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Embodied cognition and information experiences of transgender people

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Introduction. This paper examines how the concept of embodied cognition can be used to better understand information experiences where an individual's body plays a major role. We will examine information grounded in body-based actions, as well as information sharing through bodies and gender expression on transgender people. The term 'transgender' is used as an umbrella term for diverse gender-variant identities.

Method. The data includes 25 semi-structured interviews with Finnish binary and non-binary transgender people.

Analysis. Interviews were analysed with a combination of theoretically and empirically driven content analysis.

Results. Embodiment plays a significant role in transgender people's information experiences in relation to their gender identity. These information experiences involve knowledge derived from emotions, affects and senses. Gender expression happens in relation to others. Moreover, gender expression is constantly created and shared with others through dress and style.

Conclusions. In the context of information seeking and the sharing of intimate and personal topics, the concept of embodied cognition deepens the understanding of information as embodied, situational and social. This concept offers a new perspective of information experiences as embodied, and it helps to dismantle the body-mind dichotomy.

Introduction

Information experience is a concept that integrates all information-related actions, thoughts and feelings. When immersed in the information environment, people are engaged with information by constellations of ‘spoken and written words, gestures, smells, pictures, memories, melodies, clothing and ambient sounds’ (Hughes 2014, 34). Information experience is situational, embodied and perceptual. It includes documentary, sociocultural, sensory and internal information such as subjective emotions and feelings, as well as others’ affects. (Lloyd 2014; Lupton 2014.) In this paper, we understand information as ‘any difference which makes a difference’ to a person. Information becomes meaningful as it is recognized against the particular agreed upon knowledges and in relation to interaction with others (Lloyd 2014).

In this study, we will focus on embodied information, including the sensory information and affects coming from our body, the information coming from others’ bodies, and information sharing with our bodies. Embodiment can be defined as ‘existential condition in which the body is the subjective source or intersubjective ground of experience’ and the concept can help with the cultural understanding of the body (Csordas 1999). Additionally, Davis (1997) defines embodiment as experience or social practice in concrete social, cultural and historical context. The concept of embodied cognition understands the human body as simultaneously an object of culture and a subject of cognition (Cheville 2005).

Lloyd (2014) has criticized the understanding of information as a cognitive process privileging the cognitive over the corporeal. In this study we understand cognition in its broadest sense (see Keitly and Leazer 2018), with embodiment and affects as important elements as conscious thoughts of the person’s knowledge. Affects are deeply embodied (Gallagher 2014). The role of affects as part of the information-seeking process have been studied in their models by Wilson (1981), Kuhlthau (1991), Dervin (1983) and Nahl (2007), for example. Savolainen (2014) argues that in these models, the motivational aspects of affects and emotions play a major role in accessing, seeking and using information. Thus far, researchers have emphasised the motivational role of negative emotions such as anxiety in early staged information needs (Ruthven 2019; Savolainen 2014; Kuhlthau 1991).

Body image includes the physiological, social and physical dimensions of one’s body. Body image involves conscious reflection on one’s body and its possibilities (Weiss 1999). Based on Merleau-Ponty’s (1945/2012) thinking, a conscious understanding of one’s body presupposes a more primary, pre-reflective way of experiencing the body. Additionally, Foucault (1976) argues that we understand our bodies through a series of disciplinary practices that socially categorise bodies and submit them to hierarchical differentiations.

This study, in broadening the perspectives of information studies research on the topic, draws on social constructionism (Foucault 1976) and queer theory (Butler 1990). The queer theoretical approach to difference and identity, without ignoring subjective experiences, offers a critical tool for analysis. On the other hand, queer theory pays little attention to the materiality of lived transgender experiences (Elliot 2010; Hines 2007). To plug this gap, the phenomenological understanding of the body (Merleau-Ponty 1945/2012) reinforces the understanding of the materiality of the transgender phenomenon.

In general, there is limited research on the embodied information of transgender individuals. This article aims to fill a knowledge gap in relation to what kind of information do senses, emotions and affects contribute to a transgender person’s gender identity and what kind of information does others’ embodiment provide to transgender people. Additionally, in this article we study how transgender individuals experience the creating and sharing of the gender identity and its expression in interaction with the surrounding environment and how do gender norms affect gender expression and embodied experience of transgender people.

Theoretical background

Embodiment affects information experiences in different ways. First, information can come from within the body. Embodied information is perceived through the senses and other corporeal experiences (Cox 2018; Cox, Griffin and Hartel 2017; Gorichanaz 2015; Lloyd 2007) such as affects and emotions. Embodied information is especially important at the early stages of information need development (Ruthven 2019). In fields such as nursing and psychology, embodied practices include body listening, self-monitoring and observational learning (St. Jean, Jindal and Chan 2018).

Second, body-related information practices include learning by observing others' bodies and hearing about their experiences ([St. Jean, Jindal and Chan. 2018](#); [Bonner and Lloyd 2011](#)). Reading others' bodies has been underrepresented in relation to oral information as a valued source of information ([Cox, Griffin and Hartel 2017](#)). In many cases, observing others may play an important role in obtaining information ([St. Jean, Jindal and Chan 2018](#); [Harviainen 2015](#); [Lloyd, Kennan, Thompson and Qayyum 2013](#)).

Third, we produce embodied information with our bodies ([Prigoda and McKenzie 2007](#)) and share this knowledge through our body with others ([Lloyd 2014](#)). Information is displayed, for example, by walking, talking and other embodied practices, as well as through style and clothing ([Guzik 2018](#); [Cox, Griffin and Hartel 2017](#); [Olsson 2010](#)). When it comes to gender, dress may be understood as performative in specific historical contexts, and the dressed body becomes a common way of reading gender ([Gunn 2015](#); for gender performativity, see [Butler 1990](#)), with feminine usually equating with female and masculine equating with male. Although dress can be seen as performative, this does not mean it is entirely voluntary ([Nicholas 2014](#)). Besides dress, actions and bodies themselves are also characterised as masculine and feminine according to their form ([Kondelin 2014](#)).

Embodiment has been the focus of information studies in the context of work (e.g. [Olsson 2015](#); [Bonner and Lloyd 2011](#); [Lloyd 2009](#); [Lloyd 2007](#); [Olsson 2010](#)), as well as the everyday life of refugees ([Lloyd, Kennan, Thompson and Qayyum 2013](#)), car restorers ([Lloyd and Olsson 2018](#)) and runners ([Gorichanaz 2015](#)). This study focuses on identity-related information which can be described as a *deeply meaningful and intensely personal situation with life-long impacts* ([Clemens and Cushing 2010](#)) or *higher information* with special meaning for the information seeker ([Kari and Hartel 2007](#)). In this context, the subjective experience – including affects and embodiment – can be considered a source of information need, and it is approached through the concept of embodied cognition. This approach is somewhat distinct from the perspectives of embodiment in the contexts outlined above. We suggest that the notion of embodied cognition offers an essential tool for analysing embodiment and information experiences. In this study, we aim to understand the phenomenon of individual experience and attempt to recognise how wider structures influence the individual's embodied experience.

Embodied cognition

The concept of embodied cognition presents human body both as an object of culture and a subject of cognition ([Cheville 2005](#)). It deepens the understanding of experiences of the body in social and material environment and includes all kinds of physical and social action in physical, material, social and cultural environments as parts of an extended cognitive system ([Lindblom 2015](#)). Key to embodied cognition is an understanding that cognitive processes and interaction are deeply shaped by the body ([Cox, Griffin and Hartel 2017](#); [Lindblom 2015](#)).

The concept of embodied cognition was introduced in the fields of the philosophy of the mind and cognitive science. It has been further developed in artificial intelligence, neuroscience and linguistics ([Cox 2018](#); [Cheville 2005](#)). The concept of embodied cognition has its roots in phenomenology, especially in Merleau-Ponty's thinking ([Cox 2018](#); [Gallagher 2014](#)). Merleau-Ponty ([1945/2012](#)) highlights the importance of bodily knowledge and distinguishes between cognition, motive, perception and emotion. The body is always both natural and cultural. The social encounter needs to be understood as a 'reading' of others through gestures and other bodily traces, taking this term both in its literal and figurative senses ([Merleau-Ponty 1945/2012](#); [Landes 2017](#)).

Additionally, Foucault's work can be considered important to the theory of embodied cognition ([Cheville 2005](#)). Foucault's theories offer a perspective on how the boundaries of culture and cognition are less clear-cut than they are generally assumed to be ([Cheville 2005](#)). Deployments of power are directly connected with the body. Biology and history are bound together in a complex fashion, in accordance with the development of the modern technologies of power which take life as their objective ([Foucault 1976](#)).

In the field of information studies, the concept of embodied cognition has been used in the context of library space as sensorial experience ([Cox 2019](#)), as well as in seeking to understand leisure activities ([Cox, Griffin and Hartel 2017](#)). Lueg ([2015](#)) also notes that analysis of bodily characteristics shapes information through perception. Bodily characteristics affect how we seek information, as well as how we see the world ([Lueg 2015](#)).

Transgender people

The term ‘transgender’ is an umbrella term for diverse gender-variant identities. Transgender people may identify more strongly with binary gender identity (male or female) or with a variance that falls outside the dichotomous gender constructions prevalent in Western cultures (e.g. individuals who feel they possess both genders or neither) ([Cook et al. 2017](#); [Mayer et al. 2008](#)).

Transgender people tend to actively seek information in relation to their own gender identity ([Floegel and Costello 2019](#); [Pohjanen and Kortelainen 2016](#); [Adams and Peirce 2006](#); [Taylor 2002](#)). Finding information about the transgender phenomenon plays an important role in building one’s gender identity ([Pohjanen and Kortelainen 2016](#); [Beemyn and Rankin 2011](#)), although an identity may begin to develop even before one has a name for it ([Morgan and Stevens 2012](#)). Gender identity is developed through the body in relation to the surrounding environment and its assumptions. Gender identity is not only subjective but fundamentally social and intersubjective ([Kähkönen 2018](#), [Nicholas 2014](#)).

Media presentations of gender and sexual minorities, especially in relation to lived experiences ([Floegel and Costello 2019](#), [Pohjanen and Kortelainen 2016](#)), are scarce. The Internet has been ranked as the most important source of information for transgender people because of its anonymity and easy access, although there are problems with both the quantity and quality of information ([Levitt and Ippolito, 2014](#); [Beiriger and Jackson 2007](#); [Adams and Peirce 2006](#); [Taylor 2002](#)). Cyberspace and social media sites like Twitter, Youtube, Instagram and Tumblr are platforms where transgender people can share information, including embodied information in relation to the transition process ([Karami, Webb and Kitzie 2018](#); [Hawkins and Haimson 2018](#); [Kitzie 2017](#)).

Transgender people confirm safety issues, including discrimination, violence and harassment, are widespread in Europe ([FRA – European Union Agency for Fundamental Rights 2014](#)). Safety issues may range from physical to emotional unsafety. Feelings of unsafety may cause refraining from activities such as sport and cause anxiety, distress and sadness ([Linander, Goicelea, Alm, Hammarström and Harryson 2019](#)).

In relation to gender norms, this study relies on the critiques of e.g. Hines ([2007](#)) and Spade ([2003](#)) concerning the medical perspective of the transgender and binary understanding of gender through male/female categories (in the Nordic context, see [Linander, Alm, Goicelea and Harryson 2019](#)). Medical professionals have wielded enormous power over the range of possible ways in which gender-variant individuals can express their gendered identities ([Irving 2013](#)). Although we do not examine the medical context in this study, we claim that it significantly influences the norms of gender expression for transgender people.

Aim and research questions

This study examines the information experiences of transgender people with a focus on embodied information and affects as part of these experiences. We are interested in the social forms of information experiences, especially in embodied information sharing, and to examine the phenomenon of transgender embodiment at both the individual and interpersonal levels. The notion of embodied cognition is used as a tool for analysing embodiment and information experiences.

Our research questions are formulated as follows:

RQ1: What kind of information do senses, emotions and affects contribute to transgender person’s gender identity?

RQ2: What kind of information does others’ embodiment provide transgender people?

RQ3: How transgender individuals experience the creating and sharing of the gender identity and its expression in interaction with the surrounding environment?

RQ4: How do gender norms affect gender expression and embodied experience of transgender people?

Method

This is a qualitative study, which uses a purposive sampling method. The data for this study was collected in semi-structured interviews in 2016 with 25 Finnish people. Interviewees were approached through an online questionnaire directed at gender minority people conducted in Finnish in the spring of 2016. The survey focused on information seeking about gender minority-related topics, sources, barriers and enablers, and it was executed by this article's first author. A total of 41 respondents were willing to participate in the interviews and provided their contact information. These respondents were contacted, and 25 were ultimately willing to participate in the interviews. The interviewees received no payment, whether financial or material, for participating in the interviews. Because of the sampling method and the nature of the qualitative research method, the results cannot be generalised.

All the interviews were recorded. Questionnaire data was not used as background information for the interviews to avoid unnecessary preconceptions on the part of the interviewer. Interviews were conducted in Finnish: 17 face-to-face, 5 via Skype, and 3 by phone. The interviews concerned gender identity-related information needs, sources, information sharing and factors affecting information seeking.

All personal data, such as email addresses, were separated from the data used in the research, and security issues were considered when storing the data. Interviews took from 35 minutes to 1 hour 59 minutes, for a total of 29 hours 25 minutes. The average time per interview was 1 hour 10 minutes. Interviews were transcribed and coded using NVivo Plus software. During the transcribing process, it became evident that embodiment was apparent in many of these themes in one way or another, and this was examined more closely.

We analysed the data as a mixture of theoretically and empirically driven analysis. At the beginning, we reviewed the coding data and did coding with line by line to gather all statements about embodiment or bodily information. We constructed three main categories based on the theoretical background given below. We examined the coding in all categories, and created subcategories based on the empirical data. In this process, our aim was to be open to the data to respect the experiences of the interviewees. Table 1 presents the categories and subcategories of the analysing frame.

Table 1: Categories and subcategories of coding.

<i>Category</i>	<i>Subcategory</i>
Body as an information source	Emotions and affects
	Sensory information
Interaction with others	Media presentation
	Close people
	Gender expression
Information sharing	How people see me
	Passing/blending
	Fear of violence

Findings

The ages of the interviewees were between 15 and 72; the average age was 33. For privacy reasons, we use age groups instead of precise ages. Two interviewees were between 15 and 19, 11 were between 20 and 29, 7 were between 30 and 39, 2 were between 40 and 49, 2 were between 50 and 56 years and 2 were 60 or older. Overall, interviewees were mainly highly educated, white, Finnish and living in an urban environment. The most common minority status (other than being transgender) was belonging to a sexual minority. All but one of the interviewees lived in Finland.

Eighteen had finished or were in the middle of the transition process. Four of the interviewees were considering starting it, and three were presumed not to have access to it. Interviewees' definitions of their gender identities are listed in Table 2.

Table 2: Gender experience definitions.

- n Gender experience definition***
- 4 Transmale
 - 3 Gender non-conforming
 - 2 Male
 - 2 Female
 - 2 No gender
 - 1 Something between female and male
 - 1 The third option
 - 1 Male, other, who cares
 - 1 Transgender female
 - 1 Transgender male
 - 1 Fluid, gender non-conforming
 - 1 Boy, transboy
 - 1 Transgender
 - 1 Transboy
 - 1 Androgyne male
 - 1 Non-binary transmasculine guy
 - 1 (did not define)

N=25

There was restlessness in my being: the body works as an information source

Interviewees described their experiences of the information needs arising from discomfort with one's own body – an experience that one's body is not what it should be. These feelings form both body image and gender identity. These situations were described by the sentiment that 'something is wrong', which might trigger information seeking. Paradoxically, information seeking cannot start until the person discovers the existence of the transgender phenomenon serendipitously (see also [Pohjanen and Kortelainen 2016](#)). Until then, such information needs are hidden but nevertheless real.

Especially afterwards, when I first tried to find some explanation for my experience, and it caused me something, well, before that there was restlessness in my being, but afterwards I found a name for it, that I am not crazy, and there is some reason for it, it caused something. Well, after that I have been more accepting of my body and have been able to be at ease with my body and at some level understand it more (Male, I05).

Bodily experiences were described as feeling one's own body to be strange or odd and, for example, the feeling that 'I am here, and my body is somewhere next to me'. Such experiences of the body became evident in childhood or puberty, or sometimes later. Information about the transgender phenomenon had helped the interviewees understand their own bodily experiences and affects. Experiences and intuition played a major role in understanding one's own body. One interviewee described this as '*some kind of emotional knowledge, or something like the direction I would like to go in or shape my body, or what is good or bad for me*' (No-gender, I03). Affects and emotions as part of embodied cognition may help to evaluate what information is relevant to the individual.

Sensory information also played an important role for the interviewees when they sought to understand their own body. Sensory information belongs to the experience of body and gender. The voice was experienced as an important part of both gender expression and gender experience by some of the interviewees. One interviewee spoke of how *they* recorded *their* speech to listen to how hormonal treatment might affect their voice. Other senses like vision (how I look, how I would like to look) and touch were significant in understanding their own body.

Well, it gives you the kind of knowledge, for example, that if someone touches a part of your body which you don't feel part of yourself, or, or – this is a complicated part of the transgender experience generally that it is your body, but at the same time it can feel like it is not. So, if someone touches a part of my body it kind of

emphasises it, and it can emphasise that it is not part of my body, no matter what part of the body it is, for example cheeks that are too sharp or too high, which I don't like, or features that are too masculine. Well, I don't know if this is information or not, but it can give you the knowledge that this does not feel part of me or this is not something which is part of me (Fluid, gender non-conforming, I20).

I don't recognise myself in existing discussions: Interaction with others and (in)visibility

People with whom one can relate offered embodied knowledge and helped in understanding one's own experience. Most of the interviewees felt there was a lack of media representations of transgender people. However, they also found that the rarely seen transgender-inclusive media representations did not help their process of trying to understand their own experiences. Instead, the limited media representation negatively affected impressions of the transgender phenomenon and how common it was. In fiction, transgender people usually play a small role, or transgender characters are played by cisgender people. Transgender people are represented as unhappy and as meeting a tragic end. Usually, any representation concerns binary transgender people, and mostly transwoman.

It is usually spoken about using terms like opposite gender or other terms like that, which makes me feel like, well, I am somewhere in between there but I don't recognise myself in the existing discussion or in the subjects they talk about (Gender non-conforming, I14).

Transgender people offered body images to observe and to reflect on in a confidential environment. People in the same situation play an important role when seeking information about embodied changes during the transition process. Such information can also be found on the Internet, for example, in YouTube or Instagram (see also [Karami, Webb and Kitzie 2018](#); [Kitzie 2017](#)). Social media platforms are used to share information, for example, about the bodily changes which happen during hormonal treatment or surgery. These platforms were largely used to obtain information from other transgender people rather than to share their own changes. Real-life observation and discussions were also sources of embodied information. This information concerned hormonal treatment and its effects, surgery and recovery. Embodied information was also sought from cisgender people.

I seek out their company to learn from them, to relate to them. From women, I get the possibility to relate, how to dress, how to be, how to be. That kind of work I do all the time, learning how to move, what kind of customs and gestures there are. There is continual information gathering on this subject (Transgender, I22).

A body which does not fit the norm: Information sharing and norms

. A body which does not fit the norm: Information sharing and norms

Especially for binary transgender people, clothing and dress were described to bring happiness and build self-esteem. Emotions and affects set the course for expressing one's own gendered experience in social reality. However, others' reactions may cause negative emotions such as shame and guilt, especially in adolescence (see also [Hines 2007](#)). This happens especially in cases of feminine gender expression in terms of gender norms (see also [Hines 2007](#)). Such situations have caused conflict and, in some cases, a need to hide one's gender identity. On the other hand, for non-binary transgender people, gender expression has caused different kinds of question. One of the interviewees describes information seeking in answer to questions like 'Do I have to announce my non-gender to my family and friends and others? Do I have to perform it somehow?' (I9 Non-gender).

Many interviewees talked about uncertain moments when they felt unsure whether their experience was real, or moments when someone was questioning their identity. This was also connected with body image: do I have to express my gender experience in a certain way to others to be seen the way I want to be seen?

Nowadays I am far more confident than I was before, and it has for sure affected my identity expression positively, for example. Or, like, whatever my gender, I have quite a feminine style of clothes, and I don't see a problem with that. But when I was like 16, then I was thinking like, oh no, could I be trans, well, I cannot

be because I had pink clothes when I was six. So, like that confidence has been important, and also, being broad-minded about things (Transgender male, 118).

Passing or blending, referring to be read by others in one's experienced gender, was important for some interviewees, because it offered the experience of being 'just like anyone else'. Passing or blending concerned the physical body, tallness or voice, as well as other gender markers such as clothes, hair or names. All interviewees did not see passing or blending as an option, especially in cases of non-binary gender expression (see also [Hines 2007](#)). In other words, when the external appearance is not distinctly or merely feminine or masculine, passing or blending may not be possible (or wanted, for that matter). This was described also by stating that it is impossible to be confronted as non-binary by other people without telling the own status to them.

Fear of violence can limit the places in which gender can be expressed and how (see also [Linander, Goicolea, Alm, Hammarström and Harryson 2019](#)). One interviewee had experienced physical violence in a public place because of their transgender status. Several interviewees told of suffering from fear of violence in public places. Fear of violence may not only be limited to physical violence but also to harassment and inappropriate behaviour in a broader sense, involving e.g. questions about genitals from strangers. A transgender person who is not passing or blending may feel they risk not being supported or even accepted in public places (see also [Guzik 2018](#)).

Well, maybe, this may be a bit of a shaky thought, but maybe that, that embodied knowledge is connected also to when you are moving in a public place, with a body which does not fit the norms, in this case, gender norms, in that case the body itself gives you knowledge about how gender is seen, and how gender affects everyone and how we are seen and what kind of space we are able to use, what is permissible and acknowledged, and what you may be punished for in a public place (Non-binary transmasculine guy, 125.)

Discussion

In this study, our aim was to study information experiences of transgender people with a focus on embodied information. The study participants represented diverse group of people in terms of both age and gender identities. This paper does not claim that all the transgender people are able to find forms of embodied information relevant to their individual experiences. Instead, our aim is to demonstrate varying forms of embodied information in relation to gender identity.

Embodied cognition offered us a tool for analysing this phenomenon through cognitive, sensory, affective and social forms of information. Based on the findings of the study, the embodied information that forms embodied knowledge is derived from sensory experiences, affects and emotions, as well as others' affects and emotions. Embodied information significantly contributed to the process of forming the gender identity. These findings answer to research question 1 relating the role of embodied information to transgender person's gender identity. Additionally, others offer embodied knowledge through their bodies. Embodied knowledge is created and shared with others through style and other forms of gender expression.

The findings gave indication of a process where emotions and affects grew into an information need and, on the other hand, helped to understand the information that is relevant for the individual. The senses produce embodied knowledge, and through the senses, one's own body is experienced. Understanding one's own body and finding balance in presenting gender in a way that brings happiness builds an embodied knowledge of the self. As previous studies have noted, body satisfaction increased after transition treatments ([McGuire, Doty, Catalpa and Ola 2016](#)).

Many of the interviewees described uncertain moments when someone questioned their identity and gender expression. This exemplifies a looking glass experience (see [Wella and Webber 2018](#); [Ahmed 2004](#); [Cooley 1922](#)), in which humans have an imagined image of how they are seen by others. Based on this, human beings imagine the judgements a person is making about them. According to the interviewees, negative emotions such as shame and guilt can arise because of others' lack of acceptance of a person's gender expression. Others' affects are form of information that affect to us (see [Lupton 2014](#)) causing also physical reactions (see [Ahmed 2004](#)). Through affects, others influence our experiences of ourselves.

Different kinds of body image come from social surroundings, media and other forms of everyday life. Cultural representation can be significant for transgender people in developing self-awareness ([Hines 2007](#)), although in this study transgender people in the media played a minor role when an understanding of one's own experience was sought, in contradiction of Floegel and Costello ([2019](#)). Instead, other transgender and cisgender people in a close environment offered embodied knowledge and bodies to observe, supporting the findings of Pohjanen and Kortelainen ([2016](#)). These findings answer to research question 2 that focuses on the role of others in providing embodied information to transgender people. Observing other peoples' embodiment can be understood as reading of others ([Merleau-Ponty 1945/2012](#); [Landes 2017](#)). Supporting the findings of previous studies, someone or something to relate to is important for understanding one's own experience and for identifying with something ([Pohjanen and Kortelainen 2016](#); [Hines 2007](#)).

In terms of research question 3, according to the interviewees, information sharing about one's own identity may happen with the aim of passing or blending, although passing or blending may not always be possible. Transgender identity when not passing or blending is exposed and shared with others in public with the awareness that one may not be supported or even accepted. Findings of this study support the findings of Floegel and Costello ([2019](#)) stating that information seeking in relation to one's own gender identity takes much effort in case of transgender individuals, because the media is overloaded with heteronormativity.

Results provide insight on how do gender norms affect gender expression and embodied experience of transgender people. Fear of violence may influence gender expression and thus the ability to share embodied information. One interviewee (I25) described gender representation as creating the possibility of being *punished* in public. This phrase recalls the Foucauldian perspective of norms and power. According to Taylor ([2009](#)), for Foucault, power passes through and along norms. Norms become normalising through sedimentation, and over time we stop thinking critically about phenomena and ultimately give them little thought. The norm provides the grounds not only for distinguishing 'normal' and 'abnormal' individuals and populations but also for sanctioning intervention in both to ensure conformity, to preserve or create the normal and to effectively eliminate the threat posed by resisting individuals and populations ([Taylor 2009](#)). Feminine and masculine gender expressions exemplify norms which may not be thought of in social encounters until someone breaks them. However, the social pressure compels everyone to take part in the repetition of sex in one way or the other. ([Foucault 1976](#)).

Fear of violence can cause a negative circle for diverse gender expressions. If non-binary gender expression is not possible because of the fear of violence, non-binary gender expression does not occur. Norms stick tight. As Weiss ([1999](#)) states, *'for open and test the limits of binary cultural fantasies that define male and female, masculine and feminine, heterosexual and homosexual, white and black, young and old bodies [...] the goal is to discover new, more fluid foundations [...] To change the imaginary, we must in turn create new images of the body'* ([Weiss 1999](#), 67).

Conclusion

This empirical study on transgender people's information experiences illustrate embodied cognition, that, as a concept, can be used to dismantle the dichotomy between body and mind. The findings emphasise the importance of one's one body as an important part of gender experience. To continue with the important topic of this study, embodied knowledge should be examined in relation to transition treatment e.g. the hormonal and surgical treatment of transgender individuals. Embodied knowledge connected with transition treatment should be studied further. This paper broadens the understanding of embodied knowledge and its importance to other information-related actions. The concept of embodied cognition helps to understand the role embodiment plays in information experience. When there is a lack of information and people with whom transgender people can relate in the surrounding world, embodied experiences and affects become an especially important source of information.

Embodied cognition is a concept which may be used to understand that body and mind cannot be separated in gender experience. The role of the affects and emotions may also not be separable from reason where understanding one's own experience is concerned. The body *knows* what is relevant to it, and our reasoning is not separate from the body. Besides the separation between body and mind, in our paper, we examined the inseparability of social reality and human experience. Our own experience happens in the social world, and our belonging to the social reality is embedded in our embodiment. Norms set rules for social encounters,

and binary gender roles are linked to transgender people's experience of gender expression. Our study presented how these norms affect both gender experience and gender expression.

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