

THE METHOD OF PHOTO-ELICITATION FROM A PHENOMENOLOGICAL PERSPECTIVE

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1. Introduction

There is a growing interest in the relation between workspace design and innovation. On the one hand, is the idea of designing an “innovation lab” that supports innovation. There are substantial financial investments involved when creating an innovation lab and there is evidence that such spaces can have short useful lifespan and some of them fail because they are not used as intended [Lewis and Moultrie 2005], [Fayard and Weeks 2011]. On the other hand, workspaces can be altered by the users for short or long terms to support innovation activities. The users hence become spatial designers themselves. A gap exists in research on the underlying mechanisms, architecture, and dynamics by which organisations can create an environment supporting continuous improvements and radical innovation on both individual and organisational levels [Turner et al. 2013], [Turner and Lee-Kelly 2013]. From design research we can contribute with a perspective on the underlying mechanisms and the dynamics in play in the area of workspace design and innovation. We can form the design research for the innovation labs, i.e. utopian specifically designed spaces for innovation, or the relationship between innovation, users and daily workspaces. We have chosen to acknowledge and study the complexity in relations between users, daily workspaces and innovation. Our hypothesis was that photo-elicitation could be a method to study that weave of complexity and research underlying dynamics.

In this article we discuss the method of the photo-elicited interview (PEI), as a tool in human-centred design research with respect to context and workspace. A phenomenological perspective focus on the human experience, examine and clarify situations, events and experiences as they occurs spontaneously in daily life [Seamon 2000]. This article intend to provide background theories from phenomenology and examples from an empirical study to discuss if and how PEI is instrumental in getting information from interviewees about their relation to their workspaces and innovation. Although the phenomenological theoretical perspective is relevant and therefore used here to describe human relation to workspaces and discuss the method, our use of specific notions from phenomenology aims firstly to support the analyse of the method to inform design research, and is not intended develop the phenomenological concepts themselves.

2. Background: The photograph in research

Methods derived from ethnographic research, are recommended for and being increasingly used in research on design [Rose 2012]. One example of a method derived from ethnographic research that can be useful in design research is photo-elicitation. Harper [2002] states that the potential in PEI largely unrecognized. The fundamental idea of PEI is to use a photograph during an interview. In this study the employee was taking the photographs used during the interview, themselves. Earlier studies using PEI, mostly in social studies, discuss the possibilities of using the method in the interview situation where it provides an opportunity to do an emerging analysis of the material [Jenkins et al. 2008]. Mannay [2010] writes about the possibility of using PEI and other visual methods in social

science research to make the familiar strange. One study noted how use of photographs influenced the relationship with interviewed children in a positive way, it was easier to create contact [Epstein et al. 2006]. The differences in the responses in interviews using images and text and interviews using words only, lie in the way we respond to these two forms of representation, in other words, words and images [Harper 2002]. Collier [1957] and Samuels [2004] both made comparative studies of word-only and photo-elicited interviews. They argue that using PEI results in more concrete information, it relieves the stress of being questioned, it creates a greater interest in taking part in the study, it sharpens the memory of the interviewee, and it provides much richer descriptions than word-only interviews. Additionally, the answers were more relevant to the interviewees, since they appeared to have more bearing to their everyday life and work. The phenomenological perspective is lightly touched upon in some articles on PEI [Scherer 1992], [Parker 2008]. The method has been used in service design research and has proven to give emotionally rich stories of experience of space [Venkatraman 2008]. Acknowledging the phenomenological perspective, to further underline a perspective that broadens the definition of spatial design (because it broadens the definition of space) into becoming *lived spatial design*, we aim at contributing to the use of PEI in design research. To develop the analysis of PEI applied to a study of workspaces, we will start with the relation between human and space in Martin Heidegger and Maurice Merleau-Ponty's thinking. For the question about what is possible to learn about workspaces from an interview using PEI, Heidegger's notions of 'everydayness', 'dwelling', 'ready-to-hand' and 'present-at-hand' is presented.

3. Theory

3.1 Workspaces

Workspaces, from a phenomenological perspective, are not experienced by an isolated subject separated from the space. Heidegger's notion of 'Dasein' in *Being and Time* [(1927) 2010, p. 54] means that there is no worldless existence, the existence is always being-in-the-world.

Dasein implies a strong relationship to space, that is, a 'being-in-the-world' which dwells in a space. According to Heidegger, the concept of dwelling is more than living in a home; it is connected to a dynamic relationship to staying and taking care [(1952) 2008, p. 351]. The workspace is not a dwelling, but also a building for work is "[...] in the domain of our dwelling" [Heidegger (1952) 2008, p. 347]. The domain of dwelling is thus not limited to a dwelling place, but can include for example a factory where a worker is at home, without having his or hers dwelling place there. The workspace is also a space interlaced with relation between tools and humans and this tool-structure is embedded in the context of the workspace. The basic character of dwelling is to spare, to preserve in nurturing things that grow and construct things that do not grow [Heidegger (1952) 2008, p. 351]. This reasoning put focus on workspaces as lived spaces, since they are in the domain of dwelling. Consequently, in Heidegger's discussion of space, space is not the mathematical construction but what it brings to existence and what has been made room for:

A space is something that has been made room for, something that has been freed, namely, within a boundary, Greek *peras*. A boundary is not that at which something stops but, as the Greeks recognized, a boundary is that from which something begins its essential unfolding. [Heidegger (1952) 2008, p. 356]

When the unfolding begins, the space *appears* to us. That appearance means that in the workspace for example, we find 'things of the kind' that the workspace is [ibid, 357]. In this study, the photographs the workers made of workspaces, could, at first have been interpreted as material space, describing the 'outward appearance' [Heidegger (1927) 2010, p. 63]. But, in the analysis the photographed examples of the spaces rather appears as spaces that had made room for innovation and what that meant for the workers.

The mathematical, three- or four-dimensional Cartesian notion of space is not applicable to understanding Heidegger's understanding of space, but there is a relation between them. In *Being and Time*, paragraphs 14–23, Heidegger shows that space is not a point in space; it is a there, (a *da*) where something is 'at home'. What is around us is an environment that is constructed from and in relationship to the Dasein, namely here, there, up down, also in relationship to broader existence as

north, south, or, for example, the sun that gives warmth. In this reasoning, the environment is given in primacy to the mathematical space. Distance, for example, is given to us in our embodied experience of distance. In the spontaneous understanding of space, we can feel closer to the door than to a lamp in the room, even if mathematically the distance to the lamp is shorter [Heidegger (1927) 2010, p. 107]. This experience involves not only our sight; it involves the body and its possibility to reach out and incorporate the world with all our senses and our body parts. This way of treating space is later unfolded by Merleau-Ponty, in his interest in the multi-sensory body as an intentional field in the environment [Merleau-Ponty (1945) 2002]. In *Eye and Mind* [(1961) 1993], Merleau-Ponty argues that if Descartes had examined the openings given to us by secondary qualities, for example colour, then he “[...] would have been obliged to find out how the uncertain murmur of colors can present us with things, forests, storms – in short the world” [Merleau-Ponty (1961) 1993, p. 133]. Merleau-Ponty here discusses how an artwork can bring forward the quality that put us in relationship with what is beyond the ‘envelope’. He means, that, what is totally visible is always *behind* or *after* or *in-between* the aspects of what we see.

Being in the world, for Heidegger, is being in the beings world [(1927) 2010, p. 4]. Accordingly and in regard to space, the notion of space in Heidegger’s thinking is *lived space*. In this study the question is if PEI, as a method, is fruitful for furthering a communication of lived experience of workspaces. Workspaces are also the architecture of human beings everyday world, and another question is how PEI, as a method, relates to the everydayness.

3.2 ‘Everydayness’

Heidegger discusses the everyday encounter with objects in *Building, Dwelling, Thinking* [(1952) 2008, pp. 358-359] and writes that in the distance we can be nearer to the object as an object than the one that uses it on a daily basis:

From this spot right here, we are there at the bridge [...]. From right here we may be even be much nearer to that bridge and to what it makes room for than someone who uses it daily as an indifferent river crossing.

Since the things we use in everyday work is so close to us, they are usually overlooked: ‘What is ontically nearest and familiar is ontologically the farthest, unrecognized and constantly overlooked in its ontological significance’ [Heidegger (1927) 2010, p. 43]. Dasein, he furthermore writes in *Being and Time* [(1927) 2010, p. 16] should be shown in manners where it is “*initially and for the most part* –in its average *everydayness* [*Alltäglichkeit*]”. For *the most part* means the way “in which Dasein shows itself for everyone ‘as a rule’, but not always.” [ibid., p. 371]. Everydayness is thus a way to be and incorporates the habitual; it is in the modus of indifference and seems to be impossible to escape from and the goal for the human is not to escape from the ‘they’. Everydayness “determines Dasein even when it has not chosen the they as its ‘hero’.” [ibid., p. 371]. Existence can, master the everyday for a shorter moment, but “[...] it can never extinguish it.” [ibid., p. 371]. The everydayness constructed of the ‘they’ [*das Man*] is interrelated to with what people mostly do, the doing what is expected of one. It “[...] dissolves one’s own Dasein completely into the kind of being of ‘the others’ [...]” [ibid., p. 126]. The PEI may here contribute to a reflection over what we are doing as the ‘they’.

3.3 ‘Present-at-hand’ and ‘ready-to-hand’

The things around us are given to us in different modalities in being, which can be described by the Heidegger’s concepts ‘present-at-hand’ or ‘objective presence’ (Ger. *Vorhandenheit*) and ‘ready-to-hand’ or ‘handiness’ (Ger. *Zuhandenheit*) (see [Heidegger (1927) 2010, pp. 71-76] and [Inwood 1999, p. 3] for the two different translations). In this study, the interviewees were asked to take photos of their workspace to show something that hindered or supported innovation. The spaces and objects they photographed were, for them, in their everyday working environment and in the practical work situation, in using them, given to them as ready-to-hand. According to Heidegger, in the practice of work things are understood in a tool-complex within a space where the things can refer to the other. In working and being in ones everyday life we use for example tools without reflecting about them and, according to Heidegger, we do not even see them when they are in ‘ready-to-handness’ in this way. In

this study, within the introduction of the question and the camera to the workers, the spontaneous and natural relationship to the environment is in some way broken. Heidegger describes an occasion like this as the moments when the tool provides resistance to being used and becomes intrusive or obvious. The invisible relationship has to be shaken in order to be visible. The ‘un-readiness-to-hand’ occurs when the things that we use cease to function or when there is an obstacle in using them. Heidegger has three ways in which something can be ‘unready-to-hand’: 1) when a tool is damaged or broken (conspicuous); 2) when a part is missing so the tool cannot function (obtrusive); and 3) which is of most interest here, when the entity prevents us from pursuing a project (obstinate) [Heidegger (1927) 2010, pp. 73-74]. In everyday work, the ‘un-ready-to-hand’ becomes a hindrance to reaching goals at work and to evoke the ‘present-at-hand’ relation to the things. In the following article, we will discuss how ‘un-readiness-to-hand’ was at play in the use of PEI.

4. Method

Employees from one design firm and from four manufacturing companies participated in the study that was conducted between 2010 and 2013. Study A, in Company 1, IDEO (an international design firm and innovation consultancy) was conducted with 7 employees who were professional designers and design managers. Study B, in four manufacturing companies, named Companies 2, 3, 4 and 6, was conducted with 24 informants, both on the managers and shop floor workers. All these informants worked in production or were connected to production. The decision to let the participants make their own photographs was motivated by the importance of using a suitable method that did not overshadow the informants’ experience of physical spaces with the researchers’ experiences or choices. The employees were given cameras and instructed to take photographs of their lived everyday workspace. The instruction was:

- ‘Think about physical environments or parts of environments at your company that, from your perspective, support innovations! Photograph five of them.’
- ‘Think about physical environments or parts of environments at your company that, from your perspective, hinder innovations! Photograph five of them.’

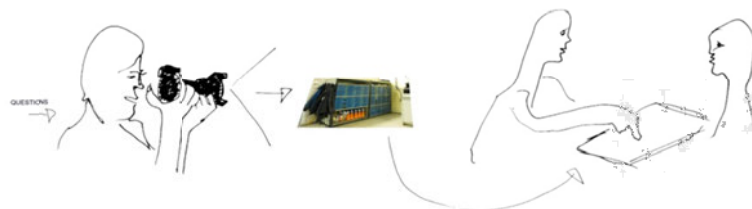


Figure 1. PEI process. From left to right: The interviewee photographed spaces considered hindering or supporting innovation. The photograph was then used as reflection material in groups and with individual informants (drawing made by author, photograph from I. 2.6)

Then the informants were to look for a motif inside or outside his or her workplace. Most of the informants immediately moved around, sometimes out of the design office or the factory, as can be seen from the motifs. The majority quickly found motifs they wanted to photograph and came back to the starting point and the researcher within 10-30 minutes. With 31 informants/interviewees the study ended up with around 300 photographs of the workers own understanding of spaces for innovation or hindrance of innovation.

The photographs were printed out or transferred to a computer to be viewed on the screen during the interview. The photographs were coded to informant and company/firm, only traceable to individual during research interview in this study and through an informant-code key document. (The latter was created in order to be able to exclude material if the interviewed person later wished to withdraw from the study.) Following the photography session, individual interviews took place immediately after in most of the cases. Since the photograph did not indicate the informants preferred reading, during the interviews, keywords and an interview were used to learn about the informants preferred reading and

the associations evoked by the photograph. The informant then spoke non-directively about every image with the researcher. The interview ended with the question: What is innovation for you? (there are no correct answers). In one of the manufacturing companies, a group interview was done.

5. Results - extracts from the material

The motifs in the material included project spaces, graphical material, informal meeting places, workshops, barriers, machines, and storages (For a detailed presentation of the results of the photo-elicited study, see Schaeffer and Eriksson [2014a] and [2014b]). The following four extracts from the material exemplify how space was presented in the photos and how the discussion evolved around the photos and which type of reflections that occurred. The four examples are chosen because they represent a wide sample from the material. In the following, the informant is abbreviated (I) succeeded by the code of the company and the informant. Author, conducting the interviews, is shortened (JS).

Extract 1. A designer at IDEO (Informant 1.5) said making the photograph was fun but that it was hard to ‘articulate why I felt a certain way about a space’ (I 1.5). He said he had to reflect on what it was in the spaces when choosing spaces perceived as supporting innovation. The same photograph could serve as a starting point for a story about a space for innovation and about a space that hinders innovation: ‘I often photographed a space, and I liked certain things about it but I can easily photograph the same space and put a negative comment ...right...so that was conflicted’ (I 1.5) It seems that the two stories come together in the space. Looking at his photograph of a workshop during the interview, that he thought supported innovation, he also talked about why he thought it hindered innovation. Thus, the photograph opened several layers in his thinking about spaces.

I 1.5: Yes it’s two people in there for the moment and again its messy; its loud, its energetic, its bright; its one space we can go and be focused ... and turn on music and again you are making things and there is natural lights coming through that window so... The other workshop does not have that natural light. You get a sense of; at least you get a sense of, where you are in the day, and if you are sculpting, it’s nice to have natural light shadow. And I just have a lot of good memories of that space because you are always on a mission when you are in there. [...] There are qualities about that space that are less than ideal but
JS: Aha, on the other hand...

I 1.5: Yes, it is a mess. I used to manage that shop and now someone else does it so the whole “feng shui” is all off in my opinion.

JS: Yes...

I 1.5: I set it up differently, and now it is kind of amusing and annoying at the same time when something is not in the place I think it should be.

In the interview, the informant also describes a multimodal experience of space when relating space to innovation. His answer incorporated different experiences: other human beings, the sense of hearing (music, loud noise), the sense of touch (making, sculpting), the sense of seeing (light, shadow, messy,) feelings (energetic, messy, amusing, annoying, focus, being on a mission), organizational freedom (possibility to turn on and off music), connection to the exterior (sense of time of the day) and past experiences that influences the here-and-now experience (good memories).

Extract 2. A man in his 50’s (I 6.1), works on the shop floor as an internal consultant for improvement work in a manufactory company. Improvement work is here seen as a process of continuous improvements, driven by the workers, in lean production. He has been working at the same production industrial company since 1995. He has known the company and his co-workers for a long time.

He chose to take two photographs of two identical situations (a meeting for improvement work) but created possibilities of analysing his work environment, according to himself, by taking the photograph in two different places and with two different groups. The photograph shows a group of people who has chosen the place and the furniture for their meeting themselves. The interviewee said: ‘By choosing furniture and place before the meeting has started, it helps [us] to think in a creative way and that provides [the] possibility of then entering subject of the meeting with open senses’ (I 6.1). He thinks that the space supported innovation because it was possible to be spontaneous and he said that the space did not have ‘an already habituated behaviour’ (I 6.1). The meeting takes place close to the production area, and materials can easily be provided during the meeting, illustrate what they want to say in order to find new ideas and solutions. As a contrast he photographed an improvement meeting

in which the group was assigned a place and furniture by the management. During the interview, the informant says: 'If the space [...] is limited in itself, and you yourself cannot influence anything, I think that the meeting becomes limited' (I 6.1). Limitations are defined as being located away from the production area, the meeting being habitual, assigned by management, and being uninteresting. During interview, the informant also commented on people's movement patterns in the room, stressing that this space already had a 'pre-learned behaviour or use' (I 6.1). For example, everyone have a place where they usually sit. Additionally, he said, they did not have material to work with.

When writing down the keywords and talking about the situation represented by the photograph, the informant connected to the moment he made the photograph, to the physical space, the people, the action, and the thinking in the company about meetings. He also reflected on the differences in the two spaces depicted. For example, the *objects* in the spaces (in the one meeting place the group improvised and chose their furnishings and in the other meeting the space was already designed). He also commented on *placement* (of the meeting space in proximity or distance to the production) and *objects facilitating the discussion*. He made connections between the freedom to organize space and the freedom of thought (that you feel freer to think if you are free to choose the place) and habits, (patterns of body posture and movement that he perceived constrained the possibility of thinking innovatively). When looking at the photographs, the informant not only commented on the workspace and the meeting, but also analysed the scene depicted in the photographs. He reflected on the position of the people, and the formal and informal leaders, as he studied the location of the people: who was standing where; who 'owns their chair'; the looks in the people's faces. The informant commented on the network of power influences, on what is possible to do, to think and say during the meeting. The two photographs elicited thoughts about power and leadership and its effects on improvement work.

Extract 3. A few photographs were made in a symbolic way; i.e. the motifs were connected to thoughts about the experience of the organization and innovative work efforts. In Company 2, a focus group was speaking about the photographs taken by the members of the group. The group discussed a photograph with a symbolic function made by informant 2.4, who in his professional role was responsible for ordering materials for production.

I 2.4: It's a chair; it's an empty chair. Unengaged personnel, they are not present.

I 2.7: This is your place then?

I 2.4: No it is not my place. It is a chair that symbolizes ...

I 2.7: ... that the person is on a meeting?

[laughter]

I 2.4: No but, in fact not present; he or she does not want to be engaged in thinking new ... and it works to present that.

JS: Is it a symbol of how you can be absent, sometimes?

I 2.4: Yes, I think that it's about being absent.

I 2.11: but another word might be non-involved.

I 2.4: Yes, that's right.

I 2.11: Not physically absent but...

I 2.4: Exactly.

JS: I can imagine that this chair can, of course, mean that you are really committed, too, that you are out somewhere and work. But that's not the way you...?

Multiple voices: No, then you are engaged in things that you should not be engaged in.

[laughter]

I 2.11: It is not given, that that is the case

I 2.4: No. But you are unengaged in...

[...]

As the above quotation shows, the photograph served as a method to create and share a common as well as a divergent understanding of the relationship between the symbolic and the physical space, and of the notion of engagement in relation to innovation in work.

Extract 4. Informant 4.2, an engineer in management position in a manufactory company, made a photograph of a corridor he had never noticed before. During the interview with the photograph, the informant unfolded strong feelings of sadness, feelings of having 'no way out' and innovation. The informant 4.2 described the photo like this:

I have not really thought about that much, but then when I went around and looked [...] it hit me. Here, I have never been, I have never been, I've never went in here. [...] It is only as a blank gap, which is dark. [...] I get a feeling of sadness because of the dark and dirty. Negative thoughts hinder the ability to see innovation. No windows. [...] I feel lost and then the endlessness. For me, this is very distracting if I should try to think of something. There is no start or stop, no beginning or end, there are no references. And for me it's hard when I do not have any references. [...] I think it creates more anxiety [...]. I have not thought so much about it, but now when I took this picture, I began to reflect on it. [...] I just want to come out here somewhere, so it's no innovative environment, I believe [...].

The informant describes a negative inner state of mind related to this part of the workplace, while talking about this picture, and emphasizes that it is *not* related to his idea of supporting innovation.

6. Discussion - PEI and design research

Mannay [2010] writes about the possibility of using PEI to make the familiar strange since PEI can get behind meanings that are taken-for-granted, because it allows the researcher to use techniques of defamiliarisation. Our research results indicate similarly that one function of PEI lies in the relation to meaning, the familiar and a form of distance to the familiar. Our perspective from phenomenology linked to PEI as a method, will here be used to analyse how. Firstly, we will discuss how PEI creates a space for reflection and then the meanings that were communicated in discussing the photograph and the keywords tagging the photos. Secondly, we will discuss meanings that are communicated through the possibility in the method of focusing on spaces that in themselves are given as 'un-readiness-to-hand' for the process of innovation, i.e. when they are hindering innovation, they are becoming present-at-hand with help of the PEI.

To use PEI to research everyday workspaces perceived supporting or hindering innovation, means to use PEI to study a photograph of a designed artefact incorporated in the everydayness. Everydayness is a way to be and incorporates the habitual, but also the extreme; it is in the modus of indifference and everydayness determines Dasein even when it has not chosen the they as its "hero". [Heidegger (1927) 2010, 371]. Heidegger's writing opens for a possibility for mastering the everyday in the moment. Here we will discuss if using PEI can create such a moment and how.

When using the photographs for the interview about environment, during a PEI-study, three-dimensional space, the lived space and a representation of that space (the photograph) are at play. The person who makes the photograph has a relationship to the lived experience of the space, but also the photograph of that space. Susan Sontag examines the relationship between the photograph and the world and put forward that they seem to have the status of found objects, they seem to be unpremeditated slices of the world. [Sonntag 1977, p. 69]. The word seem is of importance here. The photograph of the workspace is an artefact that stands for itself, it is its own world – because of its being as another object than anything it depicts – and attention by the beholder can of course be given to any objects depicted in the picture, associations can be made to any memories, any history, artefacts, photograph, painting etc. PEI locates its communication about something that one wishes to study (in this case spaces for innovation) in the gap between object (workspace) and object (photograph of workspace); between the pragmatic everyday life and all the possible meanings in the discourse.

In the PEIs, the discussion around the photographs and the spaces started in the employee's previous experience of 'ready-to-hand relationship' to the spaces, i.e. with the experiences of relatively non-reflected experience of things. When using PEI, a situation of 'un-readiness-to-hand' occurred, in which the photograph and the questions created a resistance to the spaces that helped the photographer and his or her colleagues to become aware of the being of a piece of equipment or the materiality of the workspace. Through the photographs, the spaces are instead given as 'present-at-hand'. To use the photograph as a defamiliarisation technique for the workspaces, i.e. defamiliarisation in the sense that it becomes taken out of the non-reflected context and becoming 'present-at-hand' and an object of knowledge, we believe, is in itself an opening up for creation of a space for reflection.

The reflection brings with it the possibility to pay attention to and reflect on the 'they' and bring in an opening in the doing of day-to-day routines. The notion of everydayness and reasoning about the 'they' is relevant since the working space where the designers, managers, and machine operators work

then are a space where the ‘they’ are dominant. In the present study, the PEI method was an attempt to make the people interviewed ‘move out’ from the way their spaces are given to them in their daily work and they are asked to reflect over the relationship to spaces that are in the everydayness. One of the motifs described in extract 2, contributed to a reflection over habits, where the ‘they’ is represented in the fixed places, the way to talk, who is supposed to talk, how to drink the coffee and what is expected to be said. The method made it possible to reflect over how a change in the interior may change the way to be with each other. Bringing an obstacle to the attention of the workgroup (that the usual coffee room was not possible to use, extract 2), directed the focus to the thing present-at-hand, the meeting room, and resistance was created. The resistance made the other group go through a transition from a ready-to-hand relationship with the meeting place to a present-at-hand relationship with it. That opened up the possibility of creating new relationship with things—the chairs, the table, the placement—and a new relationship with the idea that it is possible to rethink routines and what they do. The informants, one may say, could see possibilities for innovation when they see space less superficially.

When ‘un-readiness-at-hand’ appears for the informant, PEI can be said to use that obstinate, ‘un-readiness-to-hand’ as an opportunity, a possibility for discussing the present and the technical world and for being open to relationships between feelings, people, and body and thereby also enabling the possibility to create both a mental and a material space for innovation. In that, PEI, with photographs of the workspaces moves the human beings closer to what spaces for innovation can be because it puts them at a distance to the daily lived experience. Similar to what Heidegger writes, as we saw earlier, regarding the bridge. When one thinks about a bridge we may be even nearer the bridge and what it makes room for, than someone who use the bridge daily as ‘indifferent river crossing’ [Heidegger (1952) 2008, pp. 358-359]. But at the same time as the photograph creates a space for reflection and distance, they are also artefacts in their own right and as such elicit multimodal stories of workspaces. Based on the extracts in this study, we can say that PEI opened the way for multimodal embodied stories connecting the bodily experience of the physical space with words, as exemplified in extract 1 where the informant describes a multimodal experience of the workshop. The example in extract 1 also shows how the dynamics around a workspace perceived to support innovation enters in to the sphere of caretaking, nurturing and constructing, into the sphere of dwelling, to use the notion of Heidegger. Other photographs led to reflection about fixed places, habits, movement, power, for example in extract 2, the role of engagement in extract 3, and negative thoughts and entrapment related to a corridor in extract 4. With help of the photograph of an empty chair in extract 3, important notions in that tool-complex about innovation and mentally absent, uninterested people was activated. The photograph of the corridor elicited the relation between innovation and entrapment and negative thought that hinders innovation from the informant. The motif of a table moved for a meeting brought forward thoughts of an authentic discussion, and that can also be interpreted as a restored a form of dwelling. New entities were created and recreated in the use of words in relation to the photographs. Stories come forward and relationships come out that are important for understanding how people experience and understand both processes and spaces for innovation. The photographs open for multimodal and multi-layered stories. The stories unfolded in PEI are describing human beings ‘ready-to-hand’ experience in relation to things, and the answers shows connection to the everyday work. There was an interesting difference between the answers to a direct question from the researcher: ‘What is innovation for you?’ and the stories and experiences around the photograph, which is in line with the results of Collier [1957], and Samuels [2004]. The answers given to a direct question were much less dynamic than the discussions of each photograph, which was richer regarding different aspects of innovation and multimodal experiences. In their work, the informants from manufacturing industry are not artists seeking creativity; they have to be efficient and complete tasks and this influences how they give meaning to innovation and space for innovation. Merleau-Ponty reserves the ‘uncertainty’ of colours for art objects. We believe, however, that photographs produced by non-artists and instrumentally inserted in an interview can at the same time be experienced in an artistic sense, in accordance to what Merleau-Ponty speaks about, in research to enable a previously not possible communication. Although we would not dare to say that we conducted research through art, there is an

element of relevance of Merleau-Ponty's writing on colours in art for the function of the photograph in PEI.

The second function of PEI, as the method was applied in this study for design purposes, helped to direct attention to the spaces where something hindered an action or a project. The starting point of the PEI directed the participants to think about and photograph physical environments or parts of environments that they perceived hinder innovation. The motifs activated networks of relationships that hinder innovation, in the view of the informants. Even if, as the examples show, the space that hinders innovation brings a situation of helplessness, as presented in extract 4, the process does not have to stop there. To use PEI as a start of a co-design process can open up the way for transformation and change in workspaces with help of a designer.

The result of using PEI at workspaces is that PEI unfolds a profound possibility of communicating about innovation and workspaces. Additionally, PEI, as an intervention, is in itself a possibility to create spaces for the workers innovation. Although admitting that PEI conducted at a workplace is a management, a top-down, decision, the decision is to use a method that allows for the workers to define their own spaces for innovation.

In regard to our linking of PEI to phenomenology, we can conclude that PEI highlights the lived experience; PEI enables an interviewee to use multifaceted language and find variety of expressions and associations, both verbal and pictorial, to do justice to the phenomenon under investigation. It has to be noted that a few photographs may not be sufficient to capture the critical interactions with workspace during the participants (individual or collaborative) activity. But the motifs that were coming forward using PEI, made several tool-complex of spaces for innovation 'present-at-hand' by the obtrusive 'unreadiness-to-hand'. From a phenomenological perspective, PEI brings out tool complexes in relation to human beings and innovation at the workplaces. The tool that figures as a motif in a photograph has relevance for the innovation process, in the view of the interviewee, and the motif is bringing out the tool-complex related to innovation.

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