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## Hosting social touch in public space of merging realities

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**Abstract.** Is human hosting essential to social touch in the public space of merging realities? This paper explores the role of hosting in art and design for mediating social touch in public space, social robotics, virtual reality and telematic environments. The question of whether **human** hosting is essential to social touch was the focus of three experiments held during performance of artistic orchestrations designed for social touch in public space for which the effects of different hosting designs have been analysed. These internationally presented orchestrations, Saving Face (2012) and Master Touch (2013)<sup>1</sup>, purposefully disrupt and re-orchestrate multi-sensory connections in unfamiliar and unpredictable ways, to evoke shared reflection and shared sense making in public, mediated by a host. This paper extends the multi-sensory interaction model for social touch described in (Lancel et al. 2019 e) to explicitly include the role of a host. The question this paper addresses is whether the host needs to be human. This paper calls for future design of disrupted social touch in merging realities to consider hosting processes of shared sense making. Such design should facilitate new forms of reciprocal embodied interaction, that support descriptive self-disclosure, dialogue and shared reflection on experience of social touch in merging realities.

**Keywords:** Shared experience of social touch, engagement, digital performance art orchestration, social context, public space, merging realities, hosting, social & multi-sensory model for interaction, immersive, design of disruption.

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<sup>1</sup> Saving Face was orchestrated internationally in museums, urban public spaces and theatres, including; 56th Venice Biennale 2015; Connecting Cities Network Berlin/Dessau 2013; 3th TASIE Art-Science exhibition, Science & Technology Museum Beijing 2013; Beijing Culture&Art Center BCAC 2015-2016. Master Touch was orchestrated at Rijksmuseum Amsterdam 2013.

## 1 Introduction

Is human hosting essential to social touch in the public space of merging realities? As the options technology provides increase so does the importance of this question. To which extent does hosting need to be included in mediated social, communication design for social touch, for social robotics and tele-matic environments? Is co-location of importance? Does hosting need to be performed by a human being?

This paper extends the multi-sensory interaction model for social touch described in (Lancel et al. 2019 e) to explicitly include the role of a host. The question this paper addresses is whether the host needs to be human.

The question of whether **human** hosting is essential to social touch was the focus of three experiments held during performance of artistic orchestrations designed for social touch in public space for which the effects of different hosting designs have been analysed. These orchestrations, Saving Face (2012) and Master Touch (2013)<sup>2</sup>, purposefully disrupt and re-orchestrate multi-sensory connections in unfamiliar and unpredictable ways, to evoke shared reflection and shared sense making in public space in different countries, mediated by a host. In these artistic orchestrations, in which members of the public touch themselves or each other, familiar perceptions, of who touches, who is being touched, are disrupted and re-orchestrated into new multi-sensory syntheses. Specifically, this paper explores whether performer-based hosting can be replaced by participant-based hosting. These orchestrations provide the experimental setting in which effects of design choices are analysed and compared, extending previous results reported in (Lancel et al. 2019 a, b).

## 2 Related Work

This paper addresses the role of hosting for shared sense making in social touch, based on purposefully disrupted sensory input in the public space of merging realities.

Social touch (or ‘interpersonal’ touch), affective gestures of touching another (Huisman 2017, pp. 397-399), are currently explored in remote and prosthetic interfaces (Lancel et al. 2019 e). Influence of other senses on the experience of touch with multi-modal interfaces are currently researched and designed. (Huisman 2017). Appreciation, sense making and clarification of the meaning of social touch are clearly social context dependent (Erp and Toet 2015, Wang et al. 2012)<sup>3</sup>, mandating purpose-

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<sup>2</sup> Saving Face was orchestrated internationally in museums, urban public spaces and theatres, including; 56th Venice Biennale 2015; Connecting Cities Network Berlin/Dessau 2013; 3th TASIE Art-Science exhibition, Science & Technology Museum Beijing 2013; Beijing Culture&Art Center BCAC 2015-2016. Master Touch was orchestrated at Rijksmuseum Amsterdam 2013.

<sup>3</sup> Wang for example describes experiments in which stories are shared between a story teller and a distant listener. It was shown that touching the listener on ‘emotional high points’ in

ful design to this purpose. These research perspectives dominantly focus on the users' perceptual experience of 'direct' social touch, that is seemingly not disrupted (Lancel et al. 2019 e, p.23), as 'a perceptual illusion of non-mediation' (Lombard and Ditton 1997).

For example, in social touch in mediated environments for sexual experience (Lombard and Jones 2013), interacting participants adapt multi-modal types of sensory input and stimulations for different levels of feeling intimately connected (Lombard and Jones 2013, p. 28).<sup>4</sup>,<sup>5</sup>,<sup>6</sup> Interactive, simultaneous and reciprocal communication is orchestrated to substitute face-to-face sense making and negotiation has shown to emerge from direct social touch and proximate sexuality (Lombard and Jones 2013, p. 33). However, critical research has addressed the limited 'social richness' of such social touch, claiming that meaningful shared intimate experience of touch, vital to human well-being, emerges from descriptive self-disclosure and proximity to a reliable alliance (Lamonovska and Guitton 2016, Lombard and Jones 2013, p. 37).

**Shared practice of sense making and reflection** have been explored in domains of Design and Art. In the domain of critical design, reflection on social connections is the goal of shared practice of play, playing and seeing each other play, through actions, settings, (social) contexts and experience, in dynamic relations (Cermak-Sassenrath 2018). Strategies<sup>7</sup> for such shared reflection and sense making through play include a) involving users in open ended meaning-making and interpretation processes; b) providing feedback to users for reflection, as part of the design and c) disrupting familiar relations of perception.

In the domains of both Art and Design, disruption, unfamiliarity and ambiguity are purposefully designed to provoke play, engagement, reflection (Kwastek 2013) and sense making.

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the story, enhanced the listener's emotionally connection 'with the emotional view point of the story-teller'.

<sup>4</sup> Interaction is explored in direct (f.e. through prosthetics) and indirect corporeal interaction (between actors and spectators), or in combination.

<sup>5</sup> Examples of interaction design aiming at supporting 'a perceptual illusion of non-mediation' of touch can be found in different applications for (combined) virtual and augmented realities and robotics, for gaming design, art, entertainment, training, therapy, sex, gaming, robotics (Erp and Toet 2015, Huisman 2017, Lancel et al. 2019 d).

<sup>6</sup> Patented artificial skin compositions attempting to evoke experience of presence in the form of perceptual realism, include Cyberskin, Futurotic.

<http://www.sextoyspro.com/cyberskin.shtml>, last accessed 2019/9/25.

<sup>7</sup> These design strategies, for example in 'critical design', 'reflective design', 'ludic design', are applied to evoke gaining critical insight in (implicit) value systems, educational purposes, change and transformation and for experience of joyful play.

In digital haptic performance art, visual, haptic and auditory relations are designed for new digital synaesthetic syntheses (Gsölpointner et al. 2016) for immersion and reflection to emerge. Seeing someone being touched is explored to evoke spectators' vicarious experience. (Kwastek 2013)<sup>8</sup>. Designs for embodied spectatorship have shown to be able to successfully resonate social empathy and connectedness (Freedberg and Gallese 2007; Martin 2018; Ward 2018). Often, in such new haptic syntheses, social sense making is provoked through corporal vulnerability of an artists' body, as an embodied 'relational interface' (Gill 2015). Participants are challenged to consider approaching, touching or even physically abusing an artist/performer. Unfamiliarity and exposure, of embodied behavior, corporal vulnerability and shared responsibility, are purposefully designed to re-negotiate such social values and to engage reflection on shared and personal experience (Benford et al. 2012, Lancel et al. 2019 c).

**Design of hosting, for mediating social connections**, can be found in television talk shows. Such talk show hosts visually embody mediation between a) participating guests and audience who are present in the television studio and b) the television studio and audience in their private homes. The host engages and exposes processes of sense-making, through stimulating guests to make personal and intimate stories explicit, within conventions of debate, romance or therapy (Livingstone and Lunt 2002).

Design of hosting in public space of merging realities, for mediating social touch for participants in interplay with each other, has been explored in digital performance art (Lancel et al. 2019 a, b, c, d). In different trajectories of 'intimate aesthetics' (Loke and Khut 2014), in their artistic orchestrations, Lancel and Maat include hosting, to 1) introduce the orchestration and guiding participants through performance and 2) ensure social and corporal safety and 3) exposing dialogue that facilitates sense making and shared reflection through descriptive self-disclosure in proximity to others.

Artistic orchestrations by Lancel/Maat (2000-2019) show that demanded social context, for sense making and clarifying meaning of social touch in public spaces, can be performed by such role of hosting (Lancel et al. 2019 a, b, c, d).

The model this paper presents, extends interaction model for social touch (Lancel et al. 2019 e). This model includes multi-sensory and vulnerable aspects of social touch performed by participants, such as of kissing or (self-caressing). The model here presented completes this model with the role of the host.

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<sup>8</sup> Related to this research, in the domain of neurology, mirror neuron activity of touch is considered to enhance empathy (Ward 2019). In specific cases of 'mirror touch synesthesia', precarious touch experience is perceived stronger if the spectators' neurological systems show 'lower thresholds' (Ward 2019, Martin 2019).

### 3 Artistic Motivation.

In their artistic performances, Lancel and Maat (Lancel/Maat 2000-2019) orchestrate novel affective, haptic connections between participants, members of the public space of mixed and merging realities. Their orchestrations relate individual participants to others in digitally distributed environments in public space. Members of the public space either participate as ‘Actors’<sup>9</sup> or ‘Spectators’ and can choose to perform one or both roles over time.

In each orchestration, Actors touch each other or themselves, and are observed by Spectators. The acts of reciprocal touching are perceived both directly and indirectly. Indirect interaction is purposefully disrupted. The unfamiliarity and ambiguity between the different sources of sensory input are designed to evoke re-negotiation and reflection on both the individual and shared embodied experience of social touch.

In a multitude of artistic orchestrations, Lancel and Maat have explored on a) the basis of self-touch, via face recognition technologies in a mirror screen (experiments 1 and 2 of orchestration Saving Face 2013, 2015) (Figs. 4 and 5); b) self-touch, in a smart textile body covering veil (Tele-Trust 2009) and c) kissing each other, while wearing EEG headsets (EEG KISS 2014-). Unfamiliar and unpredictable relations to vulnerability of reciprocal touch, such as of kissing and caressing, are orchestrated to evoke re-negotiation and reflection on both individual and shared experience.

Dialogue with the host<sup>10</sup> is designed to evoke reflection and sense making, in descriptive self-disclosure in proximity to others. The role of host in Lancel/Maat’s orchestrations, is mediating direct and disrupted experience, of social touch characterised in these orchestrations by intimacy and exposure, vulnerability and responsibility, familiarity and unfamiliarity. The host is, in fact, part of the social context, for sense making and clarifying meaning of social touch experience in public spaces, in the artistic orchestrations this paper explores.

The performance host is responsible for:

- 1) introducing, contextualizing the orchestration with rules of play, guiding participants through the performance;
- 2) ensuring social and corporal safety;
- 3) evoking dialogue, to encourage participants to express and share their experience in words with the host and with each other—making their embodied experience explicit.

The embodied performance of hosting enables dialogue based on embodied, empathetic reciprocity. Participants creatively explore new words, expressing new images

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<sup>9</sup> Instead of referring to the notion of *performance* as a form of ‘role-playing’, *performativity* (Butler 1990) is, in this context, considered to be a repetitive act designed for public spaces, to share reflection on social engagement.

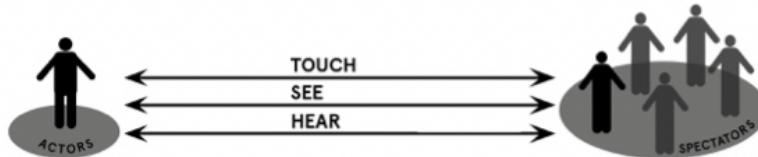
<sup>10</sup> In the orchestrations by Lancel and Maat, interaction by the performance hosts is performed by the artists themselves, trained volunteers or fellow workers.

and emotions to describe the unfamiliar visual-haptic experience of *caressing-and-feeling-caressed* intertwined with visually emerging on screen shared with others. They explicitly reflect on their embodied experience, they take time and wonder, they try to find new images and words and express emotions while often reacting in surprise to their words (Lancel et al. 2019 b). Participants express their experiences of social, corporal connections, for example “This a technological but sensitive me” and “I feel merged with other people”. (Lancel et al. 2019 a, b; Lancel/Maat 2012, 2013).

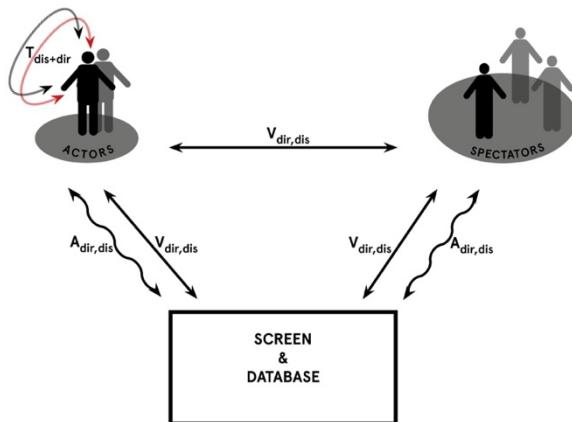
#### 4 A multi-sensory model and social context, for disrupted hosted social touch experience.

Direct social touch entails a multi-sensory synthesis of reciprocal connections, including tactile, audible and visual connections, as shown in Fig 1. Disrupted social touch, in which tactile, audible and visual connections are disrupted, have been subject to research in orchestrations in public spaces of merging realities, for which an interaction model was presented in (Lancel et al. 2019 e), as shown in Fig. 2. This section introduces a multi-sensory model for social touch interaction including a host (Fig. 3).

##### 4.1 Disruption of social touch experience in a multi-sensory model.



**Fig. 1:** Direct social touch (Lancel K, Maat H, Brazier FM, 2019 e).

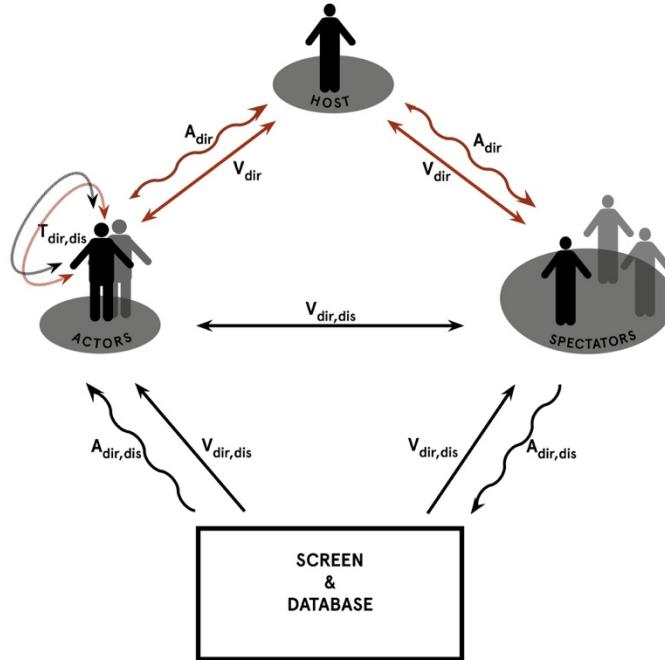


**Fig. 2:** Interaction model for disrupted social touch. (Lancel K, Maat H, Brazier FM (2019 e)).

The multi-sensory model (Fig. 2) includes variables for direct and disrupted connections that support experience and engagement for reflection of social touch orchestrations. In these orchestrations, participants relate to others on electronic screens through mirroring self-touch as a form of socially relating touch (Lancel/Maat 2000-2019), through unique syntheses of ambiguous **direct (dir)** and **disrupted (dis)**, multi-sensory connections. In each orchestration, direct touch is replaced by combinations of (self-)touch, visual and auditory connections, direct and disrupted, between Actors and Spectators. Participants' touching actions must be synchronized in relation to a data-visualization on screen or data-audification. All data representations are stored in databases, accessible to all participants.

#### 4.2 Disruption of social touch in a multi-sensory model including a host.

The model for multi-sensory interaction in Fig. 2 does not yet include interaction with a host. In the interaction described, performance of touch is exposed and hosted through dialogue, to direct all participants' attention to focus on their affective and embodied experience. The model depicted in Fig. 6 explicitly includes performance hosting in **direct (dir)** visible audible and touch interaction with all participants. The question whether these connections need to be direct, visible and audible, performed by a human host, is explored in Section 5.3.



**Fig. 3:** Interaction model for hosted experience of disrupted **social touch** in public space of merging realities.

## 5 Research Setting

Different artistic orchestrations, in different cultural and geographical contexts by Lancel/Maat (Lancel/Maat 2000-2019), have explored the implications of different interaction designs in which a performance host fulfils the role described above. In these orchestrations, the performance host has shown to be able to successfully evoke and mediate dialogue with participants mandating reflection and shared sense making of their embodied experience (Lancel et al. a, b, c, d).

The question of whether **human** hosting is essential to social touch was the focus of three experiments with the Saving Face and Master Touch orchestrations for which the effects of different hosting designs have been analysed.

### 5.1 Research Context.

In addition to experience of social touch gained in artistic orchestrations with a human host, e.g. Saving Face (2012), Tele\_Trust (2009), EEG KISS (2014) (Lancel/Maat 2000-2019), the implications of interface design without a human host are explored in Saving Face and Master Touch.

Saving Face (2012) is an artistic orchestration in which participants are invited to caress their faces in front of an interactive sculpture. This interactive sculpture (equipped with cameras and face recognition technology) is connected to a large electronic public screen in the public space. Actors ‘paint’ their portraits on the public screen, where they first appear slowly and then slowly merge with the portraits of previous visitors into new, unpredictable and untraceable networked ‘identities’, which Lancel and Maat call Virtual Personae. Each Virtual Persona is saved digitally, to be shown later in an auto play mode on the electronic screen.

Master Touch (2013) is very similar to Saving Face. The difference between Saving Face and Master Touch is that in Master Touch, participants’ faces appear and merge slowly with portraits of the digital portrait collection of the Rijksmuseum in Amsterdam, for example with a portrait of Rembrandt or Van Gogh, instead of with portraits of other participants from the public.<sup>11</sup>

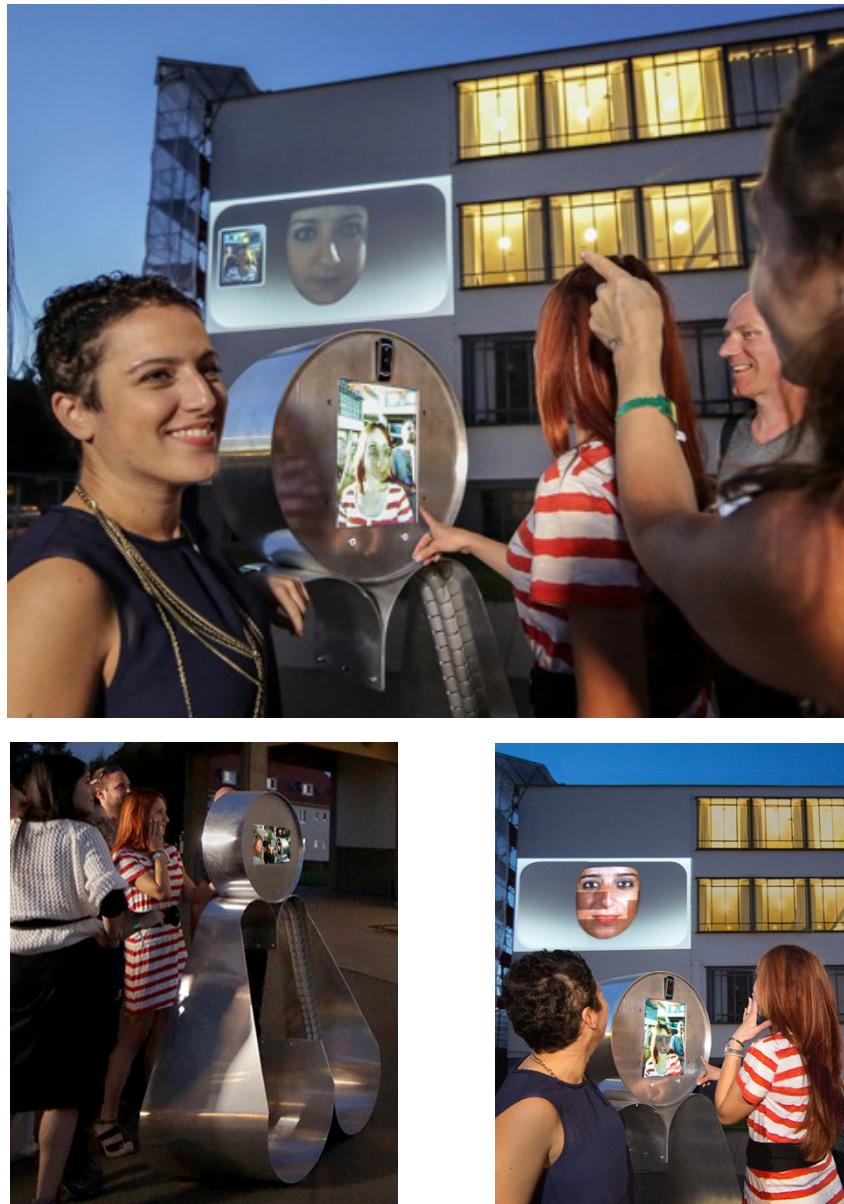
### 5.2 Research method.

Research through design (Zimmerman and Forlizzi 2014) is the methodology deployed to explore interface design choices on the experience of shared social touch. Three sources of information are analysed: 1) observations (by the hosts) of participants’ actions and reactions; 2) thick descriptions of open ended interviews with parti-

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<sup>11</sup> The Rijksmuseum Amsterdam collection of digitized portraits can be found on:  
<https://www.rijksmuseum.nl/en/search?q=portraits&ii=0&p=1>, last accessed 2019/9/25

cipants; 3) photo and short video documentation that support these observations, when available.



**Fig. 4.** Experiment 1 of orchestration Saving Face during ‘Connecting Cities Network’ at Desau/Berlin, showing participants exploring the interactive sculpture. A video documentation device is built in the back side of the aluminium sculpture, an interactive screen at the front side. Participants exploring Image by Ruthe Zunz. © Lancel/Maat, 2013.



**Fig. 5.** Experiment 2: Orchestration of Saving Face at Beijing Culture and Art Center Beijing, showing addition of large printed texts and a participant exploring. Image by Lancel/Maat, © Lancel/Maat, 2015.



**Fig. 6.** Experiment 3, Orchestration of Master Touch at Rijksmuseum Amsterdam; showing people exploring the orchestration and the questionnaires. Image by Lancel/Maat © Lancel/Maat, 2013.

### 5.3 Three Experimental Orchestrations

The first experiment (2013)<sup>12</sup> explored whether hosting could be replaced by a demonstration video, showing the interaction play rules and showing people while participating and being in dialogue with each other. This experiment took place during a performance in Berlin-Dessau (Lancel et al. 2019 a, b) at a crowded festival. Many people of different ages, cultural and geographical backgrounds and genders visited and participated in the orchestration, in either a hosted or non-hosted performance. In absence of the performance host, in the non-hosted performance, people watched both the demonstration video and performative acts by others on site, whilst the performance host observed.

The second experiment explored whether attention to affective and embodied experience could be enhanced by means of other than a human host. In addition to the demonstration video, large printed texts were used to introduce the social context of the orchestration and rules of play. This experiment took place in Beijing<sup>13</sup> (Lancel et al. 2019 b), in a museum, in a space with a large window facing the street. The large printed texts on the walls were visible from outside, through the window on the street, and, from inside as text on the walls.<sup>14</sup> Again, participants' autonomous interaction took place while the performance host observed from a distance.

The third experiment explored whether hosted dialogue could be replaced by questionnaires. This experiment took place in the orchestration 'Master Touch' (2013)<sup>15</sup>, at the Rijksmuseum in Amsterdam. In this orchestration, questionnaires were introduced, to replace the role of hosting evoking dialogue among participants. Open questions, that are normally asked by a human host in the performances, were printed and placed on tables close to the participants. These questionnaires included the questions: 'Is this your portrait on the screen and why (not)? How does it feel to become visible on the screen through caressing your face? Are you part of a machine in Master Touch? What is the difference between watching a painting from a distance and watching through touching?

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<sup>12</sup> In Berlin-Dessau, the Saving Face orchestration was performed during two days at festival Connecting Cities Network, curated by Public art Lab Berlin, September 2013.

<http://connectingcities.net/project/saving-face>, last accessed 2019/9/25

<sup>13</sup> In Beijing, the Saving Face orchestration was performed at Beijing Culture and Art Centre (BCAC), for a period of 10 days during December 2015-January 2016. Due to success, the period was prolonged with a month.

<sup>14</sup> These texts also functioned to solve disrupted communication due to a language-barrier.

<sup>15</sup> Master Touch was performed at Rijksmuseum Amsterdam at both the Jubilee Night of the Rijksstudio (responsible for digitizing the portrait collection) and the Museum Night, November 2013.

#### **5.4 Results**

The experiments, of Saving Face in Dessau (2013) and Beijing (2015) and of Master Touch (2013), showed that aspects of human hosting by a performance host on site can be replaced partially by participant hosting.

In the first experiment of orchestration Saving Face (2013), as reported in (Lancel et al. 2019 b), the host observed that participants 1) helped and showed each other how to participate throughout the performance, while 2) guarding each other's embodied safety. The host observed that participation shifted from concentrated and haptic exploration to making funny faces, exploring possibilities and limitations of the face recognition software and exposure of their faces. After having participated in the haptic interface, often, 3) the participants' dialogue among each other focussed on experience of 'fun' 'surprise' and 'wonder', while pointing at the portrait on screen. Sometimes, participants then asked the performance host questions about the unpredictable technological and seemingly 'magical' (Reeves 2013) interaction. This is different from hosted experiments, in which dialogue more often focusses on shared engagement in sense making and reflection, as has been reported in (Lancel et al. 2019 a, b).

In the second experiment of orchestration Saving Face (2015), as reported in (Lancel et al. 2019 b), the performance host observed that, in comparison to the first experiment, people were less disrupted and more focussed than in the first experiment. They 1) watched the demonstration video and read the texts together, pointing at parts of these texts while interacting. In particular younger people participated in acts of caressing using the technological interface often in joint exploration, while socially gathering, laughing, stimulating and 2) guarding each other. During and after acts of touching, the host observed 3) participants being in dialogue while pointing at the screen and at their faces. The host then was sometimes approached to answer conceptual questions about context and societal meaning of the orchestration, in particular with respect to privacy.

In the third experiment Master Touch (2013), participants filled in the questionnaires with one-word-answers and little dialogue took place between participants. After fifteen participants reacting in this way, the experiment was ended, after which one-to-one hosting was successfully based on the questionnaires.

These three experiments show that video documentation introducing rules of play and participation, added by large printed texts introducing both the rules of play and the social context of the orchestration, can partly replace human hosting. However, although participants can 1) autonomously use and play with the interface, they less focus on social context and less focus on performance of touch occurs. 2) Corporal and social safety are supported by co-participants who are, in this aspect, fulfilling a role of 'participant hosting'. 3) Although participants engage in dialogue during and after a performance, the type of dialogue differs. Participants are less inclined to take

the time to reflect on the unfamiliar embodied experience and to express the unfamiliar embodied experiences in words, making the experience explicit, to discuss with others.

## **6 Discussion and future research**

This paper addresses the role of hosting in current mediated social, communication design for social touch, for social robotics and tele-matic environments. Current social touch design is based on multi-sensory and multi modal environments that simulate experience of direct social touch. Furthermore, the context of social touch has shown to be crucial to appreciation, sense making and clarifying meaning of touch (Erp and Toet 2015, Wang et al. 2012). An existing multi-sensory interaction model for social touch (Lancel et al. 2019 e) has been extended to include the role of a host. The model shows the required direct, embodied reciprocity between host and participants, but does not necessarily assume a **human** host.

The paper explores the question: Is human hosting essential to social touch in the public space of merging realities? Multi-sensory orchestrations of social touch have been designed and performed in public spaces. In these orchestrations, shared sense making and reflection of social context and experience of embodiment through dialogue with a (human) performance host is explored (Lancel et al. 2019 a, b, c, d). In three experiments with the Saving Face (2012) and Master Touch (2013) orchestrations in Amsterdam, Berlin-Dessau and Beijing, the effects of different hosting designs have been explored and analysed.

This role of hosting provides social interaction of 1) introducing, contextualizing the orchestration; rules of play, guiding participants through performance of disrupted and unfamiliar forms of touch; 2) ensuring social and corporal safety; and 3) evoking dialogue, to express the experience in words – making the experience explicit in creative, embodied and reciprocal relation, through hosting on site. A performance host acts as an embodied interface, and dialogue with participants based on embodied, emphatic reciprocity.

All three experiments showed that human hosting seems to be essential. Furthermore, aspects of performance hosting can be replaced partially by participants hosting. Participants have shown to be able to 1) autonomously use and play with the orchestration, but less focus on context and performance of touch occurs, 2) support corporal and social safety as co-participants and in this aspect, fulfilling a role of ‘participant hosting’ and 3) engage in dialogue during and after a performance. The type of dialogue, however, differed. Participants were less inclined to take the time to reflect on the unfamiliar embodied experience and to express the unfamiliar embodied experiences in words, making the experience explicit, to discuss with others.

Current research building on the results presented in this paper, explore other design options for participant (self-) hosting to embrace embodied and empathic mirror-

ing, through dialogue and reflection. These new artistic orchestrations facilitate tele-matic experience of kissing, in New York, Los Angeles, Amsterdam and Seoul in 2020. These orchestrations explore possibilities for participant hosting in communities.

This paper calls for future design of disrupted social touch in merging realities to consider hosting processes of shared sense making to be part of the design. Such design should facilitate new forms of reciprocal embodied interaction, that support descriptive self-disclosure, dialogue and shared reflection on experience of social touch in merging realities.

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 Lancel/Maat (2009) Tele\_Trust, <http://www.lancelmaat.nl/work/tele-trust/>;  
 Lancel/Maat (2012) Saving Face, <http://lancelmaat.nl/work/saving-face/>;  
 Lancel/Maat (2014-) EEG KISS, <http://www.lancelmaat.nl/work/e.e.g-kiss/>.

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