Social Practice Cards: Research Material to Study Social Contexts as Interwoven Practice Constellations

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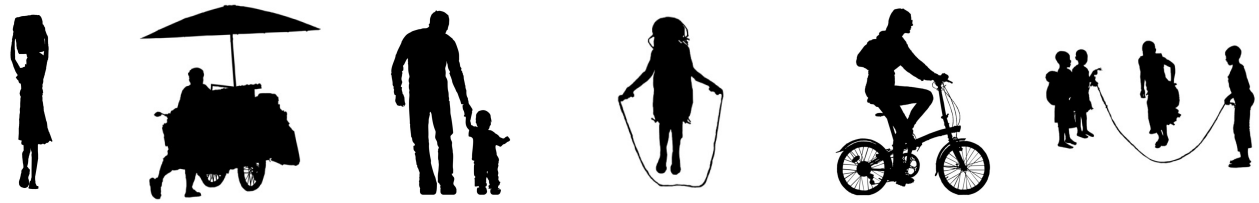

Figure 1: Sample Practices from the Social Practice Cards

ABSTRACT

Studying how social contexts shape technology interactions and how we experience them is hard. One challenge is that social contexts are very dynamic and shaped by the situated practices of everyone involved. As a result, the same human-technology interaction can be experienced quite differently depending on what other people around us do. As a first step to study interpersonal and interpractice dynamics, we collected a broad range of visual representations of practices, such as "riding a bike" or "skipping the rope". This material can be used to further explore how different, co-located practices relate to each other.

CCS CONCEPTS

• **Human-centered computing → HCI design and evaluation methods**; **Ubiquitous and mobile computing systems and tools**.

KEYWORDS

social context, tools, silhouettes, research material

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1 INTRODUCTION

"Social context" immensely impacts people's experience of interactions with technology. Sometimes a particular social context is a necessary prerequisite for particular human-technology interactions, for example, when taking a souvenir photo of friends. In other cases, social context brings new experiential qualities to an interaction, as when people play music to others. While important, Human-Computer Interaction (HCI) is far from a consensus about what "social context" is, beyond the rather vague idea that it is about situations where people share some space [1, 11]. Neither do we have a comprehensive taxonomy of social situations, nor do researchers agree upon a set of crucial attributes to describe them. As a consequence, there are only few tools to systematically study how social context shapes human-technology interactions and people's experiences.

This work builds upon a conceptualization of social context based on Social Practice Theory (SPT; e.g., [5, 7, 9]), as intertwined and intersecting constellations of co-located practices. When people come together, they co-perform several practices (e.g., standing, smiling, pulling a face, taking a photo). Following SPT, these collective practices and resulting interactions between them *are* the social context, which dynamically shapes the single practice performances and the likelihood of new practices to emerge or not. For example, in most situations, smiling and taking a photo go together and may even be interdependent. In contrast, other practices are in conflict with each other (such as "writing an exam" and "loud chatting"). Finally, some practices can seem completely "out of context" for each other with unclear experiential consequences, because they are rarely co-performed in the wild (e.g., rope skipping while attending a cocktail party).

In this sense, social contexts can be characterized based on the practices they allow for or even demand, and the practices they exclude. For example, Erving Goffman [2], who studied "social gatherings" with a similar notion, observed that "a funeral" can be characterized by the specific set of required and accepted practices (e.g., mourning, talking with a low voice), while it also excludes several other practices (e.g., dancing). Of course, included and excluded

practices vary across cultures and over time, and social practice theory accounts for such differences through local contigencies and a "history" of practices and their associated meanings [9]. Although this general observation seems to resonate with people's subjective experiences, the exact processes that determine which practices go well together and which do not remains too vague to be used effectively in design, although some of these relationships are relatively obvious: The noise produced by playing loud music wakes people up who are trying to sleep, so the "playing music" practice makes successful "sleeping" practices unlikely. In other cases, culture or traditions, local values, and people's subjective experiences are important. One example for this is an assumed conflict between taking photos and behaving naturally that has led some dance clubs to physically cover the cameras of their guests' smartphones (e.g., with a sticker) to prevent people from taking photos and to allow for a less disturbed atmosphere.

Based on the practice approach, we believe that a key to a better understanding of social contexts and how they are interwoven with human-technology interactions and user experiences lies in a thorough and systematic understanding of such facilitating and interfering interpractice relationships. However, to explore them requires the comparison of a substantial number of social practices combined with each other in different constellations to establish a particular social context.

We think that a systematic understanding of these relationships between co-located practices would help designers anticipate design requirements beyond the current, often decontextualized approach to developing human-technology interactions. It could also reveal local (in-)compatibilities as opportunities to reshape practice relationships through design.

To make this more approachable, we collected an initial heterogenous set of 203 practices and represent them as research material. We will use this to study constellations of practices in future user studies by assembling imagined contexts, and then gathering as well as categorizing emerging interpractice relationships. Our longer-term goal is to better understand and model how and why some practices harmonize with each other, while others do not, and to make this knowledge more accessible to designers. In this paper, we present the development process of the "Social Practice Cards", the current state of the set, and our plans to further use and extend it in the future.

2 DESIGN CONSIDERATIONS

We began to work on the "social practice cards" out of a need for easily accessible and flexible material to represent social contexts as constellations of practices. The general idea is to collect representations of human activities, broadly but also with a focus on human-technology interactions involved.

We had several requirements for the material:

- Easy to interpret, simple representations
- Diversity of practices
- Aesthetic consistency
- Minimal distraction by unrelated details
- Easy extensibility

Consequently, we chose a simple visual format that can be used to represent a wide range of different practices while providing some aesthetic consistency and authenticity. Photo-based material seemed useful, but it usually includes several unnecessary or possibly distracting details. Specifically, we wanted to set the focus on the performed practice more than the represented person. Thus, simplified, high contrast silhouette images seemed appropriate (see Figure 1).

Another design goal was extensibility. Other researchers and designers may have different needs and should be able to easily study different practices without having to deal with complicated graphics manipulation or expensive software. The silhouette format is already established, so there is an abundance of instructional guides available to create them with several (also free) software packages. In addition, there is a wide range of silhouette images available online, many with permissive licenses.

We included a broad range of practices in the initial set, which represent contemporary practices performed by people all around the world. We hope that this variability covers a wide range of social contexts, and proves to be stimulating in future research. That said, we are aware that such a collection of activities can never capture all possible practices and their nuances.

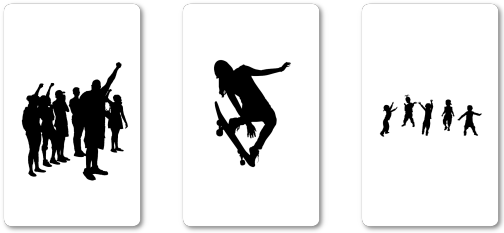

Figure 2: Example cards of three practices.

3 MATERIAL COLLECTION

We collected pictures of practices from various online sources. Three people independently searched for pictures that could either be normal photos or already transformed into a silhouette format. We had some a priori criteria for inclusion, but added a few more throughout our search process:

- The full person and practice should be visible (e.g., including their feet)
- The picture is available under a free license that requires no attribution
- The source picture set includes people with a mix of gender, age, and ethnicity, and people with different physical conditions
- The depicted scene is relatively contemporary and realistic

For some activities, depending on the orientation of the depicted person relative to the photographer, the activities were not clearly discernible after their transformation to silhouettes. For example, if the person read a book that she held between herself and the camera, it disappeared in the silhouette. In these cases, we searched for an alternative picture of the practice in a different orientation and included it, if available.

The license restriction was added because it allows us and others to freely share the set. However, we had to exclude many images that would otherwise fit well. We hope that we can extend the set in the future with more free images, but a workaround for user researchers is to include their own, non-free images in their specific work, without publishing them online.

Finally, some images we found depicted people in historic or otherwise fictional contexts (e.g., a witch on a broom), in which case we did not include them. Should such practices be relevant for future researches, they can easily add them.

4 CURRENT STATUS

The set currently contains a total of 203 silhouette images [10]. We have organized them according to broad categories as listed in Table 1. 135 silhouettes represent practices performed alone, 67 silhouettes represent practices performed together with one or more other people, and one is a picture of a robot without a performing human. When performing alone, the person is lying in six silhouettes, sitting in 20, standing in 45, and moving in 65. The categorization was more difficult in the practices performed by more than one person, and we quickly ended up with many subcategories. Thus, we decided to only distinguish between spatially dynamic and static practices, and "mixed" ones (i.e., those in which some people are relatively static while others are more dynamic). We transformed 93 images from the original source. Most of these transformations were from photo to silhouette format, in a few cases we have split up a silhouette image with several seemingly unrelated people into separate practices.

5 FURTHER RESEARCH

In our own research, we are particularly interested in further exploring different types of relationships that exist between practices (see e.g., [11]). We already worked on the positive and negative interplay between practices based on sound. For example, phone calls seem to disturb some co-located practices such as reading, but they can also enable new practices, such as overhearing the call [6] and possibly facilitate entailing conversations. However, sound is only one specific dimension and others are still relatively unexplored.

Previous research in HCI, especially on social acceptability, has considered different context "categories" (e.g. [8]) as an ad hoc measure to study the experiential differences between social contexts. For example, common context categories include a sidewalk, a bus, a pub, or a workplace. Of course, this list of categories was never assembled with the intention to represent all possible contexts, but rather to explore a broad set of contexts that are still manageable to cover in typical user studies. Our approach is somewhat different, because we differentiate contexts based on specific practices of other people rather than location categories. While this adds some complexity, we believe it to be fruitful for future work, because it helps us actually understand and describe "why" for example a workplace might shape user experiences in a different way than a sidewalk. This allows us to study the similarity and differences between contexts. For example, we would expect a substantial but not complete overlap between "bar" and "restaurant" practices, and a lower overlap between "bar" and "kindergarten" practices.

Table 1: Categorization of Silhouettes according to some formal criteria. At the bottom of the table we have included summaries for each criterion.

Performers	Posture	Group	Silhouettes
alone	lying	child	2
alone	lying	female	2
alone	lying	male	2
alone	sitting	child	2
alone	sitting	female	11
alone	sitting	male	7
alone	standing	child	4
alone	standing	female	12
alone	standing	male	27
alone	moving	child	9
alone	moving	female	23
alone	moving	male	33
alone	other	female	1
together	dynamic	child	7
together	dynamic	female	5
together	dynamic	mixed	29
together	static	child	3
together	static	female	2
together	static	male	7
together	static	mixed	13
together	mixed	mixed	1
technology			1
		child	27
		female	56
		male	76
		mixed	43
alone			135
together			67
	lying		6
	sitting		20
	standing		43
	moving		65
	dynamic		41
	static		25

Assumingly, this overlap would go along with more similar user experiences of a technology interaction in these contexts. In addition, we could also better study hybrid settings and how they relate to their origins (e.g., a board restaurant as a mix between a restaurant and a train). Compared with the categorical approach, this practice-based perspective can help us better interpret previous results and their validity in new contexts. Thus, one of our central goals with the practice-based approach is to better describe and study social contexts, so we can make use of them as a resource for design, rather than a complication in need to be managed.

To study the structure of practice relationships, we currently consider two methodological approaches for which we plan to use the social practice cards.

First, we plan a card sorting study to understand which practices people believe to go well together and which not. Card sorting is an efficient way to collect subjective one-to-one relationships between different elements (here practices). We plan to use card sorting to identify more specific clusters of practices which give us a broad overview of the practices people think go well together and which do not.

Second, we plan to use example practices from the card sorting clusters for a follow-up repertory grid study [3, 4]. In a repertory grid study, participants are typically presented with sets of three elements drawn from a larger pool, in our case visual practice representations. Their task is to group two of these elements together that they see as similar in some way, but different from the third, and to describe the difference in their own terms as a bipolar attribure pair (e.g., round – cornered). An advantage of repertory grid is that participants create their own "scales", so their judgments directly relate to their actual experiences. We hope to derive commonalities between different people's experiences from this, that can inform further research and design.

In addition, we plan to make our findings available together with the social practice cards and invite other researchers to share their findings with us. Over time, this could produce a rich, annotated set of practices that can be useful in broader research areas.

6 PRACTICAL USES

In addition to advancing HCI research by systematically exploring interpractice relationships to model facilitating and interfering relationships and their impact on user experiences, the social practice cards can be integrated with a broad range of existing methods in user experience design. We outline a few examples here that are meant to cover a wider variety of different approaches.

First, in quantitative research approaches, designers could describe their technology concept (e.g., a technologically enhanced skateboard or scooter) in an early stage of the design process with a textual vignette format during a questionnaire study. The silhouettes can then be used in a next step to imaginarily place this technology in different social situations (represented by visual cues) and collect data about people's anticipated experiences. This approach is similar to existing work on social acceptability, but may provide more nuanced insights because of the more fine-grained context descriptions.

Second, it can also be used in qualitative research to more deeply investigate how people imagine their subjective user experiences around other people performing certain practices. Following the skateboard example, this can be helpful to study the "why" behind (in-)compatibilities and explore ways to work around them. To facilitate such qualitative use cases, we have provided printable templates in game card format (see Figure 2). In early pilot tests we found them to facilitate immersion, to invite reassembling new practice combinations, and to help participants reflect on the practice relationships.

Third, researchers can focus on specific target contexts and collect typical local practices in a pilot field study. The social practice cards can be used to create a context portfolio to guide the further design process (we think of this as similar to personas, but representing practices in context instead of people). This can serve as a more thorough representation of the target context and can support reflection throughout the design process. For example, the development of social contexts over time based on disappearing and new practices can be represented explicitly through practice representations and directly inform further design. As an example, e-scooters are such a relatively new practice in sidewalk or park contexts in several cities that have recently started to shape how people interact with each other and their environment in these contexts.

7 CONCLUSION

With this workshop contribution, we present the "Social Practice Cards", a set of research material to study social contexts based on the relationships between multiple, co-located practices. We framed social context as a constellation of (in-)compatible practices, whose relationships shape people's situated experiences. The presented material helps to flexibly study such relationships, and how new technology interactions fit in with existing social contexts. It is based on a simple but versatile visual format, freely available, and easily extensible. The set currently includes a diverse collection of 203 practices that can be used in a wide range of qualitative and quantitative research.

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