

Know Thy Users by Interpretative Phenomenological Analysis

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One approach to getting to know a user and understanding the user experience (UX) is phenomenology. Currently, there is a lack of clearly defined methods for phenomenological analysis of user experience in design projects. Interpretative Phenomenological Analysis (IPA) is an approach developed in psychology, and in this article, it is adapted to the case of a pro bono design project at a UX design agency supporting a disadvantaged group of people, newly arrived immigrants to Sweden. The design project involved research on how the immigrants experienced a service that introduced them to the job market. The adapted method, UX IPA, contributed to the pro bono project with a focus on both experience and meaning, which is important in design projects that relate to major events in users' lives. The method was considered less appropriate in UX projects for specific products with highly instrumental use. The method can, in many cases, be too costly. However, costs can possibly be reduced by top-down approaches. In commercial UX projects, the method may be appropriate for the fuzzy front-end of design and innovation, but clients may be unimpressed by the small sample size. This can potentially be alleviated by mixed-methods approaches.

Interaction Science Key Words: User experience, interaction design, user-centred design, interpretative phenomenological analysis, user research methods

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1 INTRODUCTION

Since the 1980s, in human–computer interaction (HCI), there has been a mantra of how important it is to “know thy user, for he is not thyself” [1, p. 8]. Imagine doing a design project for newly-arrived immigrants to a country. To do it well you would have to develop a thorough understanding of how they experience their new life situation, that is, the context of use for the designed services. How would you go about building such an understanding?

We will, in this article¹, describe how the method, Interpretative Phenomenological Analysis (IPA), can be used to get that kind of deep understanding of user experience (UX). UX can be said to emerge on different levels: the how-level, the what-level, and the why-level [2]. The three levels can be conceptualised using activity theory [3]: (a) The how-level concerns multimodal sensorial aspects and automated operations driven by conditions for interaction; (b) the what-level is about personal meaning and emotional response to actions driven by conscious goals; (c) the why-level is the meaning and purpose in relation to social activities contextualised in culture and history. UX is subjective and shaped by the individual users and it depends on their thoughts, feelings, and habits, as well as, the objective properties of the product or service [4]. The users' dynamic dialog with the context of use is highly situated and extends over periods of time. It is holistic and not only focusing on what people aim to do (e.g. make a phone call), and how they do it (e.g. using the touch screen to navigate the contacts), but also what they wish to be (e.g. close to others). It is in the context of being close to others that making a phone call becomes meaningful and valuable.

¹ This article is a significantly extended version of an ECCE 2017 conference paper.

UX is also multifaceted. For example, users can have focal awareness on practical aspects of getting things done, communicational aspects in relation to other people, organizational aspects in relation to division of labour and community, aesthetic aspects in relation to how it feels, ethical aspects in relation to norms and ideals, or technical aspects about how well the product works [5]. The complexity of UX, including how people shape experiences for each other, makes it difficult to define, understand, and design for [6, 7]. It is important to develop user research methods that produce a holistic understanding of the experiences people have with products or services. It is also important that these methods work for professional designers in their actual practices and not only in academic settings [8].

Existing UX research methods often build on interviews. One example of that is personas (i.e. user archetypes), based on identified goals and behavioural variables [9], or other qualitative and quantitative analysis methods [10, 11]. Interviews are sometimes combined with observations, as in contextual inquiries that often are analysed using affinity diagrams, which is a combination of thematic qualitative analysis and consensus-oriented idea generation [12]. User experience is, as mentioned, dynamic, and extends through interaction trajectories over time. It is therefore useful to map out user experience journeys [13] or customer journeys [14]. A journey consists of a series of touchpoints that the user traverses before, during, and after using a service. A touchpoint can be in any channel, for instance, a face-to-face meeting, a web site, printed materials, or a visit to a place. The journey through the series of touchpoints gives rise to the overall user experience.

Phenomenology is one approach that can be used to conceptualize user experience. It was introduced to HCI in the late 80s by Winograd and Flores [15], Suchman [16], and Ehn [17]. Providing a full description of the entire philosophical basis of phenomenology is far beyond the scope of this article. Especially since phenomenology is a pluralist endeavour where different philosophers have added their account and perspective to the field over the course of a century. There is not one phenomenological theory, but rather many. The brief summary given here is based on the introduction to phenomenology given by Smith, Flowers, and Larkin [18] and by van Manen [19]. We will cover a few of the most influential phenomenologists, starting with the founding father Edmund Husserl [20]. The founding principle of phenomenology is that everyday experience should be studied in how it occurs and on its own terms. Husserl sought to identify the essential qualities of an experience that do not vary across circumstances, with the argument that identified qualities then would transcend the particular situation for the individual. Husserl's approach involved taking a phenomenological stance to inspect one's own immediate perception of things, before conceptualising and abstracting them. This provides a description of the 'lifeworld' as it is lived. Husserl argued that our consciousness is intentional, that is, it is directed towards something. He developed a method for phenomenological inquiry that starts with bracketing (putting aside) our taken-for-granted conception of the world to be able to focus on how we perceive the world. The next step in Husserl's approach is a series of reductions aimed at guiding the analyst away from preconceptions and toward the essence of the experienced phenomenon. Phenomenology asks what it is that make something what it is, that is, what the essential qualities of "houseness" that makes a house be a house, for example. These essential qualities are universal and can be described by an inspection of the structure that governs the instances of the phenomenon. The steps in Husserl's reduction include, for example, eidetic reduction to find invariant properties of the phenomenon, and transcendental reduction to find the properties of consciousness itself. Husserl was also critical of scientific knowledge claims and saw them as secondary to first-order personal experiences of the 'lifeworld' [18]. A strict follower of Husserl's phenomenology would maintain that the analysis focuses only on directly grasping or intuiting the essential structure of a phenomenon as it appears to consciousness. However, other phenomenologists such as Heidegger, Sartre, and Merleau-Ponty argued for more hermeneutical accounts.

Heidegger [21] based his work on Husserl but also departed from it. He focused on the being-in-the-world of Dasein (the situated human being). He was critical of Husserl's idea of transcendence, which he found to produce a too abstract or theoretical phenomenology [18]. Being-in-the-world implies that Dasein is an embodied being who is engaged in the world before it is reflective. This means that consciousness is derived from being thrown into continuously active engagement in the world as it appears to the acting agent. Consciousness occurs as the situated human being redirects awareness to the artefacts that mediate the dealings with the world, making the artefacts, or people themselves, present-at-hand, i.e., an object of study. Sometimes this happens because of a breakdown in our dealings, at which the otherwise transparent equipment and the taken-for-granted everyday world is disclosed. The space in which Dasein acts is not an objective physical space, but rather a space for action, that is, a functional region emanating from the acting agent. The functional region offers a frame of possible perspectives on the world and an initial orientation that discloses an appearance of things. Dasein then grabs a finite perspective, which gives rise to directionality, depending on the objects of concern, the equipment, and the fore-structure (i.e. pre-conceptions, prior experiences, pre-suppositions and assumptions). This means that some things appear in focus and others remain hidden in the background. The structure of the functional region dictates Dasein's movement, but Dasein can also make things available in acts of disavowance. Dasein is also fundamentally being-with others. Being alone is according to Heidegger a deficient mode of being-with. This points towards the centrality of intersubjectivity, that is, the shared and overlapping relationship of our engagement with the world. Heidegger also spent a significant degree of attention to the matter of time. He argued that death gives a temporal dimension to being-in-the-world. All in all, this means that our being-in-the-world is not only practical and spatial, but also temporal, affective, reflective, and social.

Sartre was an important part in forming what is called existential phenomenology. Like Heidegger he described how we are caught by our projects in the world. He argued that our self-consciousness is action-oriented in making meaning in the world we inhabit. Sartre stressed that our being is evolving, and we are always in process of becoming ourselves. In his writings he poses a concern for what we will be, rather than what we are. Sartre uses the concept of 'nothingness' to denote things that are absent and that they are as important as the things that are present [22]. For example, Sartre used the example of going to a café expecting to meet a friend. When you enter, and the friend is absent, your relation to the café changes. The thing missing "haunts" the café, and the nothingness of the friend fixates the meaning of the café. He gives also a nuanced description of what it is like to look at someone, and also what it is like to realize that someone is looking at you, at which your entire experience becomes centred around the person looking at you. You may be doing something, without further thought, but then suddenly hear footsteps and realize that someone is looking at you. This abruptly changes your mode of awareness, and you become aware of yourself because somebody sees you. He also gave a phenomenological description of blushing as the awareness of one's body, not as it is for oneself, but as it is for the other. Here we see a phenomenology of not the immediately experienced 'lifeworld', but rather a phenomenology of the 'lifeworld' mediated by, for example, blushing, talking, and acting. Sartre's phenomenology is a phenomenology of becoming rather than being, and it is based on the existentialist idea we have the freedom to choose and therefore are responsible for our actions. This means that existential phenomenology also involves an interpretative layer. It is hermeneutic in an interpretation of experience mediated via your actions in relation to other people regardless if they are present or absent.

Where Heidegger focused on the worldly being and Sartre on the becoming being, Merleau-Ponty focused on the embodied being. He showed that our situated perspective is primary, and we perceive ourselves as different from everything else in the world. He echoed Husserl's view of

science, i.e., that it is second order knowledge derived from our first-order experiential basis. He focused on the body-subjects, that is, our body not as an object in the world, but as our means for communication with the world [23]. For example, my hand, in my reaching out to touch the keyboard, is a meeting point between the self and the world. It pulls my self to the world in the act of reaching. To Merleau-Ponty, our perception develops from our own embodied perspective. This also includes our perception of others, and we can never really share their experience, since their experience belongs to their embodied position in and perspective on the world. The body-in-the-world with its affordances, practical activities, and relations form a central part of experience, which we cannot entirely capture or describe. Yet, we cannot ignore it either.

In HCI and interaction design, phenomenology has largely built on parts of Heidegger's work and focused on how technology can be designed as ready-to-hand tools that become transparent to the users' material dealings with his or her objects of concern [15, 24–27]. A phenomenological understanding of user experience turns the awareness from products to a first-person perspective on the ways in which people as embodied agents engage with objects of care in lived space [25, 27]. Using Heidegger's terminology, a designer can be said to set up a functional region for users, and that region suggests a perspective that users adapt depending on objects of concern and fore-structure [3]. Merleau-Ponty's work has also been applied to HCI, for example, in the study of cooperation between embodied agents in distributed activities [28, 29].

However, concrete methods for using a phenomenological approach in interaction design are lacking. Interpretative phenomenological analysis (IPA), which is an established phenomenological method, can potentially be used for data analysis in user research. This study contributes to understanding the applicability of IPA, not only in academic settings, but specifically in the case of a pro bono design project at a UX design agency supporting a disadvantaged group of people: newly arrived immigrants to Sweden. The project aimed to understand the experience of a start-up service that introduced immigrants to the job market. The following primary questions are addressed in this article:

- How can IPA be adapted to the pro bono design project?
- What contributes IPA with to the project?
- What shortcomings has IPA in the project?

A secondary question is what the potential contributions and shortcomings of IPA are in conventional commercial UX design projects.

1.1 Interpretative Phenomenological Analysis

Interpretative Phenomenological Analysis is an in-depth qualitative research method developed in psychology. It is used to study in detail how individuals experience a phenomenon and ascribe meanings to it [18]. The goal is to get as close to the participant's perspective as possible to get to know that person's emotional and social world [18, 30–32]. The analysis aims to understand someone's lived experience and how he or she makes sense of the experience.

IPA has been used in a substantial number of studies where it has proved valuable for understanding the way people make sense of their personally lived world and experiences [30]. Most studies have been in social psychology and health psychology, however, IPA seems to be suitable for an ample amount of research topics outside social and health psychology [30]. There have been several successful studies using IPA in other fields [33–35].

IPA is a phenomenological approach in its focus on personal experiences and detailed analysis of idiosyncratic accounts of events [18]. The researchers' active role is necessary to understand the other's experience [36]. This dual interpretation, first by the participant trying to make sense of what their personal experience means and what consequences it has for them, and second by the researcher trying to make sense of the participants' sense-making, marks IPA as part of, not only

the phenomenological tradition, but also the hermeneutic tradition of qualitative social science [18].

Like practically all phenomenological approaches, IPA takes a starting point in Husserl, who established the importance of systematic reflection on everyday lived experiences of the things themselves. It also builds on Heidegger, Merleau-Ponty, and Sartre, whom in turn built on Husserl's foundations by seeing the person as being in a "world of objects and relationships, language and culture, projects and concerns" [18, p. 21]. Whereas Husserl had a descriptive and transcendental interest, Heidegger, Merleau-Ponty, and Sartre focused on the perspectival directedness of our involvement with the lived world, which is both personal and relational to the world and to others. IPA follows this tradition of hermeneutic phenomenology that sees experience as lived processes of perspectives and meanings that are unique to an embodied individual situated in the world [18]. IPA is concerned with how a phenomenon appears, where the analyst is also part in making sense of the appearance of the phenomenon. IPA thus rejects the idea of being able to purely bracket your pre-conceived notions as Husserl advocated. Hermeneutics is central to IPA in its search for insight to the relationship between the fore-understanding and the attended phenomenon [18]. Yet another theoretical underpinning of IPA is the concern for ideography and the particular, which means that the method advances analysis case by case, individual by individual.

There are also other phenomenological research methods that could be used to study UX. For example, Georgi's approach [37] follows Husserl's original methodology and is explicitly descriptive, whereas IPA is interpretative. The aim of Georgi's approach is to define the essence of a phenomenon, which means that the analysis seeks to find what is in common and invariant between individual accounts, to create an 'eidic' (i.e. general) picture of the phenomenon. IPA has instead an ideographic aim of describing the convergence and divergence across individuals and capturing the nuances of each individual [18]. Van Manen's approach [19] is like IPA combining phenomenology and hermeneutics, but it focuses more on the interpretative and reflective process that goes into writing and re-writing the analysis [18]. It tends to be more artistic and poetic in the reporting in an effort to communicate emotive aspects of experience.

An alternative to IPA and other phenomenological approaches is to use grounded theory. It is a better-known approach to qualitative analysis in HCI [38]. Both grounded theory and IPA are inductive approaches to qualitative research. Originally conceived as a systematic guide with sequential steps, grounded theory aims to develop a theoretical account of a phenomenon. It provides a conceptual explanation based on a larger sample, and individuals' accounts are used to illustrate the theoretical concepts. In contrast, IPA is more likely to give a detailed analysis on the micro level of the lived experience of a small number of people, and how their experiences converge and diverge. The two methods can however, complement each other and an initial IPA study can turn into a subsequent grounded theory study [18].

1.2 Using IPA to Study User Experience

IPA has been proposed as a method for understanding user experience [39, 40]. The first step in such a method is to create a descriptive account of users' experience by identifying *objects of concern* for the users, and *experience claims* about those objects of concern. The analysis is inductive, and themes emerge from the users' accounts of how they experience the phenomenon, given how they are situated in lived space and time, and how they relate to objects of concern. The subsequent step is to create an interpretative account of not only what the users' experience claims mean for the users given the fore-structure they bring, but also, what they mean for the researcher, given researcher's own fore-structure, including theoretical concepts.

It has previously been suggested, but not shown in design practice, that IPA can be an appropriate method to analyse experience with a product or service and what that experience

means to the user. In user experience research, the analysis would answer the following experiential questions (1–2) and interpretative questions (3–4):

1. What are the objects of concern (e.g. relations, processes, places, events, material, documents, rules, values, principles) for the users in the situation of use?
2. How are the objects of concern experienced in that situation?
3. What do the objects of concern mean for the users given the pre-understanding they bring to the situation of use, i.e., why they are important and what the consequences are of the users' experiences of them?
4. What theoretical concepts can be used to understand what the users' accounts mean?

1.3 The Case

We worked together with a Swedish user experience and service design agency to investigate the applicability of IPA method in a pro bono design. The project was done for one of their clients, a social innovation start-up. The start-up connects newly-arrived immigrants with Swedish companies. Their digital platform enables companies to post simple tasks and services and match them with newcomers looking for work, thus enabling newly-arrived immigrants in Sweden to get their first job in their new country. The user experience and service design agency have been a part of getting the start-up operating and is responsible for the larger part of their design and user experience. One of the authors of this article took the role of user experience researcher, and a user experience designer from the agency took a supervisory role together with the other author of this article.

The goal of the project was to gain an understanding of what kind of users the start-up had attracted in the few months they had been operating. The main questions for the project were how the newly-arrived immigrants experienced coming to Sweden and trying to gain access to the Swedish labour market; what challenges they had faced; what their goals were; how the process had affected their perception of themselves; and how they had experienced the service provided by the start-up. The focus for this article is on the analysis method and we will not delve into details about the participant's stories and experiences. Informed consent was obtained, and anonymity was guaranteed.

2 THE IPA METHOD ADAPTED FOR USER EXPERIENCE

This section describes the adapted version of IPA that was deployed in the pro bono user experience research project. The adaptations were made in response to the context of the design agency, and to investigate how IPA could be used together with their current methods. The adapted method consists of five steps. Table 1 shows how it compares with traditional IPA as described by Smith, Flower, and Larkin [18].

The table indicates that the overall time expenditure for four cases (i.e. participants) was cut in half in the adapted method. Lakew and Lindblad-Gidlund [40] noted the length of time and commitment it takes to do the detailed analysis as a limitation of IPA. In the adapted UX IPA, considerably less time was spent on analysis, to some extent due to a combination of bottom-up and top-down analysis. The final write-up was more about visualizing than writing up key insights to drive further design work.

Table 1. The adapted user experience IPA and how it compares to traditional IPA in a study with four participants

Activity	Traditional IPA	Adapted UX IPA
Collection of data	Semi-structured interviews and transcription, 40 hours	Semi-structured interviews and transcription, 40 hours
Analysis of the first case	Bottom-up, 40–80 hours	Bottom-up and top-down, 16 hours
Analysis of remaining cases	3 x 40–80 hours	3 x 16 hours
Finding connections between cases	Bottom-up, 40 hours	Bottom-up and top-down, 24 hours
Write-up	Extensive textual narrative, 40-60 hours	Visualization of key insights made to support the upcoming design activities, 18 hours
Total time expenditure	280–480 hours	146 hours

2.1 Step 1 – Collection of Data

The study was conducted with four participants. A small sample size, between three to five participants, is recommended in IPA since it is a time-consuming and rigorous method [18]. The aim is to get an in-depth understanding of every participant. The group of participants is preferably homogeneous since the focus is on a particular group's experience.

The four participants were all users of the start-up's service and this was also the only criteria for the selection. The service had a limited number of users and further delimitations would have reduced the number of potential participants.

They were interviewed by one of the authors in a semi-structured interview that allowed them to talk about the issues that were most important to them. An interview guide was used to set the different subject areas, but there was no requirement to ask all the questions or use a certain order. Interviews were 40–80 minutes.

Since the participants were newly-arrived immigrants their language skills varied greatly. As a result, a translator was necessary for some of the interviews. One interview was held in Swedish with assistance of a translator, one in Arabic with a translator, and two in English without a translator.

The interviews were recorded to allow the interviewer to be mentally present in the situation. Recording is also necessary to ensure the richness of the data necessary for an IPA [18]. The interviews were transcribed in whole.

2.2 Step 2 – Analysis of the First Case

The analysis was carried out one interview at a time. In this section, the analysis of the first interview is presented. These steps are then repeated for the remaining interviews.

Reading, Re-reading and Commenting. The analyst carefully read the transcript to become familiar with the material. Then it was read again and commented on things in the transcript that seemed important. The aim is to understand the meaning, complexity, and importance of what is said [18]. This part of the analysis was bottom-up and aimed to allow for the uniqueness of the participant's perspective to emerge. The researcher can annotate the transcript with the following types of comments [18]:

- Descriptive comments: experiences, things, and emotional reactions.
- Linguistic comments: how something is worded, repetitions, and hesitations.
- Conceptual comments: interpretations of the participants understanding and perception of their experience.

Next, the transcript was read again, but this time with a top-down approach. That meant that there was a predefined idea of what to look for. In this case, it was needs, goals, and obstacles, since these categories were the ones used at the design agency in their user experience research and development of personas. The exact origin of the categories is unclear, but they are similar to what is advocated in goal-oriented design [9]. In terms of Hassenzahl's be-do-model [4]: the needs focus on the why-level, the goals focus on the what-level, and the obstacles focus on the how-level. Thoughts, feelings, habits, or the objective properties of situation are not highlighted given this framework. The three categories focus the analysis on objects of concern (expressed here as needs), objects that are strived for (expressed as goals), and on breakdowns or focus shifts in the interaction space in caring or the striving for desired objects (obstacles). The choice of terms (needs, goals, obstacles) carries a primarily instrumental perspective to the analysis [5].

This step shared a lot with the recommendations given for traditional IPA. The difference was that both a bottom-up and top-down approach were employed, instead of only using the bottom-up approach. However, there have been IPA studies that have successfully used both bottom-up and top-down approaches [41].

The choice of adding a top-down approach was made for two reasons. Firstly, it assures that the researcher identifies the parts of the experience that are needed for the design activities that the research is meant to support. Secondly, it reduces the time it takes to comment since the researcher has a preconceived idea of what to look for. Combining a bottom-up with a top-down strategy seems appropriate in many cases. It would allow a designer to be both prescriptive and sensitive to the uniqueness of the situation at hand [542]

Develop Themes. When all the relevant comments had been made, then they were expressed as concise phrases or themes. The aim of this is to capture the essence of the comment and at the same time move the interpretation to a slightly more abstract level [18]. It is important to make sure that the theme still has a clear connection to the section of the transcript for which it is based on, and, at the same time, allow theoretical connections to be made within and across cases. Fig. 1 shows a transcript that has been first annotated (right side), and then those annotations have been made into themes (left side).

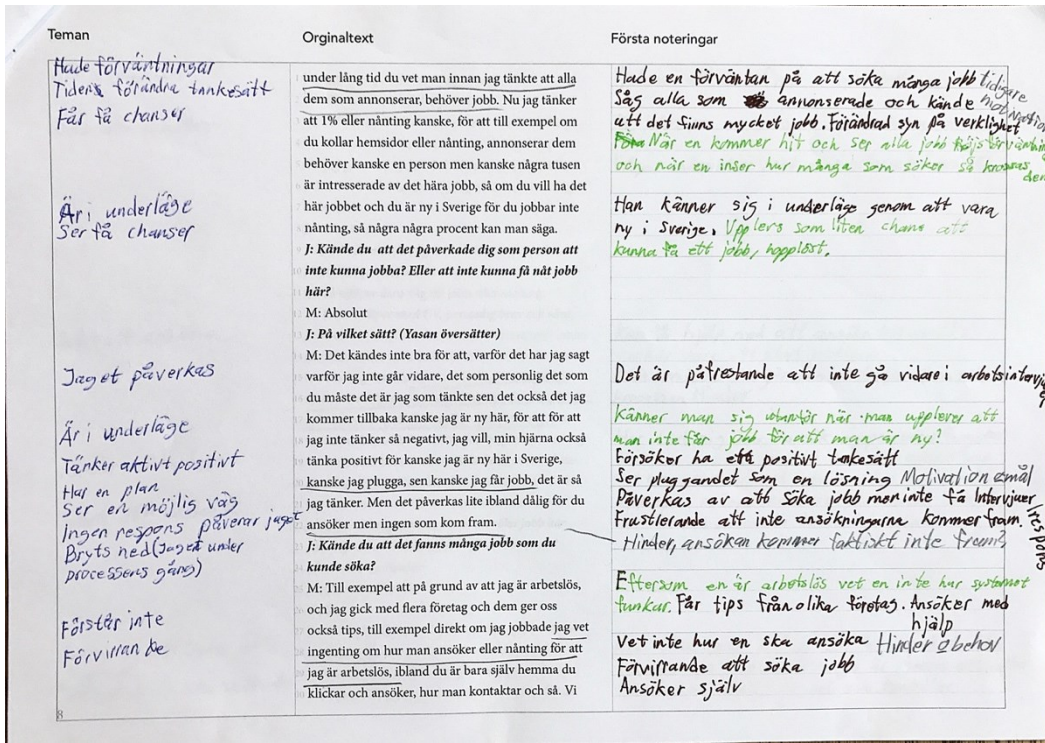


Fig. 1. A transcript (in Swedish) which has been first annotated (right side) on and then those comments have been made into themes (left side).

Below, in Table 2, follows a translated excerpt from Fig. 1 that illustrate the level of interpretation that goes into the first annotations and development of themes.

Table 2. Translated excerpt from Fig. 1

Themes	Original Text	First Annotations
Affected selfhood	It didn't feel good because, why have I said, why don't I go further, it like personal that you have to it is I who thought then it also that I	It is trying to not go further in interviews for a job
Being underdog	Come back maybe I'm new here, because I not think so negative, I want to, my brain also	Do you feel left out when you experience that you do not get a job because you are new?
Thinks actively positive	Think positive since maybe I'm new here in Sweden.	Tries to have a positive way of thinking.

Find Relations between Themes. After the themes in the first interview had been identified they were inserted into a list. This list was then printed and cut into small notes with one theme on each note (see Fig. 2). This made it possible to move the themes around and explore relations between them. Some themes worked as magnets, drawing other themes towards them to form a super-ordinate theme. Some emerged as more important and other themes were similar and were, therefore, merged, while others were removed if they were considered irrelevant.

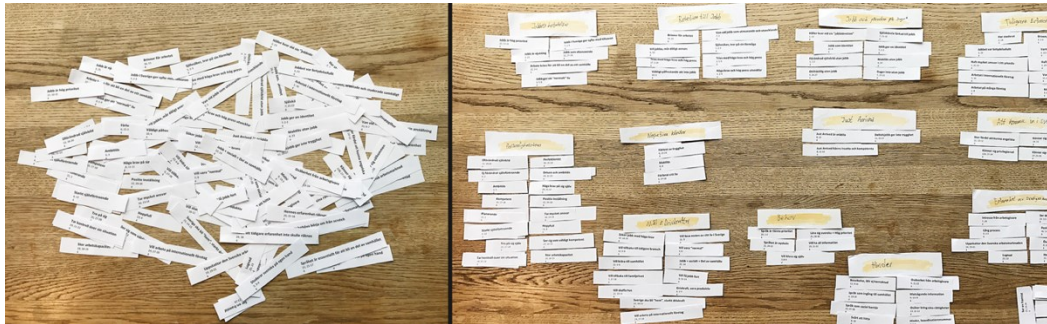


Fig. 2. Relations between themes were found by moving notes around.

This step differed from traditional IPA in the sense that both a bottom-up and a top-down approach were used. Needs, goals, and obstacles were used for top-down analysis. All other groups of themes were created with a bottom-up approach where their relationships emerged organically, by sorting themes into groups of affinities. The structure was then structured in a table to facilitate the following steps of the analysis. Page and row numbers of where in the transcript the theme originated were noted.

2.3 Step 3 – Analysis of Remaining Cases

When the analysis of the first interview was completed, the analysis of the next one followed. It is important to be disciplined and discern recurring patterns, but at the same time allow issues unique to the new transcript to emerge [18]. The rest of the transcripts underwent the same analysis as the first one.

2.4 Step 4 – Find Connections between Cases

When all interviews were analysed and put into tables, the analysis continued with a search for similarities between cases. Recurring themes were noted, as well as connections between themes in the different cases. Some themes from one case were applicable in other cases, and possibilities to say something in general about all the cases were sought.

Themes were also prioritized, as an understanding of relations between them developed. Smith, Flower, and Larkin [18] have described this step as ‘challenging’ since it requires the researcher to reduce the themes and decide what is most relevant. The themes were chosen based on the researchers understanding of what is most important in the data set. The most important themes were compiled in a table and the connections to the different cases were made clear (see Fig. 3). Quotes from the cases were also added. This table then served as the foundation for the visualizations in the final step.

Bottom-up genererade teman	
Temat	Sida & rad
Vad innebär ett jobb?	
Att du är del av samhället	
Tesmi:	
Haroun: "inte lika stiel, lika utanför samhället, man börjar jobba"	8.1
Abdul: "a part of the Swedish society because I'm part of the system, I'm working"	8.5-6
Raja: "if you are not working which, if you can consider yourself from the society"	22.3-4
Att du är stolt	
Tesmi: "så ordnade jag alltid allt, jag har nyckel"	2.8
Haroun: "jag supernöjd [] att det är extrajobb det är väldigt få som har extrajobb"	8.4-5
Abdul: "they really look at you in respect way"	5.15-17
Raja: "and I feel I am capable"	7.21-22
Att din sociala status förändras	
Tesmi:	
Haroun: "det är väldigt få som har extrajobb när man samtidigt studerar på SFI"	8.14-17
Abdul: "they were more happy and more good with us"	5.16-17
Raja:	
Att du känner trygghet & stabilitet	
Tesmi: "Jag tänkte att om en jobba du vet och din jobb"	3.28
Haroun: "det bidrar mer stabilitet kanske om man vill planera familj"	9.29-30
Abdul: "you'll not feel safe if you are working"	2.29
Raja: "I feel secure I have a future I feel like I am protected, I'm protecting"	7.18-19
Att du kan ta hand om din familj	
Tesmi:	
Haroun: "om man vill planera familj eller nånting"	
Abdul: "help your family with some money[] feel like, "okay, I'm doing something"	5.21-22
Raja: "a proper job supporting yourself and your family"	7.10

Top-down genererade teman	
Temat	Sida & rad
Mål & Drivkrafter	
Känna gemenskap på nationell nivå	
Tesmi: "Redan nu jag är i systemet kan man säga"	16.19
Haroun: "och att man ändå är en del av det hela"	9.8
Abdul: "You need to be part of this society and you can do that by working"	3.1-2
Raja: "I'm thinking this is gonna be my home, this is gonna be my country"	22.6-8
Försörja sig själv	
Tesmi: "det behövs mat, kläder, resa, allt men om du inte jobbar hur man hur du"	14.10-12
Haroun:	
Abdul: "after I get the job, you'll get salary, and you can do what ever you want."	12.26-27
Raja: "having a job [] supporting yourself and your family[] this is the basic"	7.8-9
Hitta tillbaka till sin profession	
Tesmi: "det som det jag gjorde där i mitt hemland"	4.10-11
Haroun: "Det som jag har jobbat med i Syrien, inom byggbranschen."	1.18
Abdul: "my goal is to Finish my study in Biotech Engineering, I will work with that."	9.16-17
Raja: "anything related to economics, accounting, administration, coordinating"	12.6-8
Betala skatt som bevis på att en är del av samhället	
Tesmi: "känner man sig inte lika stiel, lika utanför samhället, man börjar jobba"	7.30-1
Haroun: "kan vara svart[]men för att få hamma på bra svenska bolag krävs språk"	2.1-3
Abdul: "you can do that by working, paying tax, work."	3.1-2
Raja: "not working [] how come you can consider yourself part of the society"	22.7-8

Fig. 3. An extract from the table showing the connections across all cases (the entire analysis was made in Swedish). On the left-hand side are bottom-up generated themes and on the right-hand side are top-generated themes. Page number and row of transcripts are noted for all themes.

In summary, the bottom-up generated themes from Fig. 3, described that having a job means:

- You are part of society
- You are proud
- Your social status changes
- You feel security and stability
- You can take care of your family

The top-down generated themes from Fig. 3, focused on goals and driving forces:

- To feel community at a national level
- To make a living
- To regain your profession
- To pay taxes as evidence of being part of society

2.5 Step 5 – Visualize Insights

The fifth step was where the UX-adapted IPA deviated the most from the traditional IPA. The last step of a traditional IPA-study consists of an extensive textual narrative, but to be useful in subsequent design work this step was more about the visualization of insights.

At this phase, the analysis becomes expansive again and themes are explained, nuanced, and illustrated with verbatim extracts from the transcripts to support the case that the researcher makes [18]. In the traditional write-up, there are also links to relevant literature, models, and theories which the themes are related to. In design-oriented research, narrative accounts can be complemented or replaced by visualizations that aim towards getting everyone on the team to share the same vision and work towards the same goal [43, 44].

The visualizations chosen for this project were techniques already used by the design agency that were involved in the project. We wanted to investigate how the IPA method could be adapted

to the methods that already were used in the design agency's regular workflow and design activities. A persona [9–11] visualizing users' goals, obstacles, and needs was created (Fig. 4–5). The persona was developed using the role-based approach where thematic analysis is one element, and a good persona is explicitly based on data about the user's goals, behaviours, hopes, and fears. It is a unique memorable character that communicate and creates a sense of involvement with the most important knowledge about users' reality [10, 11]. This approach to personas goes particularly well together with the thematic analysis in IPA. The persona is based on the themes of the IPA.

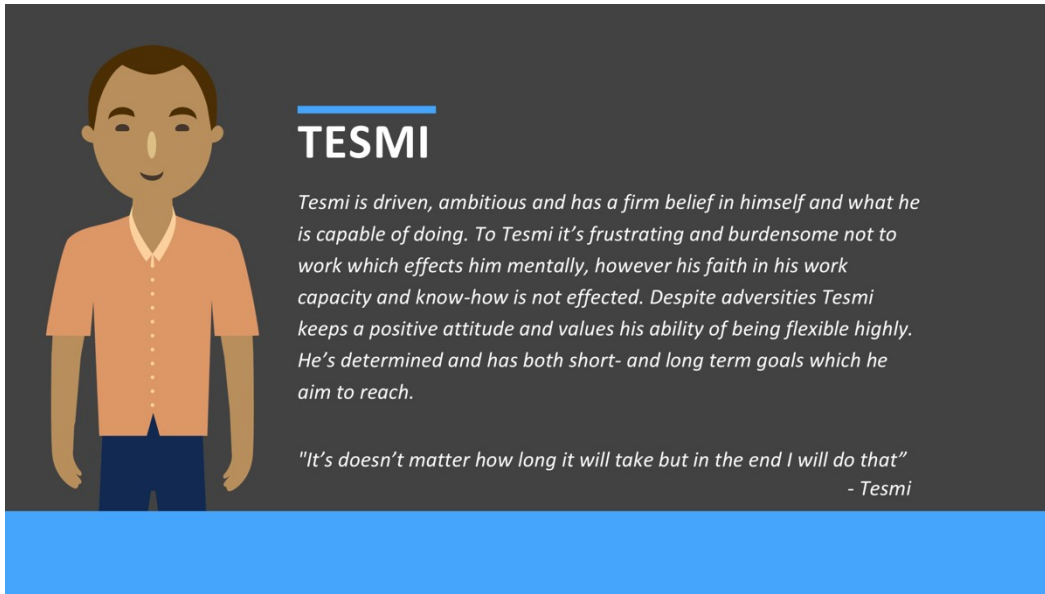


Fig. 4. The persona Tesmi was made to visualize key insights.

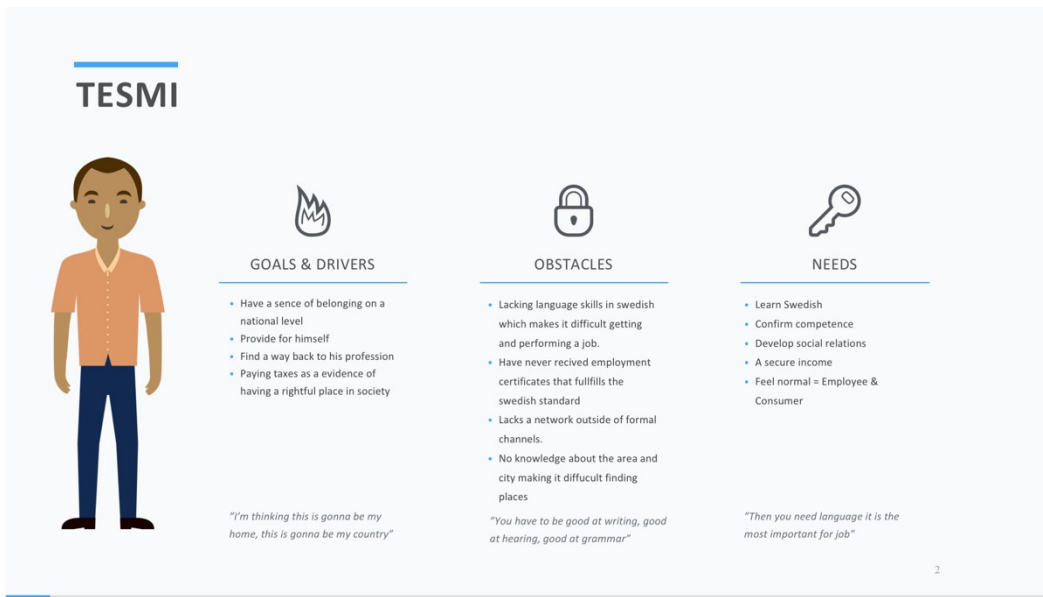


Fig. 5. The persona's goals, obstacles, and needs.

A journey map [13, 14, 45] was also produced by organizing the identified themes on a timeline before, during, and after getting a job, deciding if the theme was a positive or a negative experience, and finally adding key quotes from participants (Fig. 6). A journey map describes the user's choices for touchpoints in multiple channels and in multiple phases [45].

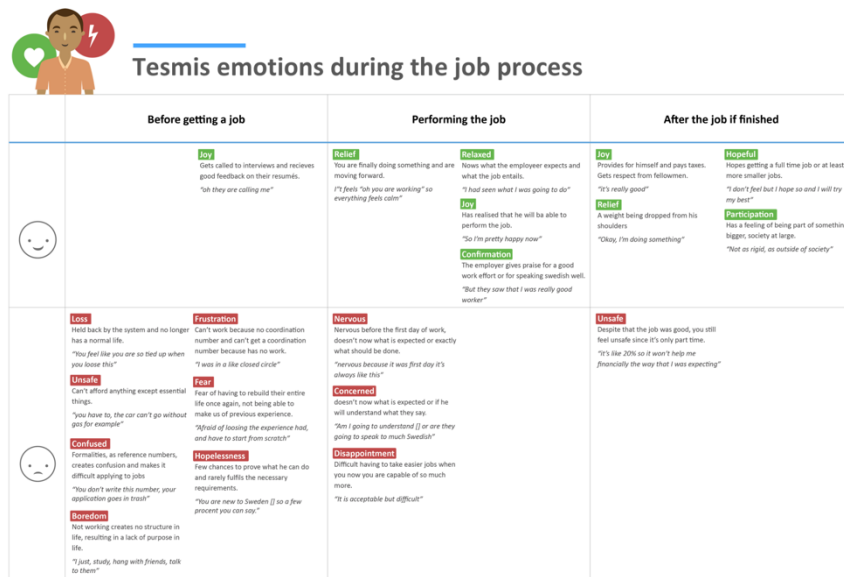


Fig. 6. Journey for Tesmi's experiences before, during, and after getting a job.

3 EVALUATION OF IPA WITH USER EXPERIENCE PRACTITIONERS

In this section, the result of the evaluation of the adapted IPA will be presented. This research project has been a case study of IPA in a pro bono user experience research project at a design agency, and the collected data on contributions and shortcomings of the method consisted of notes from a focus group with nine UX and service designers, an interview with two UX designers, feedback from the supervisor at the design agency during the project and the researchers own research notes from the project. The data were analysed with the use of an affinity diagram [12].

The focus group consisted of two parts. First, the researcher presented both the method and the result from the user experience research that had been done. Thereafter, the participants in the focus group had an open discussion based on, but not limited to, three problem areas:

- Time expenditure and resources
- The small sample sizes
- The focus of insights in relation to the information need in a UX design project.

The participants were free to talk about anything they wanted, however, the facilitator steered the discussion back to these three problem areas when needed. The problem areas for the focus group were identified and selected based on feedback from the supervisor at the design agency and based on the researcher's notes. The feedback from the supervisor was received during the project through informal conversations and tutoring sessions. The researcher's notes were taken during the project and they focused on the challenges and possibilities that emerged during the study.

The interview with the two UX designers was semi-structured and revolved around the same three problem areas as the focus group. The UX designers had several years of experience of both UX design and user research. They also had knowledge about sales and client relationships. The purpose of the interview was to get a deeper understanding of the problems they identified and especially the ones associated with sales and clients associated with commercial UX projects, in contrast the pro bono project.

3.1 Contributions of IPA in UX

The favourable qualities of IPA included the holistic insights, several possible uses of the method, and the focus on direct quotes.

Holistic Insights. The insights about the start-up's users were at a general level, which meant that they shed light on subjects that were not limited to a specific situation of use or to a specific application. Instead, the UX IPA revealed things about users' deeper desires and goals in life at a broader level. An example is an insight that users need "to feel community and solidarity at a national level". This is an insight that affects a large portion of a person's life.

The interviews revealed that use-specific insights are important for designers when designing a product since it gives them a clear knowledge base for their design choices. However, when evaluating the method, it became apparent that they saw a use for these general insights at an explorative, opportunity seeking, and service design level. This is a level that takes on a broader perspective and aspires to shape a context that can contain several different services. For example, one designer said:

"[UX IPA] might be fitting for something that's above several services because you don't want to be specific in that context since the practical needs [tied to each service] will vary."

Another designer said:

"[UX IPA] becomes more explorative, [it may be useful] in a situation where you don't know that much and are trying to explore and find new opportunities."

During the project, the UX-designer that had a supervisory role also expressed a belief that the insights would be useful for service design. During the interview one of the UX-designers said that the design agency had thought about creating personas at a service level, and he thought that the holistic insights from the adapted IPA could be a valuable foundation to build those on.

The research notes included reflections that the general nature of the insights should make them relevant for use in many different parts of the service, such as marketing or sales, and as a support for making strategic decisions. This was, however, not supported in the interviews with the UX-designers.

Several Possible Uses. The designers saw several uses for the UX IPA. They especially thought it could be used to immerse oneself in a user group. One designer said:

“After you have done your interviews and identified your different user groups, then you could find typical cases for these groups and immerse yourself to find nuances within them.”

Another designer wanted to use the method to learn more about already existing personas or to verify their authenticity:

“If I already have different personas and want to find deeper insights into them or to dig a little deeper in particular parts, then this seems to be an interesting method.”

One designer also expressed a curiosity to use the method with one to three participants as a tool to build hypotheses that could be tested on a larger sample with a less time-consuming method. This designer also wanted to use the method within a design team where the different members performed one analysis each and then compared the emerging themes and insights. This would allow for researcher triangulation.

Another designer also believed it could be a useful method to use when it is not possible to meet many users and you must make the most of the few you meet.

Quotes. One thing that all participants in the interview and the focus group agreed upon were that the quotes from the different transcripts added value to the persona and the journey map. It allowed them to feel that the insights were rooted in, and came from, a real person that they could emotionally connect with. One designer said:

“It gives context, you get a feeling that it is someone who is new to Sweden and can’t speak the language that well, things that you know [intellectually] but that you might forget when you read it yourself, so [the quotes] reminds you over and over about who this person is.”

One designer compared the value of the quotes to that of actually seeing someone struggle with a task in a usability test:

“Emotionally it’s two completely different things [seeing and not seeing], you connect emotionally on an entirely different level.”

The positive response to using quotes from the interview points to the value of using a method that builds on transcription, since this is what allows the quote to be present. Even though it adds extra time and effort it may be worth it if the added value is believed to be enough.

3.2 Shortcomings of IPA in UX

The shortcomings of using IPA in the pro bono user experience research project were associated with a high cost, a small sample size, and the need for transcription of interviews. These were discussed in relation to commercial projects, rather than pro bono projects.

Expenditure of Time vs. Produced Value. One challenge that the adapted version of IPA faced is that it takes a long time to produce the analysis, even though it had already been reduced compared to a traditional IPA. The question if the benefits are worth the cost remains. For commercial projects, the UX designers involved in sales and customer relations did not believe that this was the case. For comparison, one method that the design agency uses regularly produces a less exhaustive, but more streamlined analysis, and takes half the time as the adapted IPA. One of the UX-designer said:

“If you invest this much time then [the research] has to produce a lot of value. If it’s a project that’s part of a service and [the insights] are supposed to be guiding, concrete, and decisive, then it must be a lot better at that to be worth it. I believe that IPA is inferior at that since the insights are more holistic.”

However, the UX designers did believe that if the expenditure of time was reduced then it might be a method that could be fitting to use in regular commercial projects as well. This was also addressed in the research notes where the top-down approach to commenting and finding themes was hypothesised to be an efficient way of reducing analysis time and increasing value for the design process. It created a structure that supported the researcher and accelerated the process. It also allowed the researcher to make sure that the result would be of value for the design task at hand.

Few Participants. The evaluation showed that the UX designers were concerned about the small sample size in the method. In commercial projects, the design agency usually conducted interviews with 10–20 users, whereas IPA goes into more depth with as few as 3–5 users. There were two different reasons for concern. The first reason regarded a concern of missing important target groups in the research. This is a valid concern for both commercial projects and pro bono projects. It could, however, be dealt with by a thorough selection of participants. The second reason was whether it would be possible to get the clients in commercial projects to trust this kind of qualitative research or not. One designer expressed it in the following way:

“The reason why I wouldn’t want to do it [presenting research based on 3–5 participants to a client] is that I have a strong feeling that their reaction would be ‘We don’t trust that this is correct since you have done so few interviews and we have 42 million customers.’”

Another designer said:

“Our clients almost never question if our analysis is thorough enough, what they question is if we have done a sufficient amount.”

Yet another designer said:

“What the client is used to is several thousand respondents, so I agree that if you would say that we have met with three people, they would say, ‘No there can’t be a method that works with that’, regardless if there is such a method they would have trouble believing it.”

Several of the UX designers believed the reason for their clients’ opposition to the small sample size would be their tendency to favour quantitative methods. However, they did also believe that there would be a possibility to sell this research method to a client, but then you would have to be very clear on its purpose and why it would be beneficial to learn something about such a small number of users.

Transcription. Another challenge that the adapted IPA faced is that it builds on full transcription of interviews, which is a large cost. Most of the UX designers did not transcribe their

interviews but relied on field notes instead. One advantage of transcription is that it captures a lot more than note taking, and one designer was positive towards transcription since it ensures that important phrasing and nuances are not lost. Our own research notes indicate that the researchers' perception of the interviews changed during transcription. Some interpretations that felt promising during the interview proved to be void of detail, and one interview that the researcher believed to have been poor in material turned out to be one of the richest.

4 CONCLUSIONS

In short, IPA is a qualitative research method focusing on an in-depth understanding of a few participants' 'lifeworld'. It consists, in its version adapted for user experience, of five steps: (1) Collection of data; (2) analysis of the first case; (3) analysis of the remaining cases; (4) finding connections between cases; and (5) visualizing insights. The UX adaption of IPA differs from traditional IPA mainly in employing not only bottom-up analysis but also, top-down and visualizing insights for further design work rather than purely writing. The approach has a phenomenological aspect and a hermeneutical aspect. The phenomenological aspect focuses on what is important to users and how those things are experienced. The hermeneutical aspect focuses on what those experiences mean for the participants in the light of theoretical concepts.

The potential phenomenological contributions to the analysis of the user experience are a turn of attention to a first-person perspective of how an embodied agent engages with technology in a lived space [25]. It can provide an emphasis on what people bring to the situation of use, what perspective they employ during the use, and what value and meaning they take with them from it. For design purposes, such an understanding can facilitate the decision of what to place in the foreground and background of awareness [24].

A clear dedication to using IPA in UX research would entail clarifying first what the *objects of concern* are for individual users, what the *experiences* of those objects are, and what the *meaning* of the experiences are for the individuals. The experiences depend on how the user is oriented to the interaction space, in terms of possibilities for acting, equipment, what is near and far, and what is in foreground and background of awareness. The meaning would be analysed in terms of what the *consequences* of the experiences are for the individual, how the experiences and meanings relate to the *fore-structure* that the user brings into the situation of use, and how experiences and meanings can be explained using *theoretical concepts* [24, 39, 40]. However, there is a difficulty in applying phenomenological concepts without considerable expertise in phenomenology. In this case study, the reduction of time expenditure resulted in a considerably less theoretically informed interpretation, compared to a traditional IPA. There is a limit to how much you can simplify IPA without compromising with the phenomenological and hermeneutical nature of the method. A less novice interpretative phenomenological analyst tends to spend more time on the accounts of phenomenology of experiences and less time on the interpretation of meaning that comes later in the process, especially during the write up [18]. This means that the visualizations used instead of writing pushes the analysts towards the experiential aspects of the method and using a top-down analysis scheme may reinforce this tendency even further.

The evaluation of IPA with UX practitioners indicated that it provided holistic insights in the pro bono project but could potentially also be used for that purpose in commercial projects in the early stage and fuzzy front-end innovation, as well as, service design. It should be noted, that the UX professionals had no first-hand experience of using the method. These results should, therefore, be viewed as indicative, but not conclusive. The designers saw several possible uses including, creating empathy and immersion with users, verifying personas, and building hypotheses for personas that could be tested with a larger sample. All of these uses contribute to good role-based personas explicitly based on data about user' goals, behaviours, hopes, and fears, and creating a sense of involvement in users' reality [10, 11]. Another use could be to use IPA as a

main approach when you only have access to a few users. The focus on direct quotes and grounding insights in data were perceived as positive by the designers, which also go hand in hand with the idea of role-based personas [10, 11]. Challenges to using IPA in commercial UX practice were thought to be the high cost and the small sample size.

When it comes to sample sizes, IPA, like other qualitative research approaches, advocate the use of purposeful sampling to provide insights into particular experiences [18]. Referral by gatekeepers, opportunities based on contacts, and snowballing referrals by participants are often used recruitment strategies. The selection of participants depends on what perspectives of the phenomenon they can give. A homogenous sample is usually sought in IPA studies to keep the study focused, but practical aspects and access is sometimes limiting [18]. In UX design, however, you want a heterogeneous sample to reduce the risk of missing an important perspective. You want to see the variation. For example, in contextual inquiries it has been recommended to interview at least three people from three different contexts (i.e. nine participants) [12]. The reason you want to have a homogenous sample in IPA is that you want to keep the conclusions local and cautiously build up your claims [18]. What you gain from a small sample size is a detailed account of individual perceptions and understandings, instead of the group level claims where you cannot say anything about a specific individual. On the one extreme of the sample size, there is the single case study. On the other extreme, there is the kind of data you get from logging your entire user population. Logging the entire user population cannot be achieved when you still have not created your service or application. Furthermore, we can only log people's activities in the system, but not in their 'lifeworlds'. We still do not know what things do mean to them or how they experience them. The single case study on the other hand, can provide a great deal of detailed information about one certain person and how that person perceives and understands a situation, as well as, how different accounts from one person are connected and related to each other. We can gain insights for design from a single case study, but we learn very little about the rest of the user population.

The question for the remainder of this article is what can we learn from the results of this single case study of applying IPA in a UX project. From our practical trial of the UX IPA method in a pro bono design project for a disadvantaged user group, it seems clear that it can play a role in the development of personas and hence complement other methods for that purpose [9–11]. It also offers a structured and more rigorous variant of thematic analysis compared to the often-used affinity diagramming [12]. UX IPA can also work as a method to set user experience goals to get a team to work towards the same vision [43, 44]. The identified experience claims 'objects of concern' are the most important part of the analysis for this purpose.

4.1 Towards IPA in Commercial UX Projects

A modest generalization of the results of this case study of a pro bono project suggests that further streamlining of the method is desirable for the purpose of commercial UX projects. One way to do that, and reduce the cost, is to look at what kind of coding schemes could be used for top-down analysis, which is more time efficient than a pure bottom-up approach. There are good candidates in existing user experience models, as for example, emotional design [46], pleasurable design [47], the use-quality prism [5], threads of experience [48], the be-do model [2], and product experience [49] (see Gkouskos' [50] for a good overview of user experience models). Using an established theoretical framework for UX as an analytic frame instead of relying solely on aspects provided by the client, or professional heuristics, would facilitate making sure that you do not overlook important aspects [39, 5]. User experience is both multifaceted and difficult to define [5–7] and theoretical frameworks can therefore serve as an educated lens for where to start looking and what areas to cover in a semi-structured interview.

Top-down approaches to IPA have previously been shown to be useful [41] and mixing a top-down and a bottom-up process is not uncommon in design [42]. However, there is a risk of compromising the phenomenological foundation of IPA and enforce pre-conceived notions and prejudices of the analyst on the individuals' unique experience. In IPA, theoretical accounts usually enter at the end, with a different tone of voice to mark that there is a distance between text and interpretation [18]. This is a concern not only of IPA, but of qualitative research methods in general

One way to mix a top-down and a bottom-up process would be to intertwine interviews and analysis so that the analysis of one case is used to direct the data collection and analysis of following cases. After a few cases, categories will have emerged that can be used to gather data from a larger set of participants, and the same categories can then be used for top-down analysis.

The results also suggest that one challenge of using IPA in commercial UX projects is the small sample size, which makes it difficult to argue for generalizability to entire user groups. It would, therefore, be worthwhile to investigate how a mixed-methods approach, that combines IPA with quantitative methods, could be employed in UX design. This would also go hand in hand with mixed-methods approaches advocated in the role-based perspective on personas [10, 11].

4.2 Personas, Journeys, or Other Visualizations

Another development of the method would be to study visualizations. What visualizations are appropriate for communicating insights from IPA to design? The ones used in this study are a first attempt at visualizing insights based on current practices within the design agency of the case. This means using personas and journey maps.

A persona is a fictional archetypical character primarily based on interviews with many individual users [9–11]. The strength of personas is that they help in communicating and focusing a design and development team on one idea of who the user is. It is a communication device that facilitates the creation of a clear vision of needs, goals, and behaviours to design for.

The analysis or results section of an IPA report usually starts by providing an overview in a list, in an abbreviated table of themes, or in a schematic representation [18]. This is typically quite short, and a full table of all themes can be put at the end of the results section or in an appendix. The norm is then to take the themes, outline what it is, and describe in detail how it applies to each participant including excerpts and quotes from transcripts to ground the theme in data. Then you continue with the next theme. With more than six participants, it is recommended [18] to gather excerpts from all participants on every theme. Then you make a general summary of it at the level 'most participants reported', before giving a conceptual account of the theme, and then introduce idiographic details from typical extracts, and make sure to connect it to the conceptual level. Theme-by-theme presentation would provide a description of the user group without the creation of a persona character that personify the results and facilitates shared understanding.

Sometimes the results of an IPA are instead presented as idiosyncratic portraits of every individual, and themes are presented within each portrait [18]. This is particularly useful if you have few participants (less than three). Such portraits do not have the same potential to facilitate a shared and unison understanding of who the user is. However, if you only have data from three or less participants, portraits of individuals may still be better than personas, since the aggregation of data is less. Theme-based portraits of individuals are, in a sense, more real than personas.

A journey map describes a trajectory through a series of touchpoints before, during, and after using a service [13, 14, 45]. It can include not only experiences of how users feel, but also, what they do and think. The IPA in the pro bono case provided experience data for the journey, but it did not provide much understanding about options and choices at different phases in different channels. Such data are also important for a good journey map [45]. There are also other time-based or narrative representations that could be used, as for example; storyboards and scenarios,

or. a description of a typical day or week in the life of the persona [9, 11]. None of these are typically used in IPA. Experience over time is, however, critical in the case of interaction design, and some form of chronological account of user trajectories is necessary. Further development of such visualizations based on IPA is a good candidate for future research.

4.3 Summary

We have, in this article, shown how IPA can be adapted to a pro bono user experience research project in the case of understanding how newly arrived immigrants to Sweden experience a start-up service that introduced them to the job market. Adaptations included mixing a top-down and a bottom-up coding strategy, as well as, used personas and journey maps to communicate insights. IPA contributed to the pro bono project with a focus on both experience and meaning, and this is important in design projects that relate to major events in users' lives. It is less appropriate in user research for specific products, especially for products made for highly instrumental use. In commercial user experience projects, initial results indicate that IPA could be too costly and employ too small sample sizes to convince clients. There are, however, potential remedies in terms of top-down approaches and mixed-methods approaches. However, further simplifications of the method may risk the benefits that comes with a phenomenological approach. These issues are not a problem in many academic user experience studies, and IPA is, therefore, a good candidate method to academic research on user experience.

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