pereira (2012) remarks that the epistemic value of feminist scholarship is often questioned. In the example above, queer theory is described as popular, but its epistemic value is denied. This kind of utterance articulates the power to judge: one of the most canonical texts in the history of gender studies is labeled nonsense even though no knowledge of gender studies as a discipline is displayed. Nevertheless, such a claim validates the credibility of the reviewer as a reasonable, open-minded, well-informed expert who knows the latest research trends in gender studies but considers them irrelevant (cf. Pereira 2012).

In addition to gender studies (although the term “women’s studies” is widely used, as it was in Finland in general until the 2010s), other disciplines in the social sciences and humanities are dismissed. A recurring target of criticism is a school of thought named “postmodernism.” Indeed, one way to criticize gender studies is to compare or parallel it to “the humanities” or “postmodernism.” This makes it difficult to discuss particularities or differences. In the following example, the sociology of science is discussed, but the sharpest edge of the critique points toward “some feminist thinkers”:

Similarly, the idea of social constructionism exists in sophisticated and vulgar forms. If the sociology of science by Pickering and Collins represents a sophisticated form, then at the vulgar end there are some feminist thinkers who do not settle for exploring phallocracy at a sociological level, but end up arguing that projections of Oedipal obsessions such as power, energy, force, and so on dominate science. Even the rules of logical reasoning such as *modus ponens* get judged, as if they were not evident for women. [...] Sophisticated woo-woo like postmodernism has its main effect outside science. (8)

Here, the association seems to be that feminist thinking equals postmodernism equals woo-woo. The feminist thinkers in question are not named; this devalues their work and also makes them appear as a mass with no differences. Further, the tone of the text casts doubt on feminist scholarship: feminist thought is not discussed as a tradition, canon, or discipline; rather, the text hints that it is a collection of vulgar claims associated with obsessions and lack of logical reasoning and external to science. Moreover, feminist thought is represented as “extreme” since it is said to be at the vulgar end. Pereira (2012, 298) pays attention to the tendency to categorize feminist scholarship as “too far,” “too much,” or “not enough.” Labeling feminist thought as belonging to the vulgar end is in our view a similar way of hinting that it is too far and too much. Positioning gender studies at the extreme is also a way to indicate a boundary: gender studies are, if not off-limits, then at least on the boundary of science.

### *Gender within the Skepticism Movement*

Gender issues within the skepticism movement are also discussed in the data. In this form of gendered boundary-work, it is acknowledged that most members of the movement, especially those who are actively involved, are men. This fact is regularly brought up in discussion: the reasons are debated,



and from time to time, the debate leads to attempts to attract more women members. These actions are often legitimized by articulating concern about women, as they are said to lack an interest in science and rational thinking.

In the following passage, the writer uses himself as an example of the gendered division within the skepticism movement. The stereotype of the skeptic as a bitter old man is invoked but disproved:

One new acquaintance sounded a little upset when they were informed that I was a skeptic. “You don’t appear to be like that—a black-and-white person—at all!” I replied to them that a skeptic is not necessarily a black-and-white, bitter, geriatric man, not even a science-believing killjoy who lacks a sense of humor. A skeptic is not necessarily a bad person. (9)

In the next example, women as a group are condemned for their supposed lack of interest in science and lack of engagement with the movement. It is noteworthy that women are seen as a group of the “wrong kind” and are criticized, whereas men remain “unmarked” (Pereira 2019, 340), and there is only a little reflection on the association itself:

Generally speaking, women’s average educational levels are probably even rising above men’s. Yet it seems that this is not followed by any rise in rational thinking and intellectual scholarship in society. On the contrary, all sorts of actions that are irrational and feed superstition are on the loose, even helped along by women who do have academic degrees. [...].

It also seems that women are not too interested in rational thinking based on a scientific worldview. All over the world, women make up only a small minority in skepticism associations. Finland is no exception. (10)

In Finland, as in other European Union countries, the majority of students and graduates in higher education are women (European Commission 2019). In the passage above, women’s academic degrees are referred to, as the text states that these degrees do not prevent women from supporting irrational, superstitious beliefs and teachings. Just as gender studies is granted “dismissive recognition,” to use Pereira’s (2012) term, women’s academic degrees are also given dismissive recognition: women are said to be outperforming men in higher education numerically but to still be lacking in terms of rational thinking and intellectual scholarship. Expressing concern about women’s insufficient interest in science and rational thinking enacts gendered boundary-work and paradoxically is also a way of excluding women from the skepticism movement.

### *Supporting Equality*

Finally, it must be said that despite the repeated criticisms of feminism and gender studies, equality itself is supported in several articles published in the magazine. This becomes understandable in the Nordic context, where equality is exceptionally strongly emphasized and where there is a consensus that equality is an important goal (e.g., Haavind and Magnusson 2005; Magnusson 2008; Holli, Magnusson, and Rönblom 2005). However, support for equality also involves gendered boundary-work where the boundary is drawn between an equal “us” and an unequal “them.” Gender inequality is located in “other”—African or Muslim—countries and distanced from Finnish society. Sexual rights are supported, and discrimination against sexual minorities is likewise located in marginal groups such as fundamentalist Christians.

Moreover, in Finland, it is *equality* that is supported—not feminism (Holli 2003; Hasanen, Koivunen, and Kolehmainen 2010). Hence, it is possible to criticize feminism or gender studies even though “equality” writ large is widely supported. As the following example demonstrates, gender equality is seen as a challenge for African and/or Muslim countries but not so much for contemporary Finland:

The most rapid cure for everything would be to advance the equality of women and girls in the developing countries—above all in sub-Saharan Africa—and to make them literate. Previous experience shows that this would have an effect within 10–15 years, and the costs would be relatively small. (11)

Thus, even though this passage overtly supports gender equality, it does so in a way that does not challenge the Western progress narrative. It has been pointed out that in Nordic countries, the notion of gender equality is mobilized to define the limits of national belonging: it is central to defining who belongs to the nation and who does not (Keskinen et al. 2009). Rather than being reflexive about equality issues in Finland, this locates the “bad patriarchies” in distant countries and racialized bodies (Keskinen et al. 2009). Similarly, it is suggested that gendered inequality is about “other” nations, rather than an issue that should be raised in the Finnish context. The concern over African women and girls can thus be seen as an act that renews an established gendered hierarchy where African women and girls are rendered objects of Western action.

However, in the data, Finland is not always seen as equal when it comes to sexual rights. In the 2000s, opponents of gender-neutral marriage were

ridiculed in the magazine. This makes sense, as it overlaps with the magazine's atheist ethos, which treats religions as sets of unscientific beliefs. Many fundamentalist Christians (although not only them) were against the gender-neutral marriage law that came into effect in 2017, and they explained their views by referring to religious beliefs that skeptics considered superstitions. For example, in the following passage, gay conversion therapy is harshly criticized and judged as dangerous:

Most belief medications, like the tap water that is used in small quantities as a cure in homeopathy, or distant healing, are generally harmless. But for example, gay conversion therapies that aim to make homosexual people straight may at worst lead to suicidal behavior. (12)

Here, sexual rights and the acceptance of homosexuality are associated with modernity. It has been pointed out that in several Western countries, homophobia is associated with Islam, and ethnic minorities are assumed to be heterosexual (e.g., Haritaworn, Tauqir, and Erdem 2008). Even though Muslims or ethnic minorities are not discussed in this example, it is quite evident that the acceptance of homosexuality is linked with modernity and rationality, as gay conversion therapy is seen as similar to homeopathy and distant healing. In Nordic countries, equality is widely supported, and although criticisms are raised against gender studies and feminism, the importance of equality is rarely questioned.

## Conclusions

In this article, we have introduced our analysis of gendered boundary-work within the Finnish skepticism movement. We have identified six distinct but overlapping forms of gendered boundary-work. In the first two forms of boundary-work, *science as masculine* and *questioning women*, the association between masculinity and science is produced in subtle ways that nevertheless marginalize women and exclude them from the center of scientific thinking. In these two forms, scientists are depicted as men, and women's knowledge is questioned. In the next two forms of boundary-work, *CAM as feminine* and *debating the status of gender studies*, broad areas of thought in CAM and WGFS are placed outside of the scientific realm. Consequently, women as users and producers of CAM, and women as producers of WGFS knowledge, are debarred from science. The last two forms of boundary-work, *gender within the skepticism movement* and *supporting equality*, can be understood as internal debates about how to deal

with the issue of “gender” within the skepticism movement. As Nordic countries are characterized by a strong political emphasis on equality between women and men as a national goal, and “everybody” in these countries claims to be in favor of equality (Magnusson 2008, 81), gender issues cannot be sidelined. Yet paradoxically, even though equality is regarded as an issue, at the same time women get excluded from the skepticism movement.

It is evident that science (i.e., the academic endeavor as a whole, including the social sciences and humanities) needs its defenders and protectors of its autonomy, and as such, the aims of the skepticism movement are well justified. However, it is by no means trivial to ponder the forms these activities to defend science take. Even if the exclusions are subtle, hidden, or humorous, the consequences might be serious for the women who are excluded not just from the defense but also from science altogether. Likewise, the exclusion or belittlement of women’s knowledge production in the academy may have deep structural effects. Indeed, our analysis indicates that there is a need to look deeply into science-based social movements: exclusive structural tactics are part and parcel of such movements’ mundane activities as our examples from Skepsis ry’s popular magazine demonstrate. As Mellor (2003, 521, 531) argues, in this kind of “routine boundary-work,” several boundaries are worked on at the same time. The writings of the skepticism movement draw the boundary between science and nonscience and simultaneously also generate boundaries between women and men as knowledge producers and legitimate intellectual actors. Thus, in speaking for vulnerable groups (e.g., irrational and misguided women), the movement makes those groups more vulnerable—and less able—to participate in science. This places these groups (women, and men with the “wrong kinds” of masculinity) at the bottom of the hierarchy of knowledge production.

To sum up, gender is an important aspect of the boundary-work undertaken by the movement to establish boundaries between science and nonscience. In this process, the work of women and nonhegemonic men is regularly marginalized and delegitimized, while hegemonic masculinity is connected with “true” science, with men as its “true” bearers. It is important for STS to recognize this kind of boundary-drawing, as it is only through such recognition that the tackling of inequalities becomes possible. However, the skepticism movement has only very rarely been an object of critical inquiry within STS despite the fact that it is a visible movement that has spread across different countries and various cultural contexts.

Analyzing the ways in which gender is used in boundary-work increases awareness of the gendered nature of science at the highest echelons of society.

Our article stresses the importance of taking gender into account in the processes of boundary-work. A similar insight has recently been highlighted by Pereira (2019) within the field of STS. As Forstorp (2005) argues, the skepticism movement maintains the authority of science through the idea of standardized, objective, monolithic, and universal knowledge and through the production of such dichotomies as knowledge and belief, science and humbug. Based on our analysis, it seems that these dichotomies, as well as the image of “the best, most authoritative knowledge producer as white, Western, male and middle class” (Pereira 2019, 340), are taken for granted in this male-dominated movement at least in our data from Finland. The forms of boundary-work we were able to identify also seem to be established and long-standing, as our data span thirty years. Precisely for this reason, more analysis is needed to understand this movement and its gendered boundary-work in different countries and temporal settings. Although we have focused on Finland in this study, we see our case as one example from an international community of skeptics, and hence, we consider it likely that boundary-work between science and unscientific knowledge also takes gendered forms in other countries. Of course, as we have illustrated in this article, the skeptics’ community in Finland does have some specifically Nordic characteristics. Yet, our exploration provides a point of departure for more scholarship on the international skepticism movement, including comparisons with other countries and cultures where the movement has a foothold.

## Appendix

### *A List of All the Passages Used as Examples*

1. Roponen, P. 1991. “Usko ja tietoisusko” [Belief and belief in science]. *Skeptikko*, March, 5.
2. Suhonen, M. 2000. “Kaalinlehti lievittää kipua?” [Gabbage leaf relieves pain?]. *Skeptikko*, January, 34.
3. Galkin, D. 2006. “Skeptikko pulassa” [Skeptic in trouble]. *Skeptikko*, April, 19.
4. Huldén, L. 2000. “Historiallisuus ei ole hyväksyttävä argumentti lääkeyrttien käytön puolesta” [Historicalness is not an acceptable argument for the use of medicinal herbs]. *Skeptikko*, January, 14.

5. Brotherus, R., and S. Hiltunen. 1995. "Helli, elä ja hoivaa" [Cherish, live and care]. *Skeptikko*, February, 19.
6. Ollikainen, M. 1997. "Toimittajalta" [From the editor]. *Skeptikko*, April, 10.
7. Niemelä, J. 2007. "Kirjat: Eevan tyttäristä ja vähän muustakin" [Books: About Eve's daughters and some other issues]. *Skeptikko*, February, 35.
8. Kupiainen, A. 1997. "Luonnontieteet ja postmodernismi" [Natural sciences and postmodernism]. *Skeptikko*, April, 7.
9. Järvinen, R. 2011. "Pääkirjoitus" [Editorial]. *Skeptikko*, February, 3.
10. Ollikainen, M. 1998. "Miksi skepsismi ei kiinnosta feministejä?" [Why does scepticism not interest feminists?]. *Skeptikko*, January, 18.
11. Salmi, I. 2007. "Skepsis, ilmastonmuutos ja Kopernikus" [Skepsis, climate change and Copernicus]. *Skeptikko*, March, 11.
12. Järvinen, R. 2016. "Eduskunnan oikeusasiamies: Myllykankaan lausumat osa lääketieteellistä keskustelua" [The Parliamentary Ombudsman: The accounts of Myllykangas are part of medical discussion]. *Skeptikko*, January, 11.

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