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EERIK MANTERE

Smartphone Situation

Personal Smartphone Use
During Face-to-Face Encounters

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FOREWORD

> I investigate participation as a temporally unfolding process through which separate parties demonstrate to each other their ongoing understanding of the events they are engaged in by building actions that contribute to the further progression of these very same events. - Chuck Goodwin

My original focus in researching smartphone use in social situations was parental smartphone use and parent-child interaction. In 2013 there was no previous research on the topic. My first results in 2014 received some media attention in Finland but were portrayed as overly critical of parents. I merely wanted to describe interactional phenomena in situations of simultaneous smartphone use and face-to-face interaction—not to blame anyone for being a bad parent. In 2016–2018 I taught an online course on basis of social psychology at Tampere University. My responsibilities included the modules on social roles, social norms, and ethnomethodology—an approach consistently deemed to be the most difficult to understand by the students. I led online conversations on the central concepts of indexicality, reflexivity, and accountability and demonstrated the concepts in action through breaching experiments in the chatrooms. At times I felt guilty for misleading and confusing the students. To ease my guilt, I wanted to at least understand the concepts deeply enough myself, that I would actually be able to pass on something valuable to my students. Contemplating the core concepts of ethnomethodology, repeatedly and at depth, proved immensely useful. This was most true when formulating the new concept of Bystander Inaccessibility. I wish it, and the other new concepts of this dissertation, to inspire both new research and more socially intelligent design.

> There is no beginning of interaction,
> everything arises from something.
> Abstaining from action is an action of abstinence,
> everything is filled with meaning.
> Nothing comes from nothing.

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I thank my students for all the conversations and collective discoveries. However, the most gratitude I have for my responsible supervisor, and the leader of the Emerging Technologies Lab, Professor Atte Oksanen, whose immensely positive impact on me as a researcher, and as a person, cannot be exaggerated! All my remaining flaws and weaknesses, which are many, are entirely my own responsibility. I also want to thank my other supervisors, professors Johanna Ruusuvuori and Joël Zaffran, as well as my co-authors Dr. Nina Savela and Dr. Sanna Raudaskoski. I thank the pre-examinators, Adjunct Professor Airi Lampinen and Professor Emerita Vilma Hänninen, for invaluable comments for the introductory section of the dissertation. If time restrictions would have allowed, responding to their remarks more thoroughly, would have clearly improved the quality of this dissertation. Therefore, I again need to repeat: all the remaining flaws and weaknesses are entirely my own responsibility. I also thank the editors of the book where Article I was published, Professor Emerita Anja Riitta Lahikainen, Dr. Tiina Mälkiä, and Dr. Katja Repo; as well as the anonymous reviewers of the journal articles. I have special gratitude for the anonymous reviewers of the Smartphone Moves article. I did not expect to receive such expert feedback on a topic that to date has limited amount of conversation analytic research. If at any time either one of you want to collaborate, please contact me! I also want to say that my experience in publishing with MDPI was very positive. Both journals have good metrics in social sciences, and I believe they deserve them. Sometimes slowness is seen as guarantee for quality. This was not my experience. The journals were swift, but editors professional, and all anonymous reviewers were true experts, giving their feedback to the point, with good arguments supporting it. In addition to Emerging Technologies Lab, I have also been blessed to be part of the legendary Co-Operative Action Lab at the UCLA. I am in deep gratitude for the learning and support I have received from the whole lab community throughout the years, especially its leader Professor Emerita Marjorie Goodwin. Once again, my many remaining flaws and weaknesses are entirely my own responsibility. My semester in UCLA in 2018 was one of the most important moments of my professional life. I had a chance to learn analysis of embodied interaction from Professor Emerita Goodwin, and ethnomethodology and

conversation analysis from professors John Heritage and Steven Clayman. They set an example of intellectual curiosity and discovery that will never leave me, and for that, I am eternally grateful. I also thank my teachers in mindfulness, a practice that has helped me much through the years. The late Zen Master Thich Nhat Hahn, and the whole Plum Village international community; the inspiring Mata Amritanandamayi; the Daissen Zen community in João Pessoa, Brazil, especially the hard-working Monje Taishin and the warm-hearted Monje Chimon. I also want to thank my family: my sister, both my brothers, my mother, and my grandmother. We have had some challenges, but we have not forgotten how to love. On that note, I want to thank my native country, Finland. After living in many other countries as well, it has become clear to me, that without the Finnish welfare system, I would not be here. I have been immensely privileged and lucky, which also means, that there are countless people around the world, who would have had same capacities as me, but due to mere chance of being born in a country without such a welfare system, do not have the opportunity to study for a university diploma, let alone a double doctorate. I urge everyone to promote the Finnish welfare model around the world. A child does not choose where they are born. The only just world is where each child, around the world, has their basic needs met, equal access to health care and education, and equal opportunities to strive for any diploma. Last but not least, I want to thank my girlfriend Jessica, because she is right, I have been quite "chato" during these last phases of my doctorate, and she has been very patient.

In João Pessoa, Brazil, 16 November 2022

Eerik Mantere

ABSTRACT

Smartphone use is common also during face-to-face encounters. Portmanteaus like "phubbing" and "technoference" often feature in media and research, though they offer little more than the meanings of the words comprising them (i.e. phone & snubbing, technology & interference). Previous research suggests negative consequences resulting from smartphone use in social situations. Parental smartphone use predicts child behavioral problems and partner phubbing relationship problems. Less research has been done on how smartphones are engaged with in social situations. No systematization of embodied smartphone engagement previously existed. Less is also known of what, if anything, makes smartphones different than other potential distractions. This dissertation studies smartphone use in collocated encounters with ethnomethodological conversation analysis, quantitative techniques, and content analysis. It introduces three new concepts. Sticky media device depicts how smartphone use can lead to delays and pauses in conversation, and how relates to mutual understandings. Bystander Inaccessibility details how bystanders to smartphone use typically have no epistemic access to why, how, and for how long the device is being used. This obscures shared shared meaning, as meaning of each interactional event forms through its current context—of which the activity of the smartphone user is part of. Smartphone Moves presents a toolkit for analyzing embodied smartphone engagement, and its impact on interaction. Smartphones may challenge the formation of intersubjectivity by requiring finite interactive resources to be distributed between face-to-face and face-to-screen interactions. Gaze, conscious evaluation, and corporal orientation are at times relevant in both. Smartphone is a hub for more activities than any other daily object, yet its use typically gives the least cues on the activity being done with it. Adjustments of embodied smartphone engagement, however, also adjust conversational engagement, making multiple concurrent engagements intelligible. The dissertation suggests a negative correlation between phubbing and social intelligence, the improvement of which, might mitigate phubbing-related conflicts.

Keywords: smartphones; phubbing; bystander inaccessibility; face-to-face interaction; engagement; conversation analysis

RÉSUMÉ

L'usage des smartphones est omniprésent durant les interactions en face à face. Des termes tels que « phubbing » et « technoférence » sont souvent utilisés, bien qu'en tant que concepts, ils ne sont rien de plus que des néologismes qui combinent les significations des mots qui les composent. Les recherches antérieures suggèrent que les enfants de parents qui utilisent beaucoup leurs smartphones sont plus susceptibles d'avoir des problèmes de comportement, et les couples qui se "phubbent" sont plus susceptibles d'avoir des problèmes dans leurs relations. Moins de recherches ont été faites pour décrire comment les smartphones sont réellement utilisés dans des situations sociales. Aucune systématisation de l'engagement corporel avec son smartphone n'existait. Moins de recherches ont également été menées pour identifier ce qui fait des smartphones un genre spécial de distraction. Cette thèse étudie l'utilisation du smartphone dans des rencontres colocalisées avec l'analyse conversationnelle, les techniques quantitatives inspirées de l'ethnométhodologie, et l'analyse de contenu. Il introduit trois nouveaux concepts. La « Métamédia collante » décrit comment l'utilisation du smartphone peut entraîner des retards dans la conversation, et comment ce peut obscurcir l'intersubjectivité. « L'inaccessibilité des spectateurs » détaille comment les spectateurs de l'utilisation du smartphone ont généralement peu d'accès à pourquoi, comment, et pendant quelle durée l'appareil est utilisé. Cela obscure la construction d'une compréhension mutuelle. Les « Gestes smartphonesques » présente des outils pour analyser l'engagement corporel avec son smartphone, et son impact sur l'interaction. Les smartphones défient la formation de l'intersubjectivité en exigeant que des ressources interactives finies soient réparties entre les interactions en face à face et en face à l'écran. Cependant, nous ne sommes pas des victimes impuissantes de ce nouveau « métamédium », mais grâce à des ajustements observables corporelles, nous réglementons l'engagement avec le smartphone et la situation sociale. La thèse montre des preuves d'une corrélation négative entre l'intelligence sociale et le « phubbing », suggérant que l'amélioration de l'intelligence sociale pourrait atténuer les conflits liés au « phubbing ».

Mots clés : smartphones; phubbing; inaccessibilité des spectateurs; interaction face à face; engagement; analyse conversationelle

TIIVISTELMÄ

Älypuhelimia käytetään usein myös keskellä kasvokkaisia kohtaamisia. Uussanat kuten "phubbing" ja "technoference" ovat lyöneet läpi niin mediassa kuin tutkimuskirjallisuudessakin. Niistä ei kuitenkaan ole sellaista analyyttistä hyötyä, jota tieteellisiltä käsitteiltä voisi odottaa. Aiemman tutkimuksen mukaan älypuhelimen käytöstä muiden seurassa on laajoja haittoja. Huoltajien älypuhelimen käytöllä on yhteys lapsen käytöshäiriöihin ja pariskuntien älypuhelimenkäyttö ennakoi parisuhdeongelmia. Vähemmän tutkimusta on tehty kuvaamaan kasvokkaisten tilanteiden kulkua, joissa älypuhelimenkäyttö tapahtuu. Tämä väitöskirja on älypuhelimen käytön vaikutuksista kasvokkaisissa tilanteissa, ja siinä hyödynnetään etnometodologista keskustelunanalyysiä, sisällönanalyysiä ja kvantitatiivisia menetelmiä. Siinä esitellään kolme uutta käsitettä. Tahmea medialaite kuvaa vuorovaikutuksen takkuisuutta silloin, kun puhuja vuorovaikuttaa samanaikaisesti puhelimensa ja toisen henkilön kanssa. Sivustakatsojan pimento avaa kuinka älypuhelimen käyttöä sivusta seuraavilla ei ilman erillistä selontekoa ole pääsyä siihen mitä ja miksi laitetta käytetään. Tämä johtaa epäselvyyteen tilanteesta ja sen tapahtumista, sillä tapahtumat saavat merkityksensä tilanteen kautta. Puhelinasennot esittelevät menetelmän älypuhelimen käytön erittelylle perustuen käyttäjän kehonasentojen tarkasteluun. Älypuhelimet tuovat uusia haasteita kasvokkaisen yhteisymmärryksen luomiseksi ja ylläpitämiseksi edellyttämällä sellaisten vuorovaikutusresurssien osoittamista älypuhelimelle, jotka voivat olla tarpeen myös kasvokkaisissa tilanteissa. Älypuhelimet kuitenkin tarjoavat myös uusia välineitä kasvokkaisenkin yhteistoiminnan hallitsemiseksi puhelinasentoja vaihtamalla. Niillä voi muuttaa vuorovaikutuksen osallistumiskehikossa ja esimerkiksi pitää kiinni puhujanroolista toisen pyrkiessä puhumaan päälle. Puhelinasennoilla älypuhelimista voidaan hetkellisesti tehdä ensisijainen keskittymisen kohde ja niillä voidaan myös ehdottaa paluuta takaisin keskittyneeseen keskusteluun. Tutkielma osoittaa yhteyden sosiaalisen älykkyyden ja älypuhelimen käytön välillä, antaen vihiä mahdollisuudesta ehkäistä älypuhelinkonflikteja kehotietoisuutta ja sosiaalista älykkyyttä kehittämällä.

Avainsanat: älypuhelimet; puhelimeen uppoutuminen; sivustakatsojan pimento; kasvokkainen vuorovaikutus; keskustelunanalyysi

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ABBREVIATIONS

GSM	Global System for Mobile communication
US	United States of America
TED	Technology, Entertainment and Design
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SMS	Short Message Service
PS	Phubbing Scale
FoMo	Fear of Missing Out
GSP	General Scale of Phubbing
GSBP	General Scale of Being Phubbed
ICT	Information and Communication Technology
TDIS	Technological Device Interference Scale
TILES	Technology Interference in Life Examples Scale
TV	Television
UK	United Kingdom
TRP	Transition Relevance Place
EM	Ethnomethodology
CA	Conversation Analysis
M	Mean
SE	Standard Error
SD	Standard Deviation
CI	Confidence Interval
OLS	Ordinary Least Squares
PC	Pocket
TU	TableUp
TD	TableDown
HF	HandFace
BI	Bystander Inaccessibility
BH	BothHands
CSIT	Continuing State of Incipient Talk
SoT	State of Talk

XR   Virtual or Augmented Reality

ORIGINAL PUBLICATIONS

Publication I   Mantere, E., & Raudaskoski, S. (2017). Sticky Media Device. In A. R. Lahikainen, T. Mälkiä, & K. Repo (Eds.), *Media, Family Interaction and the Digitalization of Childhood* (pp. 135–154). Edward Elgar Publishing. https://doi.org/10.4337/9781785366673.00018

Publication II   Mantere, E., Savela, N., & Oksanen, A. (2021). Phubbing and Social Intelligence: Role-Playing Experiment on Bystander Inaccessibility. *International Journal of Environmental Research and Public Health*, 18(19). https://doi.org/10.3390/ijerph181910035

Publication III Mantere, E. (2022). Smartphone Moves: How Changes in Embodied Configuration with One's Smartphone Adjust Conversational Engagement. *Social Sciences*, 11(5). https://doi.org/10.3390/socsci11050219

1 INTRODUCTION

Smartphone use has been growing steadily throughout the world. Over 78% of world's population how has access to a smartphone, whereas in 2016, less than half did (Statista 2021). In united states smartphones are owned by 85% of people (Pew Research Center, 2021). In Nordic welfare societies like Finland, where the GSM network was first developed (Huurdeman, 2003), 98% of adult population owns a smartphone (DNA, 2021). Growing smartphone ownership has been accompanied by increase in the time spent on the device, and its role in organizing daily life. In France, 89% of adolescents feel maintaining friendships would be impossible without a smartphone (BVA Group, 2018). In the US, an average person spends four and half hours on their smartphone every day, and the number is predicted to rise (adjoe GmbH, 2021). This excludes time spent on actual phone calls, the original primary use case of mobile phones. In Finland, calling on the phone has in fact been decreasing in popularity already since 2010 (Traficom 2021).

The variety of apps available for smartphones have multiplied drastically. The significance of this may be elaborated with the concept of affordance, coined by Gibson (1977) as a perspective on the environment of humans and animals that holds relevant what the environment, including all its objects, affords to the animal, or what it furnishes the animal with. Unlike traditional mobile phones, which practically only afforded calling and texting, today's smartphones are mountains of affordances with over 3.48 million different applications in the Google Play Store alone (Appfigures, 2021). Social media applications are by far the most used, being three times more popular than other apps (adjoe GmbH, 2021). As people spend more and more time connecting with, and through, digital screens, concerns of screentime replacing or reducing the quality of face-to-face interactions have started to arise.

Public discourse around these concerns is fueled by popular commentaries on the edges of social sciences. Bestselling books like "Alone Together: Why We Expect More from Technology and Less from Each Other" by MIT Professor Sherry Turkle paint a dystopic picture of the direction the world is heading (Turkle, 2011).

Appearing in talk shows and TED talks, Turkle accuses smartphones of giving us "the illusion of companionship without the demands of friendship" (TED 2012). Steinder-Adair's bestseller, "The Big Disconnect: Protecting Childhood and Family Relationships in the Digital Age", goes through various risks smartphones and other screens pose to family life. The book's chapters outline the ethos. First chapter: "Lost in Connection: How the Tech Effects Put Children's Development at Risk". Second Chapter: "The Brilliant Baby Brain: No Apps or Upgrades Needed". Empirical research paints a more nuanced picture. Though many studies support the popular worries (e.g. J.-H. Kim, 2017; McDaniel & Radesky, 2018a; Stockdale et al., 2018), some statistically impressive analyses boast to have completely countered them (Modecki et al 2020). Modecki's provocative article "Tuning into the real effect of smartphone use on parenting: a multiverse analysis" however neglects the search of "real effects" by the usual means of a systematic meta-analysis, but rather relies on one single, although large, sample (n = 3659), with has its own particular choice of measures, and responses collected through a website of a single Australian media company. Also, the study in fact found a weak correlation between parental smartphone use and insecure parent-child attachment, but chose to downplay its importance, and rather emphasize the weak correlation found between parental smartphone use and parental warmth. These publications speak of polarization and use of exaggerating rhetoric in both public and academic discourses on smartphone use. This may make it hard for the public to realistically reflect on their smartphone behaviors, and rules and practices they might want to adopt for their families.

A meta-analysis on parental smartphone use and parent-child relationship, following the PRISMA guidelines for conducting systematic reviews, reports more complete and context-sensitive results (Knitter & Zemp, 2020). Firstly, echoing the structure of Steiner-Adair's book, the age of the child does seem to be related to, not only the amount of time the parents spend on their phones, but also to how the parental screentime impacts the parent-child relationship. However, the main message is clear: In the 21 papers analyzed in the review, a plethora of negative effects of parental smartphone use at all ages of the child were found. Interestingly, the same variables sometimes had opposite correlations in different cultures. Parental smartphone use was found to correlate positively with authoritarian parenting style in the U.S., whereas the correlation was negative in China (ibid. 2020, p. 33). The review also reported a contrast between parents' self-reports of their smartphone use and observational data—a result that might partly explain the difference between the results of Modecki et al. and most other studies. In an attempt for an objective look

on the issue, studies reporting positive effects of parental smartphone use were also looked for, and 7 such studies were identified. However, the reported positive effects were mainly restricted to parents' themselves, rather than the parent-child relationship per se. These included feeling relaxed or enjoying themselves while using their smartphones or experiencing some form of social support through digital interactions. Inclusion of such reports of indirect positive effects seemed unreasonable, considering the authors had excluded many papers on negative effects of parental smartphone use that did not show strong enough direct link between parental smartphone use and parent-child interaction *per se*. Overall, negative effects of parental smartphone use on parent-child interaction seem unquestionable, though some positive effects exist as well.

However, smartphone use in social situations is also raising questions outside of the parent-child framework. Public discourse has specifically identified adolescents as potentially "at risk" by excessive smartphone use (Healy, 2018; Yoree Koh, 2020). Some studies seem to support this (e.g. Davey et al., 2018; Franchina et al., 2018). However, many fearful discussions on this topic might also be part of a sort of a "moral panic", which are often raised around issues considering children and adolescent (Castaño-Vinyals et al., 2022; cf. Hunt, 1997; PR newswire, 2018; U.S. Food and Drug Administration, n.d.). As studies suggest smartphone use to potentially be an issue in populations as wide as married couples and the elderly (Wang et al., 2017; Zhang et al., 2021), there is likely to be something about smartphone use and social interaction in general that merits further inspection.

While smartphones clearly are something new, they also are just the latest phase in the reduction in the size of computers. As the means of mediated communication began to be based on digital technology, they entered a stream of exponentially faster transformations, depicted by such statistics as the "Moore's law", an observation by Gordon E. Moore about the number of transistors per computer chip doubling about every 18–24 months (Encyclopedia Britannica, 2019). As objects in our environment form an important part of the human interactive ecology, this dissertation studies the ways smartphones feature in face-to-face encounters, and the impact they might have for construction of meaning and intersubjectivity.

The focus of this dissertation is on solo smartphone use, distinct from joint use, such as when the smartphone screen is shared for instance to watch a video or to look at photos. Furthermore, it mainly, though not exclusively, focuses on asymmetrical

smartphone use, i.e. when the participants in a face-to-face encounter are engaging with their smartphones to differing degrees, and not situations where for instance everyone is absorbed with their smartphones. These situations, moments of asymmetrical solo use of smartphones, are here called smartphone situations, referring to Goffman's (1964) definition of social situations as settings of mutual presence, where behavior is mutually observable to one another. The thesis further presents a classification of personal smartphone use, distinct from occasions of "prosocial smartphone use", where the device is used to advance goals of the ongoing face-to-face interaction, like when doing an online search on something arising from the face-to-face conversation, what Brown et al. called a "searchable object" (2015). Though often simplified as completely negative, also the moments of personal solo smartphone use in social situations could be problematic, or unproblematic (Henriksen et al., 2020), especially when they include symmetry in engaging with alternative actions to face-to-face interaction (Tiilikainen & Arminen, 2017).

As Article II elaborates, others who observe smartphone use may not always know whether the use is in fact personal or prosocial. This reflects especially in the analyzes of articles II and III, which also provide information and methodology for understanding how social situations may fluctuate between understandings and manifestations of smartphone use as personal or prosocial, solo or joint, and symmetrical or asymmetrical. Recent work suggests we still lack clear conceptual, empirical, and methodological understanding of smartphones in social situations (McGregor, 2020). This dissertation contributes new concepts, new empirical results, and new methodology for increased knowledge on mobile digital media and their significance for social life.

1.1   Perspectives on Phubbing and Technoference

Because the main contributions of this dissertation are structured as new concepts, the following chapters present the formation and importance of the currently prevalent main concepts related to smartphone use in social situations. Two neologism portmanteaus rule the literature: phubbing and technoference. Phubbing is the more widespread term, with 659.000 Google results and 162 peer reviewed articles on Clarivate's Web of Science. Technoference has less clout, listing 36.600 results in Google and 68 articles in Web of Science (Google; Clarivate, n.d.-b,

2.8.2022). Because most research on smartphone situations is organized under these headings, and because this dissertation aims to offer better concepts for academics and other scientifically minded individuals to use, phubbing and technoference are examined in detail.

Considering its current academic popularity, "phubbing" has a surprising origin story. As digitalization threatened profits of print media, Australia's national dictionary, the Macquarie, hired the McCann marketing agency to come up with innovative ways for increasing sales. "Phubbing" was invented by McCann to convince potential customers that emerging new words necessitate purchasing new dictionaries—apparently even when those words are invented by the marketers themselves. The term was formed by combining "snubbing" and "phone", and defined as "snubbing someone in a social setting by looking at your phone instead of paying attention" (McCann Melbourne, n.d.-a, n.d.-b). As such, it seems to define phubbing as a phenomenon of asymmetrical solo smartphone use, while hinting at the use also to be personal, rather than prosocial. In its original formulation it assumes intention from the part of the "phubber", excludes all non-visual engagement with the phone, like haptic or auditory, and assumes that one could not look at their phone and still pay attention to ongoing conversation. This assumption has later been debunked (DiDomenico et al., 2018). The researchers who adopted the use of "phubbing" have rarely used it in its original meaning, which then begs the question, why use it at all? On the other hand, as the term has become widely known, it may serve a purpose—not of conceptual excellence—but as a shorthand for referring to the general area of negative consequences of personal smartphone use in the presence of others. With an increasing popularity of the term, its use may connect publications to relevant readership.

Technoference, which is a combination of words technology and interference, assumes no specific psychological states from the part of the user of a technological device. It however also presupposes negative effects resulting from the presence of technology. Technoference was coined in 2014 by then doctoral candidate Brandon McDaniel "to describe the everyday intrusions and interruptions in couple interactions that take place due to the technology devices and their always-on and ever-present nature." (US Fed News Service, 2014). It was first applied to technology-related harm to couple's interaction, and later to technology-related negativity in other types of close relationships as well.

In their meta-analysis Knitter & Zemp (2020) also mention the relevance of the concept of work-life balance in parental smartphone-use (see also Oksanen et al., 2021). According to one of the most influential theories on work-life balance, Clark's (2000) border theory, the domains of work and private life can be thought of as two different countries. They may be close or far from one another, and they may have strict or loose borders between them. When the domains are similar, i.e. when the roles and activities a person needs to enact in each of them are not too far from one another, weak borders facilitate work-life balance. When the domains are different, strong borders facilitate work-life balance. This raises the possibility that social life in general might be such: Weak borders between very similar domains of action facilitate well-being, but weak borders between different domains disturb balance and cause ill-being. "Technoference" does not account for this perspective. Similarly to older theories of work–life balance, technoference does not recognize the relevance of the types of different life-domains, virtual or in-vivo, the types of borders between them, and their dynamic interactions. Is it not conceivable that smartphones cause technoference when and only when, they function as a weak border between two highly dissimilar domains? A work role for instance may be very dissimilar to one's role at home, or a role as a parent may be very dissimilar to one's role on a date. This is reflected in some interviews in Radesky et al. (2016, p. 696):

> "I miss that 10 minute drive (home from work) .... Like, I prefer to keep it compartmentalized like this is home, then I go into workmode, and then I come home and then I'm back at home mode. I can't do both I just—I can't—like I'm bad at it you know. I'm irritated, I'm not getting my work done, you know I need to just like focus on what I'm doing.
>
> —Mother, 30s, works from home for technology company"

However, just as a phone set on silent mode may save one from an intrusion of work into an intimate family moment, one might be very unhappy to find that the phone's silent mode was guilty of having missed a call from a grandmother during a calm Sunday evening. Overall, both phubbing and technoference seem to offer little more than the combined meanings of the words that make them, i.e. they are not scientific concepts *per se*, but merely common portmanteaus. Similarly, to Hollywood paparazzies aiming to attract readership by combining Brad Pitt and Angelina Jolie into Brangelina, or Tom Cruise and Katie Holmes into TomKat, a researcher may attract readership by use of words like "phubbing" and "technoference". It is an open question whether this has impacted the relative reaches of different publications, though one may only hope that scientific work reaches its audiences

mainly by merit of its quality. Research on phubbing and technoference nevertheless convincingly list many harms resulting from the use of smartphones during face-to-face encounters. This new technology, that offers much that people appreciate, seem to have many negative side effects.

1.1.1 Short History of Phubbing in Academic Research

Scientific databases list nearly two hundred documents that include the word "phubbing" in title, keywords, or abstract (Web of Science = 177, Scopus = 197, 14.7.2022). The first academic publication that refers to the term is foreword for the second edition of "Interactivity: New media, politics and society" by Charles (2014):

> "Two years is a long time in the world of new media—a world of phubbing and selfies, of cyberbullying and neknomination, of bitcoins, Prism surveillance and Google Glass."

According to Scopus, the term then appeared in a German article "Gemeinsam einsam: Phänomen Phubbing" (Klein, 2014), which was based on a bachelor's thesis, and published in the "Newcomer Corner" of *Information – Wissenschaft & Praxis*. It included an accurate and critical description of the origins of "phubbing" (i.e. McCann marketing agency) in German, but the English abstract only described the study itself, and transformed the McCann's original definition of "snubbing someone in a social setting by looking at your phone instead of paying attention", to academic language (Klein, 2014, p. 335):

> "Phubbing – that is the inappropriate use of smartphones in private and public communication. It is a portmanteau derived from the English terms phone and snubbing, and describes the behaviour of occupying oneself with a smartphone while interacting with other people."

Sources are not included for the definition, suggesting it might be author's own making. It improves on McCann's definition, in as it does not define phubbing to definitively be a form of snubbing, hence leaving room to include moments of possibly unintentional lapses of attention towards one's interactional co-participants. It however leaves some unanswered questions. What constitutes "the inappropriate use of smartphones"? Who defines the "inappropriateness" in real life situations? Can phubbing also include situations where the phone is used to advance common goals, like when the "phubber" uses their phone to look up information on behalf of the "phubbed"?

Though still not properly defined, the term continued its academic adoption. A group of academics in Türkiye succeeded to publish an article "Determinants of phubbing, which is the sum of many virtual addictions: A structural equation model" in the *Journal of Behavioral Addictions*, regardless of having used McCann's social media campaign's webpage (http://stopphubbing.com) as a source for statistical claims at the first page (Karadağ et al., 2015, p. 60). The article defined phubbing as *"(…) an individual looking at his or her mobile phone during a conversation with other individuals, dealing with the mobile phone* [sic] *and escaping from interpersonal communication"*. It did not include sources for the definition. The authors mistakenly claimed that an *"update team"* of *"the famous Macquarie Dictionary"* created the term (Karadağ et al., 2015, p. 60). As no measures of phubbing existed, the authors created a 10 item Phubbing Scale (PS) using a Likert scale from 1 (never) to 5 (always). The items included statements on smartphone use such as "My eyes start wandering on my phone when I'm together with others", "I don't think that I annoy my partner when I'm busy with my mobile phone", and "When I wake up in the morning, I first check the messages on my phone" (Karadağ et al., 2015, p. 73).

Karadağ et al. then provided statistical evidence in support of a model where phubbing constitutes of determinants of mobile phone addiction, SMS addiction, social media addiction, internet addiction, and game addiction; mediated by gender and smartphone ownership (see Figure 1). The first research paper on phubbing, published in a high impact journal[1], or a journal with any impact factor for that matter, therefore largely missed the social aspect of the phenomenon. It addressed phubbing solely as a behavioral addiction. This early work may have significantly skewed the academic conceptions of "phubbing". Karadağ et al. (2015) did not reflect on snubbing only being snubbing, if ignoring the other person is done deliberately. Moreover, the article did not address how some occasions of smartphone use in social encounters end up being defined as phubbing, while others do not (cf. Henriksen et al., 2020).

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[1] The impact factor of the *Journal of Behavioral Addictions* for 2021 was 7.772, though it should be noted that the journal only entered electronic Journal Citation Reports in 2014, and at the time of the publication of the Karadağ et al. (2015), the journal's impact factor was 1.873 (Clarivate, n.d.-a).
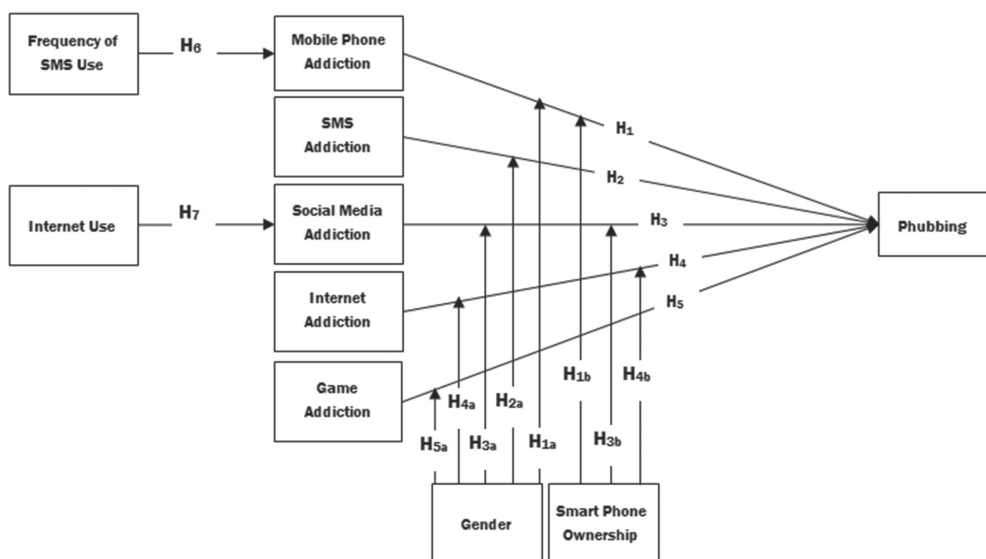
Figure 1. Structural equation diagram model of research and path coefficients in Karadağ et al. (2015, p. 67)

Though more convincing scales for measuring both phubbing and the experience of being phubbed have since been published (Chotpitayasunondh & Douglas, 2018a) in a journal with higher impact factor (Clarivate, n.d.-a)[2], Karadağ et al. (2015) still boast three times more citations (Elsevier, n.d.)[3]. From all the articles introducing a scale to measure phubbing, only Roberts' and David's (2016) scale on partner phubbing specifically[4], has more citations. Some researchers (e.g. Błachnio & Przepiorka, 2019; Çikrikci et al., 2019; Erzen et al., 2021) have opted to use PS, even after the much more valid phubbing scale by Chotpitayasunondh and Douglas (2018a) had been published.

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[2] Chotpitayasunondh and Douglas (2018a) was published in *Computers in Human Behavior*, which in 2021 had an impact factor (IF) of 8.957. *Journal of Behavioral Addictions* had an IF of 7.772 (Clarivate, n.d.-a). I do not suggest impact factors to perfectly reflect the significance and quality of journals, much less the individual articles published in them, but for the academic history of "phubbing", impact factors tell an important part of the story.

[3] Karadağ et al. (2015) have 118 citations on the the Web of Science. Chotpitayasunondh & Douglas (2018a) have 43 (Clarivate, n.d.-b). Checked in 26 June 2022.

[4] Roberts and David's (2016) "My life has become a major distraction from my cell phone: Partner phubbing and relationship satisfaction among romantic partners" is the most cited research on phubbing with 241 citations. Second is Chotpitayasunondh's and Douglas's (2016) "How 'phubbing' becomes the norm: The antecedents and consequences of snubbing via smartphone" with 232 citations, followed by Karadağ et al. (2015) with 118 citations (Clarivate, n.d.-b). Checked in 26 June 2022.
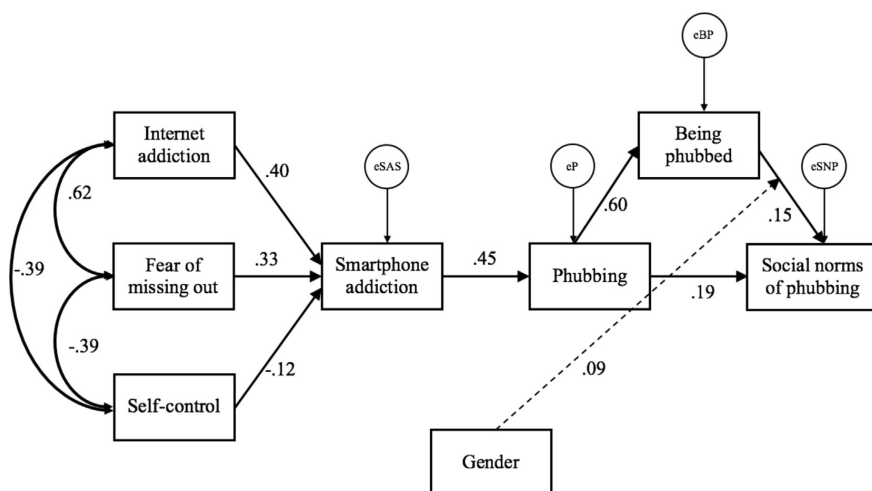
Figure 2. Phubbing model with standardized coefficients in Chotpitayasunondh and Douglas (2016, p. 14)

Before developing the new scales (Chotpitayasunondh & Douglas, 2018a), Chotpitayasunondh and Douglas (2016) explored how the prevalence of phubbing and being phubbed influenced perceptions on social acceptability of phubbing—introducing the social aspect severely lacking in Karadağ et al. (2015). Chotpitayasunondh and Douglas (2016, p. 15) separated addiction from phubbing itself, reporting that "Internet addiction, fear of missing out[5], and [lack of] self-control *predicted* smartphone addiction, which in turn *predicted* phubbing behavior and the extent to which people are phubbed." (footnote, square brackets, and italics added) (see Figure 2). They further found that "phubbing behavior and the experience of being phubbed also predicted the extent to which phubbing was perceived to be normative". Though the use of the term "norm" is somewhat confusing, as it likely is not suggested that not-phubbing would be sanctioned against, the findings paint a credible picture of how phubbing has become socially acceptable. Phubbing significantly also predicted the level of being phubbed. This may have played a big role in the growing acceptance of phubbing, which "may have become the norm as a result of both observed and personal behavior. People are phubbed, but they are also phubbers. In an environment where people are constantly

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[5] Fear of missing out (FoMo) can be defined as "the fears, worries, and anxieties people may have in relation to being in (or out of) touch with the events, experiences, and conversations happening across their extended social circles" (Przybylski et al., 2013, p. 1842).

switching from being the protagonists and recipients of this behavior (...) phubbing becomes seen as the norm" (Chotpitayasunondh & Douglas, 2016, p. 15).

Chotpitayasunondh and Douglas (2016, p. 16) describe a kind of cycle where people's perceptions of their own and others' frequent phubbing behavior may lead them to conclude that phubbing is a socially acceptable behavior. They cite research on reciprocity (Falk & Fischbacher, 2006; Keysar et al., 2008) in suggesting that the perceived social acceptability makes applying the "rule of reciprocity" to seem like a viable option, causing people to phub back at least the ones that have phubbed them. This echoes my own speculations in my master's thesis (Mantere, 2014) where I hypothesized—based on inspecting 665 hours of video recordings of homes of 26 families, a content analysis on the interactions, and several conversation analytic single case analyzes—that increased use of multimedia devices might cause a vicious cycle of decreasing quality and quantity of family interactions: When family members are spending more time on their devices, their responses to other family members' "bids" for connecting (cf. Navarra & Gottman, 2019) may more often be missing, delayed, or insufficient. This may then increase the appeal of personal multimedia devices as an option for time-use, compared to face-to-face interaction. If this actualizes as increased device use, even more missing, delayed, and insufficient responses are then likely to occur in face-to-face interactions, making individual device-use to appear even more rewarding in contrast to an unbecoming option of trying to initiate face-to-face interaction with a likely device-engaged family member (Mantere, 2014, p. 193).

When developing the 15-item Generic Scale of Phubbing (GPS) and the 22-item Generic Scale of Being Phubbed (GSBP) (2018a) (See Article II for the list of items), Chotpitayasunondh and Douglas highlighted the lack of reliable measures on phubbing, and noted, that although PS was reportedly based on exploratory factor analysis on items generated with a focus-group interview, it had important shortcomings. Construct validity, concurrent validity, convergent validity, discriminant validity, and test-retest reliability were not reported, and confirmatory factor analysis was not done to cross-validate the factor structure built with the exploratory factor analysis (Chotpitayasunondh & Douglas, 2018a, p. 6). They also criticized Karadağ et al.'s inclusion of items like "When I wake up in the morning, I first check the messages on my phone" and "My mobile phone use increases day by day". These are surely relevant to mobile phone addiction, but how could they be integral parts of an inherently social phenomenon like phubbing? Ironically, the close

connection between smartphone addiction and phubbing, though perhaps exaggerated by Karadağ et al. (2015), is also reflected in Chotpitayasunondh and Douglas's scale: Items like "I pay attention to my phone for longer than I intend to do so" and "I find myself thinking 'just a few more minutes' when I am using my phone" (Chotpitayasunondh & Douglas, 2018a, p. 8) clearly measure smartphone addiction, but have nothing to do with a social phenomenon like phubbing.

Therefore, phubbing still seems to be a somewhat problematic concept. A recent review (Garrido et al., 2021) identified 11 definitions of phubbing in academic literature, and mistakenly claimed Chotpitayasunondh and Douglas as having created the original McCann -definition (Garrido et al., 2021, p. 2):

> "Phubbing can be described as an individual looking at his or her mobile phone during a conversation with other individuals, dealing with the mobile phone and escaping from interpersonal communication" (Karadağ et al., 2015, p. 60)

> "Phubbing is the action of ignoring someone or multiple people during social events and using smartphones, to check or use Facebook, WhatsApp or other social media applications" (Nazir & Pişkin, 2016, p. 40)

> "Phubbing is the act when mobile devices lead people to ignore the ones beside them, and so cut the interpersonal communication" (Cïzmecï, 2017, p. 364)

> "Phubbing is a kind of social exclusion and interpersonal neglect and is used to indicate the interruptions in social relationships caused by mobile phone usage" (Roberts & David, 2017, p. 207)

> "Phubbing is the act of snubbing someone in a social setting by looking at your smartphone instead of paying attention" (Chotpitayasunondh & Douglas, 2018a, 2018b, p. 304)

> "Phubbing is the act of checking your smartphone in the middle of a real-life conversation with someone else and escaping from interpersonal communication" (Balta et al., 2020, p. 1)

> "Phubbing is the act of using a smartphone in a social setting of two or more people and interacting with the phone rather than with the other person or people present" (Blanca & Bendayan, 2018, p. 449)

> "Phubbing is the act when one person suddenly turns their gaze downwards and 'disappears' into their smartphone in the middle of a social interaction" (Aagaard, 2019, p. 2)

> "Phubbing refers to an individual giving more attention to their mobile phone when in face-to-face communication with another individual" (Çikrikci et al., 2019, p. 1)

> "Phubbing refers to adverse behavior that occurs in social situations when individuals maintain their focus on their mobile phones at the expense of a reduced focus on the interlocutor who may feel ignored or snubbed" (Kaczmarek et al., 2019, p. 7)

> "Phubbing means ignoring communication partners in co-present interactions by focusing on one's mobile phone" (Schneider & Hitzfeld, 2021, p. 8)

The definitions vary from scientific language in Kaczmarek et al. (2019) to downright poetry in Aagaard (2019). Though one would hope to be able to trust a review published in a journal with an impact factor of 3.776 (Clarivate, n.d.-a), Garrido et al. (2021) in fact extracted the definition of Kaczmarek et al. (2019, p. 7) from a preprint, found online with two different titles, and two different values for N. Even worse, the publication of this paper cannot be found either on the Web of Science or Scopus, and therefore seems to have never passed peer-review, and actually been published. Though Garrido et al. claim to only include peer-reviewed work (Garrido et al., 2021, p. 3), on top of Kaczmarek et al. (2019), they also cite the preprint version of Hinojo-Lucena et al. (2021) on how smartphone addiction and low self-esteem predict higher Instagram use (Garrido et al., 2021, p. 8), though this article was in fact later published in a peer reviewed journal. The review does not reflect on its use of preprints, and due to these clear errors, should be regarded with skepticism. Regardless of these shortcomings, in addition to presenting the varied definitions of phubbing, Garrido et al. (2021, p. 4) also include a helpful list of terms that phubbing research has so far considered in relation to the phenomenon, with the prevalence of terms like "addiction" and "satisfaction" conveying a more psychological, rather than a sociological perspective.

1.1.2   The Concept of Technoference

Technoference might be seen as a social spinoff of "technostress", a term coined in 1984 by clinical psychologist Craig Brod, who according to Ayyagari et al. (2011, p. 832) described it as "a modern disease caused by one's inability to cope or deal with ICTs in a healthy manner." Originally referring specifically to family life, technoference was then defined by McDaniel and Coyne (2016, p. 85) as "everyday intrusions and interruptions due to technology devices". It seems to suggest that technoference could apply to both solo and joint use, symmetrical and asymmetrical use, personal and prosocial use, as long as there is some form of unwanted element present, that would not have been introduced to the situation, without the presence of technological devices. The first study on technostress reported results from an

online survey of 143 women and found that women who reported more interference and interruptions from technology in their relationships, also reported more conflicts over technology use, as well as lower relationship satisfaction, more depressive symptoms, and lower life satisfaction. However, internal consistency of the Technological Device Interference Scale (TDIS) that the study used to measure the general frequency that "cell phones/smartphones, TV, computers/laptops, and iPads or other tablets get in the way of or even interrupt interactions" was below the commonly acceptable level (Cronbach's alpha = .67), suggesting that lumping these technologies together under a single concept of technoference, ignores some specific ways each of them may feature in social situations. Higher internal consistency was achieved with the Technology Interference in Life Examples Scale (TILES), in which the authors included items that were apparently invented by the authors themselves, rather than obtained through interviews with experts or focus groups (McDaniel & Coyne, 2016, p. 90):

> 1. During a typical mealtime that my partner and I spend together, my partner pulls out and checks his phone or mobile device.
>
> 2. My partner sends texts or emails to others during our face-to-face conversations.
>
> 3. When my partner's phone or mobile device rings or beeps, he pulls it out even if we are in the middle of a conversation.
>
> 4. During leisure time that my partner and I are able to spend together, my partner gets on his phone, mobile device, or tablet.
>
> 5. My partner gets distracted from our conversation by the TV.

No exploratory or confirmatory factor analyzes were reported on TILES, as were no results of construct validity or test-retest reliability. It is unclear why the particular questions comprising TILES would be the best ones to measure technoference. The lumping together of "phone, mobile device, or tablet" in Question 4 further challenges the face validity of the questionnaire as it might work to hide device-specific differences. Also, the eventual arbitrary loadings of TDIS and TILES (McDaniel & Coyne, 2016, p. 92) within the conceptual model (see Figure 4) raises questions about the legitimacy of invented examples in TILES as a crucial part of the conceptual model of technoference (see Figure 4). However, on the whole, the study reports a somewhat credible pathway of ICT use predicting conflicts over technology use in the couple, which predicts lower relationship satisfaction, which in turn may result in lower life satisfaction and possibly even depression (McDaniel & Coyne, 2016, p. 92).
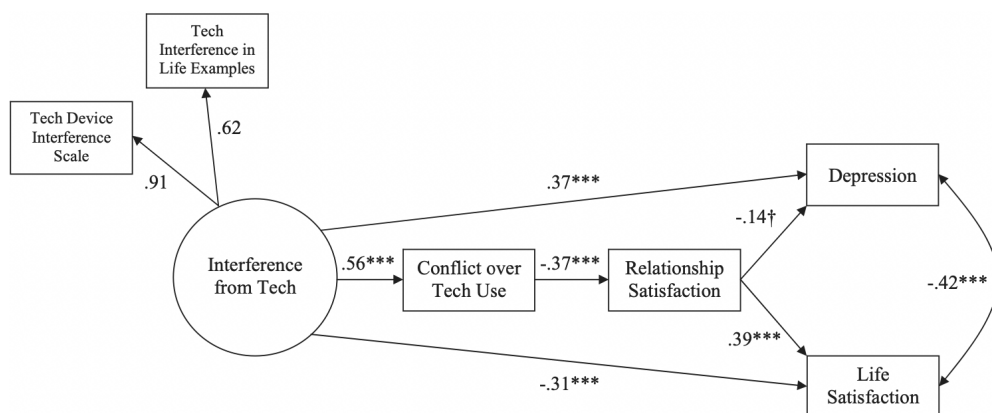
Figure 3. The model of technoference in couple's relationships, with standardized path estimates, by McDaniel and Coyne (2016, p. 93). ***p < .001, †p < .10.

Later research by McDaniel and Radesky (2018b) studied parents of 170 families and measured how occupied they were with activities and thoughts related to their phones and the general level of technoference in relation to their children. An older self-report measure for traditional mobile phone use was used with a version of TDIS modified for parent-child relationships (McDaniel & Radesky, 2018b, p. 102): "On a typical day, about how many times do the following devices interrupt a conversation or activity you are engaged in with your child?" The devices included were cellphone/smartphone, television, computer, tablet, iPod, and video game console. Responses were on a 7-point scale from 0 (none) to 6 (more than 20 times). The operationalization of the measure was problematic and internal consistency was not calculated (McDaniel & Radesky, 2018b, p. 102), as the authors "expected there to be variability (as opposed to consistency) within individuals' responses across these various devices", which raises questions on the usefulness of the term technoference altogether. The study found that focusing on one's mobile phone predicted technoference in parenting, which again predicted the degree to which parents evaluated their children to exhibit behavioral problems (see Figure 5). Externalizing and internalizing behavioral problems were studied separately and yielded similar findings. Though suggesting modern technology to play an important role in family relations, traditional cellphones and modern smartphones were unfortunately treated interchangeably in the study—a choice that seems questionable considering the huge amount of varied affordances of smartphones in relation to traditional mobile phones, and that the original use cases of traditional mobile phones have become minority activities in smartphone users (see Chapter 1).
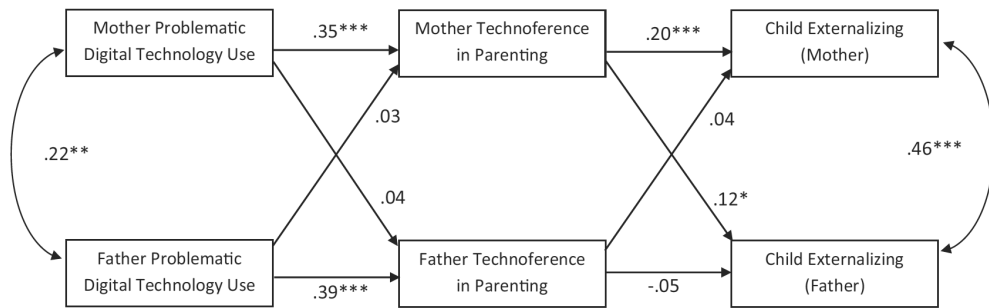
Figure 4. Model of mobile phone use (termed "Digital Technology Use" in the model) predicting technoference, resulting in higher likelihood of child behavioral problems in (McDaniel & Radesky, 2018a, p. 105). Note. ***p < .001. **p < .01. *p = .06.

1.2   Smartphones, Well-Being, and Technology Research

There are also studies on smartphone situations that do not refer to buzzwords like phubbing and technoference. Considering the shortcomings of both concepts, this might be a welcome reality. Lee et al. (2014) point out worrying results of high smartphone use and technostress being related to psychological traits like social interaction anxiety, materialism, and the need for touch. Aktipis et al. (2020) look at symmetrical smartphone use in social situations through the lenses of game theory. They relate smartphone situations to a "stag hunt game", where two people must choose between working together for a large payoff, like hunting for stag, or working individually for smaller payoff, like hunting for rabbits. Hunting for rabbits is in a way safer, because it can be accomplished even if the other person does not choose the same option as you. Aktipis et al. (2020) suggest that putting down your smartphone in order to engage in face-to-face interaction is similar: when two people are engaged in smartphone use in a collocated situation, they might both actually prefer the "higher payoff" of face-to-face interaction. However, as neither participant wants to risk having nothing to do while waiting to see if the other person chooses the same, neither puts down their smartphone. Concepts like "nomophobia", which according to Yildirim and Correia (2015) is an abbreviation for "no-mobile-phone phobia", coined in a 2008 study by the UK Post Office, may partly explain the appeal of not putting down ones smartphone. Yildirim and Correia (2015) prepared and validated a scale for measuring nomophobia, and identified nomophobia to consist of four factors: not being able to communicate, losing connectedness, not being able to access information, and giving up convenience.

Kim (2017) surveyed 930 respondents in the U.S., identifying two main routes people use to try to alleviate their loneliness: smartphone use driven by escape motivation, and face-to-face interaction driven by relationship motivation. The latter was found superior to the former in many ways, most significantly by smartphone mediated communication increasing the risk of problematic smartphone use, while decreasing the perception of received social support from social networks (see also J. Kim et al., 2015). This research suggests, that regardless of thousands of online "friends" and multiple emojis shared with them, smartphone-mediated interactions are not likely to replace face-to-face interactions as real sources of social support, which has long been considered a crucial determinant of human well-being, even trumping the importance of not smoking in predicting life-expectancy (Feeney & Collins, 2014).

Engineers have recognized social scientists' worries of smartphones taking over face-to-face interactions (Liu et al., 2014, p. 811) and prepared technological solutions for recognizing moments of likely face-to-face interactions to address the issue (Liu et al., 2014; see also Mantere, 2020). Others have explored the possibilities of—not just mitigating the socially hampering effects of engaging with devices—but the possibility of design to facilitate positive social encounters. Mitchell and Olsson (2019) investigated over 1000 digital and non-digital designs for their ability to encourage interaction between strangers. They recognized five main approaches: displaying encouragement to approach strangers, bringing attention to the space in between people, providing opportunities for people to easily face towards each other, providing opportunities for discrete contributions to spectacles while also allowing experimentation and collaboration, and creating sensory filters that help people to see each other. Furthermore, Jarusriboonchai et al. (2014) specifically studied mobile applications' possibilities to encourage face-to-face interaction through "digital tickets-to-talk" that would inform people in each other's physical vicinity of who and what are around, augment their self-expression, or feature online interactions that encourage face-to-face interactions. Though Olsson et al. (2019) lament the lack of studies on user interface design that would diminish smartphone disruptions to face-to-face interaction, this should be considered a real possibility, were the relevant companies ever to make it into a priority. Furthermore, the review (Olsson et al., 2019) recognized growing interest in academic research and design for technology to facilitate, invite, and encourage collocated interactions in general. Somewhat in line with this emerging direction, interactionally oriented technology research by Brown et al. (2013) and Laurier et al. (2016) used an innovative method of simultaneous filming of participants and screen recordings of their smartphone

use to analyze how smartphone use is interleaved with face-to-face interaction. Their analyzes of the use of maps and internet searches depict how gestures on touch screens may serve a 'double duty' as both interacting with the phone's interface, and as resources for activities taking place in the face-to-face interaction.

Though humans are well able to participate in several simultaneous courses of action (Goffman, 1963; Haddington et al., 2014; Nevile et al., 2014), smartphones are special in that they are "metamedia" (Jensen, 2016), working as hubs for a variety of other activities of staggeringly different categories. Though joint use of maps and internet searches occur, personal smartphone use still constitutes most of smartphone use (see Chapter 1). When an interactional partner perceives a member of a social situation engaging in smartphone use, they still might know nearly nothing of the activity the other is engages in. Perhaps at least partly due to their greater mobility and smaller screen size, in comparison to tablets and laptops, and certainly due to them being considered the most private of these devices[6], rising popularity of smartphones have given rise to a new phenomenon of "shoulder surfing", a peculiar nuisance of the Smartphone Era (Eiband et al., 2017; Oxford Dictionary, 2019; Saad et al., 2018). This has also sparked designers to seek solutions to so called "shoulder surfing attacks" where a password is unintentionally leaked to an ill-willed bystander (Sun et al., 2018). Because the unsolicited gazing of someone else's smartphone screen is typically seen as a breach of social norms, bystanders to smartphone use face added challenges in gaining epistemic access to the category and phase of the activity the smartphone user is engaged in. This makes smartphone use in face-to-face encounters different from other types of multiactivity in social situations. Article II of the dissertation coins the term "Bystander Inaccessibility" to shed light on this phenomenon.

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[6] Unlike laptops, smartphones typically allow only one user account to be created, hinting to the way the manufacturers have imagined the devices to be used. Private messaging mainly takes place through smartphones (Kaspersky Lab, 2018). Although mobile tablets are also able to serve as mobile wallets, they play this role so rarely, that they are not even included in mobile payment reports. Mobile payments on smartphones on the other hand are common, and have been predicted to nearly double from 2020 to 2025 (Statista, 2021, 2022). Smartphones, therefore, not only hold records of our private conversations, but very often also our money. This might increase the perception of them as more private than tablets and laptops.

1.3   Interactionist Research on Smartphones

Some interaction researchers, aiming to recognize and describe the ways social situations and interaction is organized by specific ways of speaking and behaving, have also investigated smartphone use relevant to smartphone situations. Licoppe and Figeac (2018) used similar methods to Brown et al. (2013) and Laurier et al. (2016) to study smartphone use while driving, in an attempt to recognize how it interacted with traffic light stops. They found that disengagements from smartphone use were organized in relation to what are called "transition relevance places" in the interactionist literature. These are moments of possible completion of a turn of speech, where other speakers may take the turn without being considered as interrupting anyone (Sacks et al., 1974). Though TRP's originally referred to how interaction is organized between humans, Licoppe and Figeac (2018) recognized similar moments in user-smartphone interaction. They found that the use of smartphones while driving and stopping into traffic lights was related to the affordances (Gibson, 1977) of the user interfaces of the smartphone applications. The relevant differences were in how much the interfaces proffered moments of suitable shifts of attention, i.e. the frequency of the sorts of user-smartphone TRP's, emerging in interaction with them. Another study found that people who use smartphones in public transports organize their gaze shifts into and away from the device also in relation to the structure of the activity with their smartphone—not only in relation to the environmental events in or outside the bus (Figeac & Chaulet, 2018). These studies suggest that interactive structures are formed in peoples' use of their smartphones. Those structures include places that are more suitable for disengagement, and places that are less so. Because this is also how human interaction is organized (Sacks et al., 1974), it seems likely that face-to-face interactants who engage in personal smartphone use while also involved in social encounters with co-present others, will find the most suitable moments for shifts of engagement to not always coincide between the face-to-face and face-to-screen interactions. Article I in this dissertation coins the term "Sticky Media Device" to shed light on this phenomenon.

Raclaw et al. (2016) studied the ways in which mobile phones may be used as resources in shared projects in face-to-face interaction. Situations occur, where an emerging topic of conversation, can be visually brought to be present, by showing photos or messages on a smartphone. Raclaw et al. demonstrated, how such episodes provide more direct access to the topic of conversation, than would otherwise be

possible, and ingeniously depicted, how this can be utilized specifically in managing the risks related to complaining about something or someone. They also showed, how the temporality of a social situation can organize, to give space for retrieval of smartphone content through insertion of side conversations, while the smartphone search is ongoing. Robles et al. (2018) studied, how people present themselves as "ordinary users" of technology and social media. The conversational practices they describe demonstrate certain uses of new technology and social media, such as smartphones, dating apps, and Instagram, to be seen as normatively relevant, therefore having potential "appropriate" and "inappropriate" ways of using them. Perhaps the most relevant previous study for this dissertation, is DiDomenico et al. (2018) analysis on communication practices used to manage asymmetric solo mobile phone use, while engaged in an ongoing conversation. They analyzed episodes where audible chimes or vibrations alerted users to attend to their phone, and how it related to the current identity of the user in the ongoing social situation. This work emphasizes the importance of timing and conversational context in mobile phone use and brings much needed nuance to many more crude depictions of such situations DiDomenico et al. (2018) demonstrated how mobile phone users could sustain their engagement with the ongoing face-to-face activities, as a recipient or speaker, and also how the contents of the phone could explicitly be incorporated into the face-to-face talk, and be collectively embraced as providing the next topic of conversation. The research also shows a practice of making hidden mobile phone use accessible to others through verbal accounting (DiDomenico et al., 2018, pp. 31–34). Article III in this dissertation contributes to this line of work by developing classification of embodied smartphone engagement to depict the nuanced ways peoples' orientation towards their smartphones and conversational partners can be adjusted in degrees, moment to moment.

1.4   Theoretical Background of the Dissertation

1.4.1   Ethnomethodology

Though Article II uses quantitative analysis and content analysis, all the articles of the dissertation are influenced by ethnomethodology. Ethnomethodology (EM) aims to discover the methods used by people to both understand and produce the shared social realities they inhabit (S. E. Clayman, 2015; Heritage, 1984). It is the

study of the means by which members of society co-produce meaningful social action with each other. EM primarily studies people's daily lives and the meanings they themselves structure into their actions. It emphasizes that each event in interaction derives its meaning, not only from its form or content, but also from the setting it takes place in[7]. This is the clearest meaning of Garfinkel's concept of indexicality, i.e. interaction deriving its meaning through its context (S. E. Clayman, 2015, p. 4867; Garfinkel, 1967; Given, 2022a; Heritage, 1984). Garfinkel did not coin the term. It was previously used by linguists to refer to indexical expressions, like "you", "this", "that", which refer to their immediate context (Given, 2022a). Garfinkel re-defined the term to characterize an omnipresent quality of all linguistic and non-linguistic signs, i.e. language and action[8]: Meaning is never fully "settled". Meaning is always partly ambiguous, because it can only manifest in a context, and no two contexts can ever be identical. Context, i.e. the occasion of appearance of some action or project in interaction, is an integral part of the meaning of the action or project itself (Garfinkel, 1967; Pollner, 1991). Like the linked and interpenetrating existence of Yin and Yang in Taoism (Mou, 2009), action and context include parts of each other. The resulting omnipresent partial ambiguity of meaning leads to a kind of ethnomethodological humanism, in a sense that individuals are seen as active agents with some undeniable freedom. They have the power to coordinate their responses, reframe unfolding social situations (e.g. S. E. Clayman, 2013), and re-interpretate and pivot the ongoing conversation towards new directions (S. Clayman & Raymond, 2015). In ethnomethodology, people are not considered to produce action by merely applying the social norms they have previously internalized (S. E. Clayman, 2015, p. 4866; Heritage, 1984).

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[7] It might be possible to trace this idea from Garfinkel to Alfred Schutz (Garfinkel, 1967; Heritage, 1984), from Schutz to Edmund Husserl (Barber, 2022), and from Husserl (Lau, 2016), to the Buddhist concept of "emptiness" (Hanna, 1995), most famously expressed in the Heart Sutra: "form is emptiness and emptiness is form", i.e. form can only manifest through its context, and context only manifests through forms. A notion similar to "emptiness" is also addressed in Gibson's (1977) theory of affordances, which stipulates that objects have their qualities actualized in relation to agents. A large stone with a flat surface is "a table" through its affordance of "I can be written upon", only in relation to an agent with an ability of "writing" (cf. Greeno, 1994). Modern Buddhist philosophy calls emptiness "interbeing" (Academy of Spirituality and Professional Excellence, 2007; Jones, 2020; Nhất Hạnh, 2008), perhaps in order to avoid misunderstandings of emptiness, such as Lau (2016) pointed out in Hegel's Lectures on The History of Philosophy in 1822–1830.

[8] Obviously visual non-linguistic signs, like in visual art, also can be looked at from the perspective of indexicality, but Garfinkel was focused on signs used in mundane social interaction.

Reflexivity links closely to indexicality, both in meaning and origin story. Like indexicality, it already had a widely recognized meaning before Garfinkel, but was transformed by him to something more fundamental (S. E. Clayman, 2015; Hollander & Turowetz, 2022). Reflexivity was first used in the 1500's to describe reflecting surfaces, and then adopted by philosophers in the 1600's to describe the mind turning back towards itself (Oxford English Dictionary, n.d.). George Herbert Mead was one of the first social scientists to use the term, defining it in "Mind, Self, and Society" as the "turning back of experience of the individual upon himself" (Babcock, 2005; Mead, 1934; Oxford English Dictionary, n.d.). This still remains the main usage of the term, which in social sciences typically now means the responsibility of the researcher to reflect upon his own role in the research process (Babcock, 2005; Given, 2022b). Talcott Parsons, who was Garfinkel's teacher, is credited as the first to adopt the term as a sociological concept *per se* (Heritage, 1984; Levi, 2005). For him, it meant people in modern societies being conscious of what they are doing, and being able to give accounts for their actions. Gouldner, also Parsons' student, coined the term "reflexive sociology" to mean a kind of transformative sociological enterprise that builds, applies, and develops understanding of the world, and of itself, in order to help humanity realize its collective goals (Levi, 2005).

According to Pollner (1991, p. 372), Garfinkel's reflexivity is twofold. Endogenous reflexivity addresses the character of interactions being designed in relation to their context[9], while also being perceived as context for the interactions that follow them (S. E. Clayman, 2015, pp. 4867–68; Garfinkel, 1967; Heritage, 1984; Hollander & Turowetz, 2022; Pollner, 1991, p. 372). This endogenous reflexivity has a dual nature: the social behavior produced by participants reflects back to the interaction itself, and participants' understandings of the interaction so far—the current situation or "local context"— reflects back as well (S. E. Clayman, 2015; Hollander & Turowetz, 2022; Pollner, 1991, p. 372). This is because any understanding that one has about the situation in which they interact, is already embedded into their interactive contributions. How we behave in a situation, shows others how we understand that situation. Therefore, both our actions and understanding become the context for the social conduct that follows. The way others behave next, shows us how they then understood us to have understood the situation. This raises a question: how does the person who acts first know how others see the situation? If the understanding of

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[9] Interaction is designed to "fit" the context, even when it is designed to contest it (e.g. S. E. Clayman, 2013; Hollander & Turowetz, 2022).

others' understanding is as crucial for interaction as ethnomethodology suggests, and if understandings are displayed through social conduct, how can the first actor know what to do? The answer is twofold: 1) no-one ever really finds themselves in a situation without a context. One's spatiotemporal location always conveys at least some context to everyone involved with that person (country, building, time of the day, online platform, etc.). 2) There is never really a social situation where others would not already be displaying their understanding of the situation in some way. This is firstly because "not acting" is also a social behavior (cf. Schegloff, 2010). Secondly, constituting shared understanding of a situation takes continuously place through embodied participation in it (Goffman, 1963; C. Goodwin, 1979, 1981, 2000, 2006). Our fellow citizens at the bus stop do not need to encounter us head on to explain to us that they understand us to be standing on an appropriate distance from them—their avoidance of looking at us and other ways of "civic inattention" already display this to us (Goffman, 1963).

Perhaps surprisingly, more than this truly new meaning of reflexivity that Garfinkel imbued the term with, Pollner (1991, p. 372) emphasizes the significance of what he calls "referential reflexivity". Pollner's "referential reflexivity" however seems to be nothing more than the usage of ethnomethodological understanding of "endogenous" reflexivity in the process of common researcher reflexivity, i.e. the researcher reflecting on choices and activities they undertake in the process of producing the research results, and the interpretations of the results (Given, 2022b; Levi, 2005; Lewis-Beck et al., 2022). Pollner (1991), and those following his thinking (e.g. Lynch, 2018; Lynch & Wong, 2016), seem to worry that EM has been dedicating too much effort to studying other things than EM itself (cf. Maynard & Clayman, 2018), i.e. sociology of science with ethnomethodological perspective. Pollner's (1991) "radical reflexivity", reflecting on EM research as a reflexive enterprise, has not been the main focus. Not discrediting the importance of sociology of science, in the context of rapidly developing digital technologies remaking our social behaviors (see Chapter 1), climate change, and the threat of world war three, rooting for less emphasis on studies of phenomena themselves, and more emphasis on meta-studies on the act of studying, seems inappropriate. "Reflexivity" in this dissertation is therefore addressed as what Pollner (1991) calls endogenous reflexivity, and what generally in EM is just called reflexivity.

The third fundamental premise of ethnomethodology is the norm of accountability. Garfinkel's classic breaching experiments, a series of assignments he gave for his

students, demonstrate it by revealing how it can be breached. Students were asked to work as experimenters (E) and to enact unusual interchanges with their family members, acquaintances, or complete strangers as subjects (S). The S were unaware that they were participating in a sociological study. It should be noted that these experiments were done in the 1960's, when research ethics were very underdeveloped from today's standards. In one such experiment, the E invited a total of 253 S into a game of ticktacktoe. The S were asked to mark the first move, which the E then erased, marked onto another location, and consequently made their own mark. Garfinkel instructed his students to avoid giving out any signs that what they were doing would in any way be unusual, and to make note of any surprise, bewilderment, irritation, humor, demands of explanation, or other notable responses the S might display (Garfinkel, 1963, pp. 201–202). Accounts for the understanding of the events were later collected from S. They fell into three classes: abandonment of ticktacktoe as the assumed order of the situation, and deciding on a new order; abandonment of ticktacktoe as the order, without deciding on a new order; and maintaining ticktacktoe as the assumed order, but interpreting the experimenter's actions as cheating, sometimes reciprocated with a consequent cheating move: "you think you can win that way [sic] so I'll put in all my marks now and win." (Garfinkel, 1963, pp. 202–203). Three out of four subjects "were motivated immediately by the wrong move to try to understand what was going on" (Garfinkel, 1963, p. 205).

Half of the subjects "treated the move as a gesture with hidden but definite significance. Subjects were convinced that the experimenter was 'after something' that he was not saying and whatever he 'really' was doing had nothing to do with ticktacktoe. He was making a sexual pass; he was commenting on the subject's stupidity; he was making a slurring or an impudent gesture" (Garfinkel, 1967, p. 72). In another study E were instructed to converse with acquaintances or friends as if commonplace remarks were not clear to them, and insist S for clarifications:

"The victim waved his hand cheerily.

(S) How are you?

(E) How am I in regard to what? My health, my finances, my school work, my peace of mind, my...?

(S) ((Red in the face and suddenly out of control.)) Look! I was just trying to be polite. Frankly, I don't give a damn how you are." (Garfinkel, 1967, p. 44).

Another experiment, utilizing student counseling, recruited ten S in what was said to be research in "alternative means to psychotherapy" (Garfinkel, 1967, p. 79). The

"counselors" were in fact research assistants. S were invited to recount background of some serious problem they would like advice on, and solicit the "counselor" for "yes" or "no" answers. S were promised the counselors would give advice to the best of their ability, but according to this experimental treatment, they could only answer with "yes" or "no". In fact, the answers were randomized, and thus completely irrelated to what the subjects had been talking. The subjects inquired advice on important topics such as whether they should change their major, or to break up with a partner that does not follow their religion. However, the random production of the "yes" and "no" answers provided no difficulties for the subjects in going through the long series of exchanges, as well as summarizing and evaluating the "advice" as they went along. The S continued to treat the answers to truly be motivated by their questions, and came up with explanations for incomplete, inappropriate, and contradictory answers; such as the counselor using such an answer to solicit more information; that previous answers had changed due to something that the counselor had learned subsequently; or that the counselor was using the seeming inconsistency as a technique to solicit "the real question", one S did not ask, but should have asked, and so on (Garfinkel, 1967, pp. 89–92).

These experiments demonstrate that people in general hold themselves, and others, accountable to behave with situated intelligibility (cf. Heritage, 1984, 2018). We expect any observable conduct to be provided in a way that it is recognizable by the aspects of the conduct itself, combined with the aspects of the situation in which it is produced. One aspect of the situation are the background understandings which are expected to be shared in the situation. Breaching this expectation, like when Garfinkel asked his students to behave as if they were paying guests in their own parents' house (Garfinkel, 1967, p. 47), is typically met with annoyance and demands for explanation. This shows how the underlying structures of social interaction are a moral affair (Garfinkel, 1963, 1967; Heritage, 1984). Furthermore, when there is a possibility of seeing social events as abiding to the norm of accountability, intelligible explanations are sought for them, even if the events would in fact be empty of such benevolent rationale.

EM was developed to depict the structures in play in naturally occurring social encounters. It generally considers studies utilizing experiments, surveys, and interviews first and foremost to provide information on experiments, surveys, and interviews. This is because they all aim to study what Livingston (2008) called the "hidden order" of social life, but inevitably produce their data through "the

witnessable order", i.e. the actual meaningful social behaviors in those situations, observable to both the participants as well as EM researchers. Ecological validity, or the degree to which the inferences made from the studies of the hidden order can be assumed to apply in the witnessable order, is always questionable. Ethnomethodology itself is however not foreign to experiments. Garfinkel's famous breaching experiments were fundamental to founding the field (S. E. Clayman, 2015, p. 4867; Garfinkel, 1967), and later researchers in the tradition have also occasionally applied EM lenses to experimental study designs (e.g. Heritage et al., 2007). It is likely that at least some of the strength of criticism toward traditional research methodologies in the founding texts of ethnomethodology (Garfinkel, 1967) reflected the drastically asymmetrical power relations between the emerging ethnomethodological enterprise and the traditional ways of doing social sciences at that time. It might have been more a way of establishing credibility and carving out a legitimate place for EM in the academia—a defense more than an offense (S. E. Clayman & Heritage, 2018; Heritage, 2018). In the context of this dissertation, different methods are thought to be complementary rather than competitive.

1.5   Co-Operative Action and Digital Mobile Technology

The concept of co-operative action developed through interactions between well-known conversation analysts Charles and Marjorie Goodwin, and Charles Goodwin's father, Chil. After a stroke Chil had his vocabulary reduced to mere three words: "yes", "no", and "and". Within the framework of previous dialogical theories of speaking, like those of Volosinov as well as Goodwins' own teacher Erving Goffman (C. Goodwin, 2006), Chil should have been nearly fully impaired in ability to produce speech—rendering him practically a non-participant in conversations. However, through careful analysis of embodied everyday interactions with Chil, the Goodwins showed that "rather than being located within a single individual, the speaker here is distributed across multiple bodies" (C. Goodwin, 2006, p. 28). Chil's was an extreme case, but the claim of speaker being "distributed across multiple bodies" was not only restricted to people with reduced vocabularies (C. Goodwin, 1979). Anyone producing talk in social situation is in fact, not merely mouthing the words they independently choose to vocalize, but rather manifesting vocally a co-operative process of meaning making, continuously being shaped and reshaped by minute modifications in all of the available semiotic fields of that interactive setting (C. Goodwin, 1980, 1981, 2000)—vocal, visual, haptic, and other (Cekaite &

Goodwin, 2018; M. H. Goodwin et al., 2012; e.g. Kaukomaa et al., 2015; Rossano, 2012). Co-operative action suggests, that to a degree, the speaker always speaks the words of everyone present. The idea was already to a degree addressed by Schegloff's concept of "recipient design", though Schegloff did not include in it the ongoing embodied adjustments of participation, central to the concept of co-operative action. He however did recognize the significance of corporal being in engagement in conversation (Sacks & Schegloff, 2002; Schegloff, 1998). Article III in this dissertation introduces the concept of "Smartphone Moves" to contribute to the line of research on co-operative meaning making and embodiment.

Some previous CA research on digital mobile technology have also taken this perspective. Specifically Didomenico, Raclaw, and Robles have developed this line of analysis in relation to affordances of traditional mobile phones (DiDomenico et al., 2018; Didomenico & Boase, 2013; Raclaw et al., 2016), as well as selfies and social media use in smartphones (Robles et al., 2018). The data for these studies were recorded between 2004 and 2014 (DiDomenico et al., 2018, p. 9; Robles et al., 2018, p. 153), a transition period where smartphones were still entering common usage. Though some of the practices described, e.g. relating to text message chimes, have likely already changed, or even become virtually extinct, these studies serve both as important examples of how to study embodied engagement with mobile digital devices, as well as records of the speed of change in social practices relating to our most central communication technologies. This exemplifies the significance of today's main means of communication being based on exponentially fast development of digital technology (see Chapter 1).

1.6   Research Questions

It is not always clear whether a person in a social situation is using their smartphone for personal purposes, or to contribute to the ongoing interaction. At times smartphone users might be looking up information they believe relevant and interesting to others. Joint use of smartphones, such as looking at photos or maps together, can also rapidly change into a personal smartphone use, for instance, when the phone's owner responds to an incoming message or notification. This dissertation makes three preliminary classifications of smartphone use in social situations to define its topic. Smartphone in a social situation can be solo use, when the device is used alone, or joint use, if it is used together, like when watching photos or videos together. Furthermore, smartphone use is personal when the use is not

oriented towards advancing the current social project of the face-to-face situation. The fact that the researcher cannot always know if the use is personal or not, is the same position that most bystanders to smartphone use also typically face. This does not make it impossible, nor irrelevant, to analyze such situations, and study how people deal with this ambiguity. Smartphone use in a social situation is defined asymmetrical when the participants are engaging with their smartphones to different degrees. For instance, if one participant is using their smartphone, and everyone else is not, the smartphone use is asymmetrical. The focus of this dissertation is asymmetrical solo smartphone use, and this type of situation is here called a "smartphone situation". Some of this type of smartphone use can be prosocial rather than personal, but it must reveal itself as such at some point in the unfolding interaction, for anyone else to recognize it as such.

The topic of asymmetrical solo smartphone use was chosen because of previous research pointing to these smartphone situations as the principal format of socially problematic smartphone use, and public interest most seems to be targeted specifically to problems in smartphone situations, as the popularity of the term "phubbing" suggests. The prevailing concepts of phubbing and technoference seem to specifically miss the importance of smartphone situations as uniquely different than other types of smartphone uses in social settings, while the interactional research so far has been predominantly centered around joint use of smartphones, and other uses of smartphones as resources for face-to-face interaction. Considering how common smartphone situations are, this dissertation aims to specifically provide knowledge on them, though also providing in information and methods on other types of smartphone use as well. The research questions of the dissertation are:

1. What kinds of conversational practices may be formed in parent-child interaction during parental smartphone use?
2. Do smartphones as a source of distraction differ from more traditional media, like newspapers, and how?
3. How smartphone use in social settings relates to social intelligence?
4. In which ways people display their embodied engagement with their smartphones, and how this impacts ongoing conversation?

2 METHODOLOGY

2.1 Data

Articles I and III use video data from unsolicited, naturally occurring social situations. Article II uses survey data, including an online experiment and open-ended questions. Data for Article I came from the project "Media, Family Interaction and Children's Well-Being" at Tampere University, Finland. Data were collected in 2010–2011. Four video cameras were installed in homes of 26 Finnish families, half of them with at least one 5-year-old, and half with at least one 12-year-old. Talks with parents pre-installation determined the most suitable locations for the cameras. It was revealed that the aim was to gather information on technology use. In most cases, cameras were installed facing the kitchen, living room sofa, main TV, and child's room. Dataset consists of 665 hours of video, representing events taking place over a 186-hour timespan. Article III uses data from a corpus of 13 video recordings. Total length of the videos is 11 hours. They were filmed in everyday encounters in Finland, France, and California, U.S. in 2017–2019. Locations included cafés, parks, campus dining halls, bars, terraces, and in a line for an outdoor public bathroom. Participants' ages were between 17 and late 20s.

Article II uses online surveys and experiments. The data was collected for both statistical analyses and qualitative content analysis. The surveys included previously validated measures of phubbing and being phubbed, as well as a new comic strip - based role-playing experiment which included answers on a 5-point or 7-point Likert scale, as well as open-ended questions. Data came from two convenience samples (N_1 = 112, N_2 = 109) from university students in Finland. The first sample was for a pilot study that did not include biographical data. In the second sample, questions on age, gender, income, and the number of children were included. Both samples were collected from the same university course, on different years. The questionnaires and online experiments were in Finnish and followed the same collection procedures on both occasions.

2.2 Research Ethics

All the data were collected in accordance to the guidelines of the Declaration of Helsinki on research ethics. The participants were taking part in the studies voluntarily and they agreed to take part in the studies reported in this dissertation. According to the standards of the Ethics Committee of the Tampere Region and the Finnish National Board on Research Integrity for Human Sciences, ethical review is only obligatory if research participation is not based on informed consent or if the research involves strong stimuli or the possibility to cause harm to the participants. The participation in all the studies of the dissertation were voluntary, participants gave their consent for participation, and none of the study designs included strong stimuli or harming the participants.

2.3 Conversation Analysis

Articles I and III used ethnomethodological conversation analysis (CA) as their main methodology. CA developed from ethnomethodology as a method for cumulating descriptions of the social practices people use to construct and understand events in interaction (Heritage, 1984).

2.3.1 Transcriptions of Naturally Occurring Interactions

Thought CA is based on Garfinkel's EM and Goffman's conceptualization of interaction order (Sidnell & Stivers, 2012), CA differs from them significantly in that data collection and the representation of data as a justification for analytical inferences is absolutely central (Jefferson, 2004). All vocal and non-vocal resources participants may use in their social conduct, to produce and understand interaction, are also necessary for the analyst to have access to. The analyst needs access to them to prepare transcripts that represent all the relevant aspect of the social conduct in a literary form. The accuracy of the transcripts is therefore central. They should include, not just the words spoken, but the way they were spoken: speed, emphasis, rhythm, intonation, volume, and tone. All vocal conduct that does not comprise words, should also be included. This includes things like coughing, smacking of lips, and audible breathing. It should not be assumed that words take priority over other sounds or non-vocal embodied conduct like gaze direction, posture, and facial

expressions (cf. M. H. Goodwin et al., 2012; Kaukomaa et al., 2015; Ruusuvuori & Peräkylä, 2009). Neither should the use of objects or tactile conduct like touching be *a priori* assumed secondary (cf. e.g. Cekaite & Goodwin, 2018; C. Goodwin, 2000). All these are interactive resources for producing recognizable social action. They are locally relevant, or irrelevant, through the elements of the particular occasions in particular social situations in which the actions are produced and understood in (Schegloff, 2010). Sometimes an apology, or forgiving someone, can be a touch of a hand, and a look.

To respect the multimodal nature of social interaction, the transcription system used in this dissertation, overwent a significant transformation from Article I to Article III. Several tools were increasingly used in preparation of the transcripts. Elan5.9 with .vaw files and waveform viewer was used for visual examination of pause length. Praat 6.0.40 was used for visual examination of pitch, volume, and speech quality in spectrograms and other visualizations of sound. In transcribing the "gaze" of the smartphone, i.e. the direction the screen is pointing to, a system was developed on basis of Charles Goodwin's transcriptions of eye gaze with influences from Rossano (2012), and the multimodal transcripts of Mondada (2007). The reason why Courier New and other monospace fonts are used in CA is that they facilitate aligning overlapping vocal conduct. Because Article III marks the corporal arrangements with smartphones in superscript, invisible superscript spaces were added to some lines in order to maintain alignment.

2.3.2   Collection-Based Analysis

Maynard and Clayman (2018) describe CA as a method of "specimen collection", similar to that of a work of naturalists (Heritage, 2018). The analogy specifically describes the collection-based method of conversation analysis. It originates in the image of Darwin arriving to Galapagos Islands, encountering a previously unknown ecosystem, brimming with new species. By collecting and studying specimens of different animals, he was able to delimit one species from another. It led to descriptions of species of lizards and birds, and what makes them different from other lizards and birds. Similarly, by collecting specimens of social beings—interactive events and the practices relating to them—conversation analysts study interactive phenomena and recognize some of them as specimens of the same type, for instance a practice of how to end a phone call (Schegloff & Sacks, 1973). As naturalists may use microscopes to see the delicate bone structures of birds, a

conversation analyst uses transcription, the conceptual toolkits, and previously accumulated work of CA, to see the detailed characteristics of a social practice they are studying (Heritage, 1984, p. 311).

2.3.3 Single Case Analysis

Stretching the metaphor of specimen collecting by Heritage and Clayman, this chapter describes single case analysis in CA within the same framework. During his trip to Galapagos, Darwin not only collected specimens, but also kept a diary. Like collection-based analysis is analogous to specimen-collecting, single case analysis could be compared with the naturalist's diary.

> September 29th. -- We doubled the south-west extremity of Albemarle Island....
>
> The rocks on the coast abounded with great black lizards, between three and four feet long; and on the hills, an ugly yellowish-brown species was equally common. We saw many of this latter kind, some clumsily running out of the way, and others shuffling into their burrows. I shall presently describe in more detail the habits of both these reptiles. The whole of this northern part of Albemarle Island is miserably sterile....
> – Darwin, Galapagos diary

The diaries describe when an animal was first encountered: a lizard standing on certain kind of ground, camouflaged by the vicinity of a certain kind of grass, while sun was setting, and birds circulating over the rocky shores. Not all is known about this lizard and their kin, nor the birds and the amount of sunlight being emitted—but a rich description of the scene as a whole, the context the lizard was first encountered, serves a purpose[10]. In any given situation, there are countless number of variables that can be connected to whatever is being investigated. It will never be possible to describe them all. Nevertheless, a naturalist may aim for as good of a literary description of the moment as reasonably possible. Together with the anatomic study of specimens, these descriptions form an important part of the totality of the understanding of an ecosystem that the naturalist provides their audiences with. First descriptions might later change. The "black lizard" on the rocks might turn out to be same species with the "ugly yellowish-brown". However, just like accounting for both lizards and their surroundings can help readers to understand a lot about the nature in Galapagos, so does a single case analysis of an

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[10] Darwin also included these dairy-style descriptions of scenes to his letters to England, making it possible for the readers at home to imagine what the ecosystems he discovered. This might be analogous to research publications utilizing single case analysis.

episode of interaction help to understand the ways some specific interactive techniques can reflexively intertwine and interact with activities, projects, shifting interactive states, and conversational settings in the situation as a whole (cf. Schegloff, 1987, 2014). Giving an accurate and careful description of a single episode of a use of an interactive technique, has value. Furthermore, although single case analyzes are handicapped in their ability to expose general regularities of interactive conduct, i.e. putative interactive practices or "devices"; as Schegloff (2014 [1988], p.442) notes, they may also serve "to launch a proposal" of an existence of such a practice.

2.3.4   Between Single Case and Collection

First and third articles of this dissertation utilize analyzes that completely, or predominantly, fall into the category of single case analyses. However, at least the third article also has elements of collection-based analyzes. This chapter details the prototypes of single case analysis and collection-based analysis in CA and contests the prima vista simplicity of the division. Many CA studies in fact fall somewhere in between the two prototypes. Some in-between studies are also included in CA's canon. When revealing and explicating the ways social conduct is undertaken, the evidence lies at least as much in the accuracy and carefulness of the description as it does in the number of instances analyzed (cf. Lynch & Wong, 2016, p. 542; Schegloff, 2010, p. 42). Therefore, there is a limit to how many instances a researcher can analyze and an even more significant limit to how many analyzes a researcher may present to the reader. An accurate description of a single case of some practice may reveal its building blocks to members of a speech community, who actually are already adept to routinely utilize and recognize that practice, and therefore have a type of preceding knowledge about it. If the studied practice actually is a putative practice, an average member of society must already know it, even if they are not aware of it in the same type of way that the researcher's description then facilitates them to be. Researcher's description of a single case of a usage of a practice reveals the intricacies of its execution. Collection-based analyses on the other hand reveal what is the essence of the practice, i.e., what are the elements and aspects it must have for it to be recognized as that practice, and therefore reveals the necessary and sufficient conditions of its recognition. Collection-based studies might better suit the study of some types of practices and single case analyses others. Heritage's (1985, 1998) classic studies on "oh" as a change-of-state token in the beginning of

utterances exemplify the best of collection-based studies: it is intuitively not clear what is the core function of "oh" across situations, but through large collections of different instances, the essence of the practice could very convincingly be revealed. Then again, the way we use the torquing of our bodies in regulating multiple involvements is much more intuitively understood, and its classic study seemed to have benefitted from a very accurate analysis of only a few instances (Schegloff, 1998).

2.3.5   Sequence Organization

Everyday vocal interaction organizes into turns, the distribution of which are not decided in advance. People indicate themselves or others as the next speaker, typically when the current speaker's turn is nearing a possible end point. Transition relevance places (TRP) are these possible end points. Like dotted lines on a cereal box delineating where to cut out a cardboard mask, the turn can be cut there, without anything being perceived as broken. When current speaker changes on a TRP it is typically not considered as an interruption. Turns of speech further organize into sequences. Sequences are structures recognizable by both speakers and hearers and social behavior is produced through them and in relation to them. Greetings for instance are typically exchanged in the beginning, before moving on to exchange of news, while goodbyes are usually said in the end. Within sequences, coupled structures of paired turn-types, turns that routinely appear together, can also be found. These are called adjacency pairs. Their first-pair parts carry an expectation of a specific kind of next turn, or second-pair part, to follow. Greetings are expected to be followed by greetings; invitations are expected to be followed by accepting or declining the invitation (Sacks et al., 1974; Schegloff, 2007). Preference organization, a "subsection" of sequence organization, further elaborates that even between expected next turns, some are expected more than others, i.e. "preferred". This does not mean that the person uttering the first turn would actually want or expect the preferred turn-type to happen next. They very well might, but this is not what CA studies. It does not study intra-psychological states. Psychological categories are only relevant if they are observably produced as relevant in interaction. Accepting an invite is preferred over declining it in the sense of this being the mutually known interaction order, in the framework of which, interaction is produced. It is seen in invitees typically producing declining responses in such a way that pushes the declining action later in time with prefaces and pauses. Turns that decline an

invitation typically also include explanations, which typically portray the invitee as having had little other choice than to decline. If none of these typical signs of dispreferred turns are present the inviter may perceive the invitee as having been impolite in the abruptness they declined the invitation (C. Goodwin, 1985; cf. Pillet-Shore, 2017; Pomerantz & Heritage, 2012).

However, a fundamental part of conversation analytic investigations is the ethnomethodological background in indexicality. Any generalities about specific types of turns, or specific signs characterizing turns, including non-vocal conduct, derive their meaning from their sequential environment; i.e. when they are produced within the progression of sequences, and the projects that these sequences advance, and the encounters that these projects constitute, and, I claim, to a degree also the relationships that these encounters constitute, the communities and networks these relationships constitute, to finally the whole global social context of societies these communities constitute11. Citing Schegloff and Sacks (1973, p. 299, cf. also Schegloff 2010):

> (1) Past and current work has indicated that placement considerations are general for utterances. That is: a pervasively relevant issue (for participants) about utterances in conversation is 'why that now', a question whose analysis may (2) also be relevant to finding what 'that' is. That is to say, some utterances may derive their character as actions entirely from placement considerations. For example, there do not seem to be criteria other than placement (i.e., sequential) ones that will sufficiently discriminate the status of an utterance as a statement, assertion, declarative, proposition, etc., from its status as an answer.

Because each encounter is unique, the meaning of dispreferred turn signs—as well as all other forms, aspects, and elements of interaction—must be analyzed in the actual encounters they occur in. It is however crucial to keep in mind, that the question "why that now" is not for the analyst to answer, but for the participants (Schegloff, 2010). Explicating the way participants themselves in social encounters answer this question, in relation to all their multimodal social conduct, is the task of the analyst.

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11 This however does not mean that an analyst would derive interpretation of participants' utterances or non-vocal conduct from societal level contexts. Analyst must however be sufficiently aware of these contexts to recognize when such connections are made by the participants themselves, e.g. when saying "times like these" after some big societal event has taken place.

2.3.5.1 Storytelling

Exceptions to typical turn-taking exist. They are prepared by means that showcase that a different institutional order is to follow. This might be introduction of a specific institutional setting, like a medical encounter (cf. e.g. Heritage et al., 2007; Ruusuvuori, 2007), or it could be an episode of telling a story in mundane interaction (Jefferson, 1978). Storytelling puts the typical turn-taking-organization on hold to typically give one person the special rights to continue their turn over several TRP's. Storytelling sequence organizes into recognizable phases of story preface, story beginning, story proper, climax or "punch line", and story reception. Recipients of a story are expected to mainly keep quiet and allow the storyteller to finish, at what time, a reception of the story is expected to be enacted by story recipients. The expected stance of this reception is typically already embedded in the production of the punchline by the storyteller (Mandelbaum, 2003; cf. Ruusuvuori & Peräkylä, 2009). However, the story as a whole is an interactional accomplishment, a joint project of storytellers and recipients, as 1) stories are locally occasioned by the sequential environment in which they are started in (Jefferson, 1978), 2) the recipients need to understand different elements in the story throughout its production, and display embodied conduct accordingly (C. Goodwin, 1985).

2.4 Online Surveys and Experiments

Data for Article II was collected online. Most of it was directly in quantitative or categorical form. Sample 1 ($N_1 = 112$) was for a pilot study, and did not include biographical data. Biographical data collected in the second sample ($N_2 = 109$) were used as control variables and dummy variables. Age was turned into a variable indicating if the participant was 23 years old or older, gender variable indicated female gender, and income indicated if the respondent had a monthly income of 1200€ or more, which was treated as high for a Finnish university student. Respondents in the second sample were mostly young ($M_{age} = 26.83$, $SD_{age} = 7.79$; $Mdn_{age} = 23.00$) women (86%) with incomes mostly under 1200€ per month (82%). The first sample ($N_1 = 112$) was collected two years prior at the same university, on the same course. For qualitative content analysis, the samples were combined ($N = 221$).

2.4.1 Measuring Phubbing

A scale developed by Chotpitayasunondh and Douglas (2018a) was used to measure respondents' evaluations of their own phubbing behavior. Respondents were asked to "think about your own mobile phone use during your face-to-face social interactions with others" and to assess the frequency of occurrence for 15 smartphone-related situations on a scale from 1 (never) to 7 (always) (see Article II, Materials and Methods). The instructions and items were translated into Finnish and the measure had good internal consistency, based on McDonald's omega ($\omega = 0.88$).

2.4.2 Measuring the Experience of Being Phubbed

Respondents' evaluations about being phubbed were also measured in Article II. The Generic Scale of Being Phubbed (GSBP), also developed by Chotpitayasunondh and Douglas (2018a), was translated into Finnish. The scale consists of 22 items measuring how much the respondent perceives being phubbed in their social circles. The order of presenting respondents with GSP and GSBP was randomized but did not show statistically significant impact on responding behavior. Response options and the preceding instructions of GSBP were identical to GSP, except for instructing respondents to think about "other's mobile phone use", instead of their own. GSBP had excellent internal consistency ($\omega = 0.94$) in the sample in Article II.

2.4.3 Measuring Social Intelligence

Social intelligence was measured with the Tromsø Scale of Social Intelligence (Silvera et al., 2001), which consists of 21 items. The subscales of the measure include information processing, social skills, and social awareness. The scale begins with an instruction: "For each item, indicate how well it describes you on a scale from 1 (describes me extremely poorly) to 7 (describes me extremely well)". The scale was translated into Finnish and had excellent internal consistency ($\omega = 0.90$).

2.4.4 Experiment on Bystander Inaccessibility

Bystander Inaccessibility Experiment was drafted to test if being ignored due to a technology that conveys more about the nature of its usage to bystanders is

considered less annoying, than being ignored due to smartphone use. Episodes of phubbing and being ignored due to reading a newspaper or a magazine were developed based on naturalistic data observed in Article I. Anonymized cartoon-based representations were drawn and respondents were instructed to: "Put yourself in the position of the person speaking and evaluate how annoying the situation would be for you". Responses in the 2018 sample were given on a scale from 1 (not at all annoying) to 7 (extremely annoying) and in the 2016 sample from 1 (not at all annoying) to 5 (very annoying). The order the cartoons appeared to the respondent was randomized in both samples. An open-ended question followed the rating of the two cartoon-depicted situations: "Why did you evaluate the first and the second situation as you did?".

2.4.5 Quantitative Techniques

Quantitative analysis included t-tests and the reporting of means (M), standard errors (SE), standard deviations (SD), and confidence intervals (CI) for Sample 1 in Article II. For Sample 2, descriptive statistics of the study variables were reported, as well as Pearson's correlation coefficients, p-values from the descriptive analyzes, unstandardized (B) and standardized (β) regression coefficients, standard errors (SE (B)), and p-values for the ordinary least squares (OLS) regression models.

2.4.6 Qualitative Content Analysis

The responses to the open-ended questions (N = 221) in the online experiment in Article II were thematized and coded with NVivo 12. Respondents often referred to several topics in their answers, so the total number of codes ended up being larger than the total number of responses. The answers consisted of reasons given for evaluating the smartphone and magazine situations as equally annoying (355 codes and themes) or differently annoying (676 codes and themes). The coding aimed to lose as little content due to abstraction as possible, but codes that were completely parallel, were merged. This resulted in 639 remaining codes. Similar codes were then grouped together into themes and subthemes, which were then abstracted into main themes with the help of re-examination and comparison of themes, subthemes, codes, and the original responses.

3 RESULTS

3.1 Sticky Media Device

Article I describes a way parent-child interaction may at times be challenged by parental smartphone use during leisure time at home. It details an episode of interaction around lunch table between a parent and their 12-year-old child. The child is drawing pictures of fashion models to their notebook and the parent is doing something on their smartphone. The child launches the interaction asking the parent to give their opinion on a picture, using a deictic expression: "this isn't so terrible is it,". After a 1.1 second silence, the child continues to seek parent's participation: "#mother#". At this time mother's gaze moves to the picture, and after 2.1 seconds silence mother produces the evaluation "th' ↑no::. it is quite (.) nice.". Mother's responses are delayed (Article I, Extract 1, lines 2 and 4), and lack fluency ("quite (.) nice", Extract 1, line 5). These elements continue throughout the interaction, while the behavior by which mother's participation is sought, intensifies.

Figure 5. The child moves to show the notebook to her mother, who's gaze returns to the smartphone before providing the requested evaluation

The elements like gaps (e.g. line 2), pauses (e.g. line 5), and particles like "well" (Extract 5, line 22) are similar to elements typically present in dispreferred turns in interaction (Pillet-Shore, 2017; Pomerantz & Heritage, 2012). However, mother's embodied conduct at lines 17–19 (Extract 3, see also Figure 7) show mother beginning to engage in the shared interactive project of looking at the picture, and then presumably producing an evaluation of it, before re-engaging with their smartphone before producing the sought evaluation. When mother finally puts away her phone and begins to evaluate the photo (Extract 5, line 26) she engages in it

strongly, paying respect to details, and using expressions like "really cool" (line 26), not just giving a passing remark like before ("quite (.) nice", Extract 1, line 5).

These results suggest that smartphones may appear as kinds of sticky media devise from the point of view of the person that is seeking the attention of the smartphone user. Smartphone use may produce pauses and other dispreferred turn signs to interaction even when the face-to-face interaction itself does not construe dispreferred sequences. This apparently arises from the smartphone users distributed attention between the face-to-screen interaction with the device and the face-to-face interaction in the collocated social situation. Interactive resources, like the gaze of the smartphone user, may be momentarily gained to serve the advancement of the face-to-face project, and then return back serve any project going on in the face-to-screen interaction, before the relevant next turn has been produced in the face-to-screen interaction (cf. Licoppe & Figeac, 2018). The presence of elements that typically signal dispreferred turns, also in turns that are not otherwise designed as dispreferred in the face-to-face interaction, might make it more difficult for participants to maintain shared understanding over preference organization at any given moment when face-to-screen and face-to-face interactions are being concurrently involved with.

3.2   Phubbing and Social Intelligence: Role-Playing Experiment on Bystander Inaccessibility

Article II suggests phubbing to predict lower social intelligence, showed phubbing to consistently be deemed more annoying than inattentiveness due to reading a magazine, and described the reasons people give for being more annoyed by phubbing. Majority of the participants reported difference in the annoyingness of the magazine situation and the smartphone situation. Everyone who evaluated the situations differently, had rated the smartphone situation as more annoying than the magazine situation. Differing from Chotpitayasunondh and Douglas (2016, p. 13), this study did not find statistically significant gender differences in phubbing and being phubbed. Considering that Chotpitayasunondh and Douglas' sample of 251 respondents consisted of a collection of British university students, responses on Amazon's Mechanical Turk, and their own miscellaneous social media contacts; and also that Błachnio & Przepiorka's (2019) Polish sample of 597 showed the same gender difference, it is feasible that the results of this study reflect previous findings

on higher egalitarianism in Finnish population (*Gender Equality Index 2020: Finland*, 2020).

Article II developed and made use of the concept of Bystander Inaccessibility, which consists of 1) smartphones being "metamedia" (Jensen, 2016), with more affordances (Gibson, 1977) than any other daily object, 2) smartphones having a design that combines with recently-emerged social norms (Eiband et al., 2017; Saad et al., 2018) to make smartphone screens *a priori* private, therefore typically hiding the category, phase, and duration of the activity being done with them from bystanders. The explanations that respondents of Bystander Inaccessibility Experiment however only rarely referred to the fact of not knowing what the smartphone user was doing, as an explanation of why they found the smartphone situation more annoying than the magazine situation. There are two ways to explain this: knowing what another person is doing really is not a relevant aspect for people when that person fails to acknowledge their interactive initiatives, or the reasons why people feel some situations more annoying than others are not always fully available to them, due to the routinized nature of the functioning of the norms of social interaction (cf. Garfinkel, 1967). Chotpitayasunondh's and Douglas' (2018a) measures on phubbing and being phubbed were chosen because they clearly are the most valid measures available (see Chapter 1.1.1). Tromsø Scale of Social Intelligence was also chosen based on apparent validity, it being validated in several languages (see Article II Chapter 2.2.4).

Based on regression analyzes, phubbing was found to be a strong negative predictor of social intelligence ($\beta = -0.36$, $p < 0.001$). The association between being phubbed and social intelligence was not statistically significant ($\beta = -0.19$, $p = 0.061$). This suggests that although peoples' social circles seem to form environments of similar levels of phubbing (cf. Aagaard, 2019; cf. Chotpitayasunondh & Douglas, 2016, 2018a, 2018b), within a group of networked people, the ones that phub the least are likelier to have higher social intelligences.

3.3   Smartphone Moves: How Changes in Embodied Configuration with One's Smartphone Adjust Conversational Engagement

Article 3 developed a new transcription system for analyzing smartphone use in social situations and exemplified its use by showing how embodied smartphone

engagement adjusts also concurrent conversational engagement. The system is based on classifying the smartphone user's corporal relation with their smartphone, and the transformations therein. From analyzing the data as a whole (13 videotaped social encounters, 11 hours of data) the corporal relation with one's smartphone emerged though 1) device's location (e.g. bag, table, hands, pocket), 2) direction of the screen in relation to user's head, and 3) the device's relation to user's hands. Classifying user-smartphone relation through these aspects resulted in the discovery of 13 distinct smartphone positions. These include positions where the phone is in the user's pocket (Pocket, PC), on the table, screen facing up (TableUp, TU) or down (TableDown, TD), on user's hand, screen directed towards the user's head (HandFace, HF), and so on. This framework was then used to analyze a single conversation between Finnish high school students in a café.

Analyzes revealed that smartphone moves from one position to another may be used to indicate an end of a turn by enacting a smartphone move that reduces the availability of interactive resources for face-to-face interaction and increases the availability of interactive resources for face-to-screen interaction (see Article III, chapter 3.1. and Extract 1). Smartphone moves may also be used to hold onto a position of speaker by a disengaging smartphone move which results in an apparent strengthening of engagement in face-to-face framework, then seen as a proposition for holding onto a more active role therein (see Article III, Extract 2 and chapter 3.2). All the smartphone moves gain their exact significance through the projects and actions being advanced in those particular encounters that they are used. However, the distribution of availability of interactive resources in service of face-to-face or face-to-screen interactions is argued to form a universal device for adjusting engagement and disengagement in social situations. This device is nevertheless also dependent on the character of the current projects of the face-to-face interaction, i.e. if the smartphone user is e.g. looking up information on behalf of a co-participant in face-to-face interaction, engaging smartphone moves hardly constitute disengagement from collocated social projects.

4 DISCUSSION

This dissertation addressed personal use of smartphones in collocated social situations. In Article I smartphones were shown to be engaged also in situations where all participants displayed willingness to interact with their conversational partners. Smartphone appeared as a kind of sticky media device for the conversational partner seeking the smartphone user's participation in face-to-face interaction. Though the sought-after participation is not declined, pauses and other dispreferred turn signs make it lack fluidity. In the episode analyzed in Article I, the child inviting their parent's participation had to use increasingly intense embodied methods before the projected face-to-face interaction finally took off. This might explain some of the negative assessments previous research (cf. Aagaard, 2019; Chotpitayasunondh & Douglas, 2018b; Roberts & David, 2017) has found on smartphone use in conversations. It might also partly explain results of Article II, which found smartphones to be evaluated more negatively than magazines as reasons for not responding to invitation for interaction. However, Article II used an experimental design which did not include variations in the embodied engagement of the smartphone user with their device. Article III showed such variations to be a resource for adjusting also the conversational engagement through shifting the proportional distribution of interactive resources between face-to-screen and face-to-face interactions in what was coined "smartphone moves".

4.1 Smartphones and Face Work

Previous research shows much dislike for phubbing in social relationships (Roberts & David, 2017; Schneider & Hitzfeld, 2021, 2021). This suggests people do not feel good in social situations where others use smartphones. However, this dissertation, and some earlier work on smartphones and traditional mobile phones (DiDomenico et al., 2018; Didomenico & Boase, 2013; Henriksen et al., 2020; Raclaw et al., 2016) strongly suggest that not all moments of smartphone use are equally unpleasant for co-participants. An aspect of "face" in daily life might be relevant here. According to Goffman (1955, p. 213) "the term face may be defined as the positive social value

a person effectively claims for himself by the line others assume he has taken during a particular contact." Moments where this face is threatened are typically dealt with co-operative face-work (Goffman, 1955). Beginning personal smartphone use in a situation where no-one's face is threatened might be different from situations where face-threat is present. Engaging with one's smartphone at a moment when a storyteller is stumbling in their storytelling for instance, could be seen occasioned by that stumbling and therefore underline the incident, intensifying face-threat to the storyteller (see Article III, Chapter 3.3). Accounts given for smartphone engagement on the other hand may enact face-work by countering possible face-threatening interpretations. Other ways of disengaging, like for instance inhaling cigarette smoke (Goodwin 1981, 113–116), differ in that they in themselves already suggest a witnessable and non-face-threatening motivation for the action. When BI hides the motivation of smartphone engagement, accounts are needed to circumvent it, and to manage the possibly ascribed negative meanings the smartphone engagement might acquire. Providing this account in a sequentially appropriate manner in situations of being recipient to storytelling however, encumbrance a limited interactive resource: audible speech.

4.2 Accounting for Smartphone Engagement

Accounting for smartphone engagement may offer epistemic access to the activities of the smartphone user, thereby mitigating BI. However, not all moments of smartphone engagement are equal. In Article III, Extract 1, Clo already had one hand on her smartphone when making a HandfFace (HF) - BothHands (BH) move. Smartphone use was already positioned as an emerging activity. A phone that is already in your hand might be seen as an activity that is only temporarily put on hold (cf. Schegloff, 1998). Recommencing that activity may be seen as more of a continuation than commencement. The classification of activities and involvements as primary and side involvements is also crucial. However it is sometimes not clear what should be named as primary involvement and what a secondary one in some smartphone situations. Keeping a smartphone in your hand throughout an encounter might be seen as having smartphone use as one's primary involvement, which is only being put on hold for duration of intermitted face-to-face interactions, which at times may resemble sequences of "*in vivo* crosstalk" (cf. Ictech, 2019) inserted into the primary face-to-screen interaction, to be returned to at first opportunity. This type of smartphone engagement surely does not need accounting

(as Clo's smartphone engagement did not need in Aricle III). Even if it competes from allocation of the same interactive resources also relevant in face-to-face interaction, it does not constitute a beginning of a new activity, nor a failure to carry out ones expected duties in their primary involvement.

From the perspective of bystander to smartphone use it might at times be difficult to know whether to initiate face-to-face interaction with a smartphone user or not as BI hides what is the activity that would be interrupted. In Article I the mother showed some initial availability for face-to-face interaction by providing, albeit laconic and delayed, a response for the child's initial inquiry. In the comic strip of Article II, no signs of availability were visibly displayed, and couple of respondents actually said they would themselves feel rude in interrupting someone who seems so absorbed in their smartphone use—though these kinds of accounts were much more common in relation to the magazine condition.

Engaging with a smartphone that is already in your hand provides a visible answer to "why that now", the metaphoric question participants need to answer in regard to any interactive conduct (Schegloff, 2010; Schegloff & Sacks, 1973, p. 299). However, BI makes it hard to know if the smartphone engagement continues an action, or begins a completely new one, possibly in a category completely different from a previous action or the theme of the face-to-face conversation. Bystander inaccessibility makes smartphone engagement peculiar. Re-engaging in reading a book for instance, does not have the same ambiguity. Smartphone users might moreover be continuing a previous activity also when grabbing hold of a device that is lying on the table. Bystanders to smartphone use would typically be unaware of this being the case, unless accounts were provided. A book on the other hand conveys the future intentions of its reader already by being placed on the table either closed or open. Adjustments akin to this are obviously also somewhat possible with a smartphone. By placing the smartphone on a table either in TableUp (TU) or TableDown (TD) positions, its user may display different involvements with the device, but this practice still does not circumvent BI: it does not convey the same message about intentions to continue the activity as an open or closed book, and it typically does not give access to the bystander about the activity that might later commenced or continued[12]. Differences between continuing an action and staring a

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[12] Placing a smartphone on a table screen up could actually at times be used to circumvent BI by letting other participants see what application is open on the smartphone and what is its status. This possibility

new one might at times be very relevant, though in the case of smartphones, not immediately recognizable to co-participants.

4.3   Smartphone Moves and Body Torque: Similarities and Differences

Throughout over a hundred smartphone moves identified in the preliminary analysis of the data for Article III, the participants showed their understanding of engaging with a smartphone to diminish engagement in face-to-face talk. However using smartphones in social situations is still a relatively new phenomenon and typifications of everyday background knowledge (cf. Garfinkel, 1967) relating to it might yet to be completely homogenized. This might explain why the nature of debate around phubbing-related topics can sometimes seem heated. Social norms that are still being formed raise more debate than the ones that have already been well-established. No norms of engagement have had as much time to be formed and established than the ones around the use of body in adjusting face-to-face engagement. This dissertation proposed a strong relation between smartphone moves and Schegloff's (1998) body torque configurations. Smartphone moves describe the modern ebb and flow of engagement and disengagement in intertwining and interleaving activities in face-to-face and face-to-screen interactions, but it did not aim to undermine relevance of gaze or other embodied resources any more than Schegloff aimed to undermine relevance of vocal conduct. Smartphone moves do not center on eye gaze and manipulation of the smartphone's screen. Yet this does not in any way suggest these elements to be irrelevant. It merely points out that gaze and manipulation of the screen alone are not sufficient to depict simultaneous engagements with smartphones and face-to-face interactants. Similarly, Schegloff analyzed body torque in order to assert that gaze, verbal, and gestural conducts are not sufficient to depict engagement in multiactivity situations.

Schegloff's (1998) body torque -classified embodied multiactivity through adjustments of head orientation, shoulders, and hips (see Article III, Chapter 1.4). These axes form a hierarchical order where activities occupy different positions of

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seems to however almost never be used as people typically either activate the screen lock or the primary desktop before placing the phone on the table, rendering any apps that might be active on the background invisible.

projected duration and dominance. An unequivocal hierarchical order, if such even exists, for smartphone positions, in relation to the level of engagement they manifest, is much more complex to establish. Face-to-screen interaction can be initiated and progressed through several modalities that may be asymmetrically apt in engaging with the user, depending on the particularities of the situation at hand. The notification and sound settings of the device also make a difference. For instance, among loud background noise, a phone in Pocket (PC) position and vibration mode, may be more apt to interact with its owner, than a phone in TableDown (TD) position and sounds on. However with low background noise, a TD position would afford more interactional resources for the user-device interaction, because the diversity and identifiability of sounds surpasses that of vibrations. We easily recognize hundreds of different ring tones in sound, but not that much in vibration.

Similar ambiguity on levels of engagement however to a degree applies to body torque as well. Between the five configurations identified by Schegloff (1998 see also Chapter 1.4 in Article III), there are endless ambiguous in-between and in-beyond manifestations of multiple involvements people may enact with minute modifications of feet, hips, hands, shoulders, eye-gaze, head, objects, and much more. The totality of human interactive resources form many times more complicated constellations of multiactivity than classified by Schegloff. A system of depiction of multiple engagements, however, need not be exhaustive to be useful.

4.4   Transcribing Smartphone Moves

CA transcription is always a compromise between accuracy and readability. In an ideal world readers would be given access to all the aspects of the social situations as they actually took place when experienced by the interactants themselves, but this is not possible. Choices must be made about what is depicted and what is not. The obvious as-close-as-we-can-get representation would be a stereovision 360° virtual reality video, filmed with fisheye-lens cameras placed close to the eyes of the interactants, embedded into an online article where readers could use virtual reality goggles to enter a very similar visual situation that the interactants themselves experienced. Even this arrangement would however leave out a plethora of unobtained black boxes relating to, for instance, the haptic channels of interaction. Furthermore the viewers can never become the doers and the intersubjective orchestrating of social action is hardly replicated by mere viewing of audiovisual

material, lacking the experience of enacting the bodily positions and facial expressions, which are moment-to-moment being monitored and responded to by interlocutors, while being felt by the doer themself. Due to limitations of human vision, mind, and positionality, the "imperfections" of data representation are not surmountable even in theory, much less in practice.

Though an "ultimate" depiction of conducts reflexively constituting meaningful events in social situations is not plausible, a sufficiently detailed and readable depiction is. It is not only advantageous to have available anything that was available for the interactants themselves, but we also want to have available a transcript that makes it easier, clearer, and simpler for a human mind to do its analytic work. There are limits to the representations of elements of vocal and non-vocal conducts that in practice facilitate analyzes and showcasing of evidence. An accurate transcription with fidelity to the millisecond with the original episode, including precise and complete depictions of tone, amplitude, and rhythm of voice, coupled with precise labanotation for all movement, would not only still be far from a perfect depiction— it would also be completely useless for any human reader to benefit from. Therefore, the system of smartphone moves was developed to be suitable for the topic of smartphone use in social situations *per se* and opted for practically applicable way of depicting the elements in the data that most contribute to the co-constructed understandings smartphone engagements may gain in everyday encounters.

4.5   Different Kinds of Smartphone Uses

The social conducts, evaluations, and explanations of smartphone use in collocated settings, revealed by this dissertation, may be inspected through the ethnomethodological concept of accountability. It is not always clear to participants in social situations, why people act the way they do. However, it is very typical to opt for thinking that others have not breached the norm of accountability, and rather to imagine rational and benevolent explanations for others' ambiguous behavior, even when no rational and benevolent reasons exist *de facto* (Garfinkel, 1967, pp. 79–94). It is therefore not surprising that, in Article II, the averages of annoyingness of both smartphone situations and magazine situations were low. It is also not surprising that so many of the explanations given addressed the theme of intention. Naturally, intentionally ignoring another was depicted as more annoying than doing so unintentionally, which was often imagined to be the case for a person who was

absorbed in reading a book or a magazine. However, the typical ad hoc nature of such explanations is well depicted by the fact that the theme of absorption was also used for explaining why smartphone situations were more annoying than magazine situations. Smartphone users who did not immediately answer when they were addressed were explained to be more annoying precisely because they were so absorbed in their device. Why would the lack of intentionality suddenly be a cause of increased annoyingness when the person ignoring you was using their smartphone?

Some explanations also contrasted "how it used to be" with the world of today, which was described as full of excessive smartphone use, even addiction. Some respondents imagined that this was the reason why smartphone situations were more annoying to people in general, though they themselves thought that smartphones and magazines are equally annoying reasons for non-responsiveness. All the diversity, imaginations, meta-imaginations, and clear contradictions within the provided explanations then resonated with some explicitly introspective accounts. Reports of astonishment and even bewilderment over noticing that being phubbed was more annoying than being ignored due to a magazine included surprised accounts of "simply not knowing" why this was the case, and in few cases, an auto-analysis of respondent's surprised feelings that traced them back to the fact, that in the case of the smartphone situation, the respondent did not know what the activity was that was seemingly replacing responding to them. Ethnomethodology posits such epistemic access to co-participants actions to be crucial, as without it, accountability of those actions cannot be defined. However, due to the fundamental nature of accountability and trust for any human sociality, people typically respond to ambiguous situations by imagining explanations that are benevolent and rational (Garfinkel, 1963, 1967, pp. 44–54). These explanations only need ad hoc adequacy, they need not cumulate into any logical explanatory system (Garfinkel, 1967, pp. 44–54).

In the case of imagining explanations for smartphone use, this benevolent and rational imagination needs to be inhabited with entities from a larger epistemic space than in with any other object. This immense epistemic scape might impose more demands for the search- and evaluation strategies that are used to select the explanatory objects—possibly resulting in increased cognitive load (cf. Hsieh & Tsai, 2014). If this is the case, this "added load" might explain some of the higher annoyingness of phubbing in comparison to less BI-instigating technology like

magazines. People seek to explain others' ambiguous interactive behavior as benevolent and rational, but it might be harder to do when the behavior conveys so little about what it is about. As the results of Article II suggest, it might be easier to come up with a benevolent and rational explanation for being ignored by a person reading: the book might be truly encaptivating, or they might have to read for an exam. Identifying benevolent and rational explanations for being phubbed might require more challenging imagining, inducing more mental load. This mental load might be preferred, or even expected, to be taken into consideration by the phubber. Some responses addressed this in the data for Article II, explaining that an explanation from the phubber would have made a distinct difference. This expectation can also be seen carried out in Article III, Extract 3.3. where Liz, currently being the primary recipient to Clo's story, treated herself as accountable for explaining her engaging TableDown (TD) – HandFace (HF) move: "I'll check the-". Though not continuing the utterance further, it revealed that "checking something" was treated as a necessary explanatory epistemic object for engaging with a smartphone in that occasion.

In general, smartphone use in social situations might be presented as a quadruple dichotomy (see Table 1), adding one more layer to the classification in Chapter 1.6. When the device is being used alone, it is solo use, but through for instance a HandFace (HF) – 1handedShow (1S) move, it can turn into joint use in an instant. When the participants of a social situation engage with their smartphones to different degrees, smartphone use is asymmetrical. However, as Article III demonstrates, participants may implicitly suggest transitions in the hierarchical order of importance between face-to-face and face-to-screen interactions, and situations of asymmetrical smartphone use can quite fluently turn into symmetrical smartphone use, weather that would be with strong or weak engagement with the devices.

Solo use	Asymmetrical use	Personal use	Hidden use
Joint use	Symmetrical use	Prosocial use	Accessible use

Table 1.   Quadruple dichotomy of smartphone use in social situations

When the phone is being used for goals that are not shared in the ongoing social situation, like checking one's Instagram likes, or messaging someone outside of the face-to-face situation (cf. Henriksen et al., 2020), the use is termed personal use. However, personal use can turn into prosocial use, for instance when the user stops scrolling their Facebook feed and looks up information relevant to the ongoing face-

to-face conversation (cf. Brown et al., 2015), or perhaps if the user messages with another participant in the face-to-face situation (Brown et al., 2018). As a uniquely new contribution to the study of smartphones in social situations, this dissertation introduced the concept of bystander inaccessibility, to emphasize a fourth aspect of smartphone use in face-to-face settings: the content of the smartphone use can be hidden from others due to bystander inaccessibility, or it can be accessible to them when the screen is revealed to them, or other elements such as sounds or the use of earplugs convey some information about what the device is being used for. Bystander inaccessibility and prosociality both relate to the concept of accountability in EM (see Chapter 1.4.1). Though the "prosocial" is not here used moralistically, but simply to define either personal goals or shared goals of the smartphone use, it should be noted, that there are social norms that apply to participation in social situations, and disengagements and departures in order to engage in other activities are typically enacted in relation to these norms (C. Goodwin, 1981, 1987, cf. 2006; C. Goodwin & Goodwin, 2005). Any activity that requires allocation of interactive resources to be available to it, and does not advance a shared interactive project in the social situation, necessarily then competes from the availability of those resources with face-to-face interaction.

BI can be mitigated. Verbal accounts and embodied accounts (e.g. a specific facial expressions or hand gesture that the context renders intelligible), or placement and timing of a smartphone move in such a way that it appears to be occasioned by the needs of the face-to-face interaction (cf. e.g. Schegloff, 2010 for relevance of placing) mitigate BI. As seen in Article III, such practices may turn hidden smartphone use accessible in varying degrees, but bystander inaccessibility can also be managed by making the smartphone use joint through moves like HandFace (HF) – 1handedShow (1S), or by merely revealing the screen to others, without obligating their participation, like through moves such as HoldManipulate (HM) – TableManipulate (TM) or HandFace (HF) – TableUp (TU). The practices of reducing BI are important, as low or high levels of bystander are crucial, not just in the accessibility of the content of the smartphone use *per se*, but also in terms of its prosociality.

The first two aspects of the quadruple dichotomy (see Table 1) rarely cause confusion, as both solo vs. joint use and asymmetrical vs. symmetrical smartphone use are clearly observable to all participants of social situations. However, in a case of high BI, even prosocial goals of smartphone are at least temporarily hidden from

other participants, a phenomenon that might be called "pseudo-phubbing" (see Figure 6). Therefore personal vs. prosocial use, and high vs. low BI, form the heart of what can make smartphone situations ambiguous, and confusing to deal with. Reducing BI might in these cases mitigate smartphone related conflicts, as even in the case of actual phubbing, such practices would at least convey some orientation towards others, and towards the expectations and obligations of the face-to-face framework (see Article III, chapter 3.3).
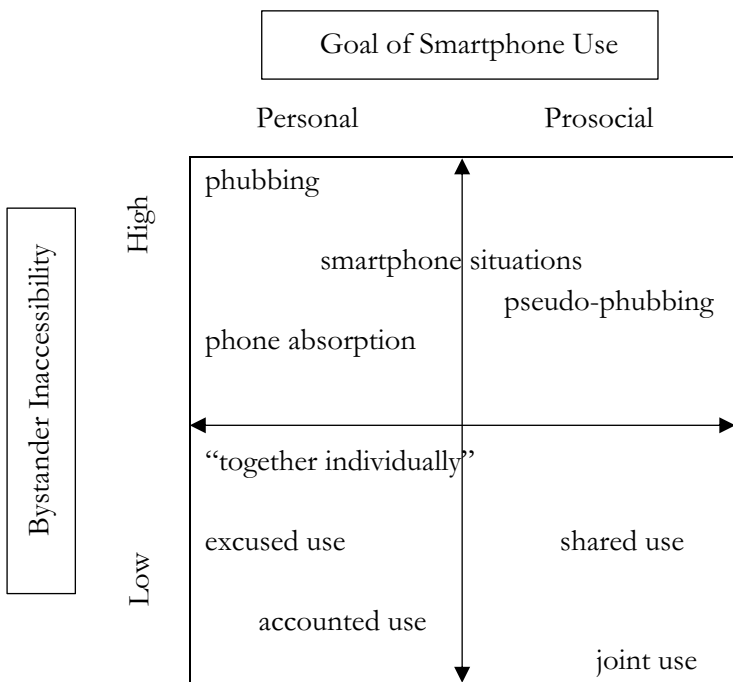
Figure 6.   Dual dichotomy of ambiguity in smartphones and face-to-face encounters

Situations of asymmetrical solo smartphone use were in this dissertation defined as "smartphone situation" (see Chapter 1.6). However, it seems possible that the smartphone situation truly becomes a "situation", in the sense of hinting for trouble, predominantly when high BI is present (see Article II). This is because accurately understanding any events taking place in a smartphone situation, including the possible prosociality of the smartphone use, are dependent on understanding the smartphone activity. As events get their meaning through the context of the situation, and that situation gets its meaning through activities taking place in it, high BI might make smartphone activity problematic. However, even high BI smartphone activity can, and often is (see Article II), if nothing suggests otherwise, imagined as

benevolent and rational in relation to the ongoing interaction, even if it cannot be observed to be so.

The relationship one has with other participants surely can also make a great difference (cf. Roberts & David, 2017; Tiilikainen & Arminen, 2017). Smartphone use within intimate relationships is not the same as using them in public places, where one is observable to others, whether perceived to be "with" them or not (cf. Goffman, 1971, 1963). In many situations almost any type of smartphone use can be interpreted in various unproblematic ways (Henriksen et al., 2020). The divisions of solo vs. joint, symmetrical vs. asymmetrical, as well as the goals being personal or prosocial, and bystander inaccessibility being high or low, might, together with attention to relationships between the participants, help to uncover exactly when and how socially inacceptable forms of smartphone use are likely to arise.

4.6   All that is done by "nothing"

When a person in a smartphone situation is privately using their device for personal goals, they might be thought to be doing nothing to collocated others. However, in his response to Rossano's and Stivers' (2010) study on gaze, Schegloff (2010) wrote:

> Withholding a response is doing an action—for example, "snubbing" the summoner, i.e., rejecting the move to open an interaction or confirm one's presence and in-principle availability.

Several moments in interaction are such that "doing nothing" takes a strong stance on something. This is seen in the public discourse and studies on phubbing as well. They both reflect a harsh judgement for inactivity of a conversational partner on whatever is going on in a face-to-face situation. The importance that "nothing" may have is also depicted in Goffman's writings on civil inattention, and how the lack of activity and engagement by strangers suggest that we have nothing to fear from them, no reason to suspect their intentions (Goffman, 1963, pp. 83–148). This basic element of successful society is constructed, not through action, but inaction. In Article II we saw how differently the same interactional inaction was viewed depending on the context of the inaction: weather the interactionally inactive person was reading a newspaper or using a smartphone.

Part of the norm of accountability is that we need to stay aware of the actions and the settings amongst which we are, regardless of whether we aim to participate in

them or not. Our mere being in accountable (cf. Garfinkel, 1967; Goffman, 1955, 1971, 1963). Mere being is participation, and others treat us accountable to orient to the situations we inhabit, as social encounters, and therefore, to stay aware of the obligations and rights we have in each situation, and how they might change moment to moment. We continuously showcase our take on these rights and obligations, regardless of whether we want to do so. This coincides with Goffman's description of face as a positive value derived from a line, which we cannot avoid taking in social encounters:

> Every person lives in a world of social encounters, involving him either in face-to-face or mediated contact with other participants. In each of these contacts, he tends to act out what is sometimes called a *line*–that is, a pattern of verbal and non-verbal acts by which he expresses his view of the situation and through this his evaluation of the participants, especially himself. Regardless of whether a person intends to take a line, he will find that he has done so in effect. The other participants will assume that he has more or less willfully taken a stand, so that if he is to deal with their response to him he must take into consideration the impression they have possibly formed of him. (Goffman, 1955, p. 213)

In case of interactional inaction by smartphone users, others need to form understanding of what this inaction is about. They need to take a stand on the appropriateness of phubbing by imagining something about the activity the smartphone user is doing. This is necessary because, as Article II suggests, different imaginations result in very different "lines", which "other participants will assume that he has more or less willfully taken" (Goffman, 1955, p. 213).

4.7 Togetherness in the Smartphone Age

Oxford Dictionary (2019) defines 'togetherness' as: "the state or condition of being together or being united; union, association" and "the fact of getting on well together or being well suited to one another; a sense of belonging together, fellowship." Goffman (1964, p. 135) described the minimal requirements of togetherness in his definition of social situation as "an environment of mutual monitoring possibilities, anywhere within which an individual will find himself accessible to the naked senses of all others who are 'present,' and similarly find them accessible to him". Tomasello (1999) posits that when we see others engage with objects, we do not only see what the objects afford (Gibson, 1977), but through placing ourselves in others' positions (cf. Mead, 1934, see also "reflexivity" and "accountability" in Chapter 1.3.1), we also see the apparent intentions they have in relation to the objects they use, which appear

to us as "intentional affordances" of the objects. However, the "monitoring possibilities" mentioned by Goffman are limited in relation to recognition of intentional affordances of object-uses we know nothing about. Clearly perceiving active object-use, but of an unknown nature, appears as a peculiar social event in light of these theories. This coincides with some respondents in Article II who saw the physically more active nature of smartphone use as a relevant factor in why they perceived the annoyingness of phubbing being higher than that of the magazine situation (Nd=8, Nnd=2, in Article II, Chapter 3.2).

Could it be that social situations featuring smartphones only become a "situation" in the negative and moralistic sense that "phubbing" addresses it, when a) smartphones are engaged with asymmetrically, and b) bystander inaccessibility is high? In this dissertation such situations are called "smartphone situations" and some support is presented for their special nature. It also seems possible that BI could be less socially relevant if participants share an understanding of having co-operatively entered a state where personal smartphone use is the common main involvement and the face-to-face situation consists a side involvement (cf. Tiilikainen & Arminen, 2017). However, in situations where such hierarchical order has not been produced, BI may challenge shared understanding of the situation as each situation reflexively gains its meaning through the activities performed in it (See chapter 1.2.1).

In Article II some respondents explained not knowing why they felt smartphone situations to be more annoying than the magazine situations. Others said smartphone user just "somehow" seem "less present", and that made phubbing more annoying. Perhaps, like these responses seem to suggest, we feel togetherness with others, not just through physical proximity, but also through mutually recognized access and understanding to each other's experiences. When being able to access the same knowledge and experience of a situation, as well as each other's orientations towards what is going on, we are together, even if we would not share the same space, or perhaps even time. The less these are mutually accessible, perhaps the less we feel together.

4.8   Strengths, weaknesses, and directions for future research

Main strengths of this dissertation are its introduction of new results and concepts on a field that it shows to suffer from a lack of quality in both. Also, the development of smartphone moves as a new way of analyzing embodied smartphone use can potentially contribute much to research as well as design (Mantere, 2020; cf. Olsson et al., 2019), especially when the concept of bystander inaccessibility is also considered. Article II innovatively uses EM to formulate and interpret research with methods that EM typically does not engage with (see Heritage et al., 2007 as the exception). The main weakness of Article I is that it does not present the level of transcription necessary to analyze smartphone use in social situations in detail. It could also have included more emphasis on the CA concept of preference, and how the phenomenon of sticky media device relates to it. The second article is limited by its small data and by only using Finnish university students as respondents. It also does not include measures that might measure other phenomena more closely related to bystander inaccessibility, and therefore investigate how the new measure relates to them. Article III is limited by its data excerpts all coming from the same conversation. It might also be questioned if the classification of the 13 smartphone positions should have also included a position to describe smartphone moves such as when one offers their smartphone to another person, themselves completely relinquishing the device.

Article II raises the possibility of social intelligence being leveraged to imagine socially acceptable reasons for phubbing. This could explain why social intelligence had no significantly different correlations with smartphone-annoyance, and magazine-annoyance, in Article II—even though phubbing itself correlated with lower social intelligence, and previous research, as well as the results of Article II, strongly suggest people to dislike phubbing. Might the tendency to look for rational and benevolent explanations for ambiguous actions (cf. Garfinkel, 1967) furnish people to use their intelligence to assume important and understandable reasons for smartphone user's non-responsiveness? Might some personalities be more likely to seek these "understandable reasons" than others, for instance people with higher levels of agreeableness (cf. Çikrikci et al., 2019; Erzen et al., 2021)? Does different experiences of cognitive load, or situations that differently induce cognitive load, influence this, and could this be experimentally investigated (cf. Hsieh & Tsai, 2014)?

Future studies could also use varied methods in exploring the clear differences Article II found between phubbing and being ignored due to another type of media use. It is plausible that simply asking people is not enough. Garfinkel (1967, p. 36) describes the "'seen but unnoticed,' expected, background features of everyday scenes" to be used "as a scheme of interpretation" by a member of society. Garfinkel (1967, pp. 36–37) continues:

> With their use actual appearances are for him recognizable and intelligible as the appearances-of-familiar-events. Demonstrably he is responsive to this background, while at the same time he is at a loss to tell us specifically of what the expectancies consist. When we ask him about them he has little or nothing to say.

Some of the laconic responses in Article II, especially prevalent among the respondents who evaluated smartphone and magazine situations to be equally annoying, might reflect this. BIE could be developed to better extract the role bystander inaccessibility might play in phubbing-annoyance. This could begin with an exploratory factor analysis on the relevant themes reported in this study, and by preparing a larger set of cartoons for stimulus material that varies these themes.

It would also be important to study more thoroughly how smartphone moves may enact shifts between states of talk (SoT) and continuing states of incipient talk (CSIT) in different settings. In their article "Do Continuing States of Incipient Talk Exist?" Berger et al. (2016) pointed out that although the concept is popular, it was not actually formulated by empirical research. The concept of CSIT originates from concluding remarks of Schegloff and Sacks (1973) "Opening up Closings" where they reported to have studied "closing a conversation that ends a state of talk" (Schegloff & Sacks, 1973, p. 324). Schegloff and Sacks remarked that in their data of phone calls, SoT typically coincides with the encounter itself. CSIT was used to define the types of social situations where the regularities they found, did not necessarily apply (Schegloff & Sacks, 1973, pp. 324–325):

> It [their investigation of ending a conversation] does not hold for members of a household in their living room, employees who share an office, passengers together in an automobile, etc., that is, persons who could be said to be in a 'continuing state of incipient talk'. In such circumstances, there can be lapses of the operation of what we earlier called the basic features; for example, there can be silence after a speaker's utterance which is neither an attributable silence nor a termination, which is seen as neither the suspension nor the violation of the basic features. These are adjournments and seem to be done in a manner different from closings. Persons in such a continuing state of incipient talk need not begin new segments of conversation with exchanges of greetings and need not close segments with closing sections and terminal

exchanges. Much else would appear to be different in their conversational circumstances as compared to those in which a conversation is specifically 'started up', which we cannot detail here. (square brackets added)

Mistakenly, later work often refers to CSIT as if the concept was formulated through empirical study. Berger et al. (2016) call out for future work to offer empirically based reflections on what might be meant by this supposedly so central concept in CA. CSIT's centrality is evident in the number of references to it in the literature (cf. Berger et al., 2016), and also in Schegloff' (2010) himself putting it at the center of his critique of Stivers' and Rossano's (2010) work on gaze, claiming that the difference between CSIT and SoT is crucial to practically any CA endeavor. This dissertation has offered a toolkit and preliminary findings for analyzing CSIT and SoT in the smartphone era, as well as the shifts from one another that inevitably must take place in almost any definition these concepts might have. Much is still however left uncovered. A collection-based analysis of smartphone situations at home and at work would clearly be useful. Describing more conversational settings where participants are using their smartphones in a kind of "together individually" (Tiilikainen & Arminen, 2017) would also contribute to this enterprise. Whether, and in which circumstances, commencing storytelling transforms CSIT into SoT would also merit much more study than was possible in the restrains of this dissertation.

Article I showed how the participation of a smartphone-using family member required patiently intensified invites for participation, even when the participation was principally never rejected, even ultimately wholeheartedly afforded. Together with the results of Articles II and III this raises questions on the experiences of togetherness in situations of personal smartphone use vs. situations where collocated others are not engaged with bystander inaccessibility-inducing objects. How is togetherness and loneliness related to epistemic access on activities of co-present others? These and many more questions are to be explored in future research if we want to be ready to orchestrate our lives and institutions with research-based understanding in a future where mobile metamedia, such as XR applications and wearables, are predicted to penetrate societies even more than they already do.

4.9   Mitigating Unwanted Effects of Collocated Smartphone Use

The first practical contributions of this dissertation are the analytical lenses differentiating smartphone situations from other situations of smartphone use in

presence of other people. The aspects of solo vs. joint, personal vs. prosocial, symmetrical vs. asymmetrical, and hidden vs. accessible smartphone uses may attune people to possible problem areas and help them to realize the opportunities for transforming such situation. As the smartphone positions are shown to be socially relevant, it follows that being aware of one's smartphone moves may increase possibilities for socially successful action. Teaching people the language of the 13 smartphone positions may attune their attention to their smartphone behavior, therefore increasing their ability to manage when and how they enact their smartphone moves. This might function as a kind of non-clinical version of psychoeducation (cf. Bonsack et al., 2015), perhaps implemented in primary schools. Increasing body awareness with techniques such as mindfulness meditation (cf. Weng et al., 2021) might also prove useful in preventing smartphone -related conflicts, especially when combined with specific smartphone move -related imaginary.

A simplistic smartphone etiquette that dictates that smartphones should not be used in social situations seems insufficient in light of the results of this dissertation. A more useful approach would be to picture social intelligence as a trainable skill (cf. Bilous & Bielova, 2016), and sticky media device, bystander inaccessibility, and smartphone moves as crucial elements to be aware of. Today's socially intelligent actor needs to acknowledge the social significance of their own smartphone engagement, as well as the nature of the situations in which they participate. A smartphone user who is attuned to the possible negative consequences of bystander inaccessibility may easily mitigate it, by merely revealing the screen to others through moves like HoldManipulate (HM) – TableManipulate (TM) or HandFace (HF) – TableUp (TU), even without obligating others' participation in joint use. They may also give verbal or non-verbal accounts for their sudden smartphone engagement, such as a Pocket (PC) – HandFace (FH) move, when such moves occur in the kinds of conversational moments, where they do not seem to be occasioned by goals of the face-to-face interaction. Recognizing such moments, and recognizing when smartphones are treated as primary involvements, and when face-to-face interaction is primary, are important social skills in today's world. Though larger societal structures and shared norms surely exist and provide intelligibility in all face-to-face encounters, the reality of each social situation is principally constructed by the participants in it, and the "rightness" or "wrongness" of smartphone use, is defined by attunement to what one's coparticipants display as priorities in that situation.

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PUBLICATION
1

Sticky Media Device

Eerik Mantere & Sanna Raudaskoski

9.   The sticky media device*

Eerik Mantere and Sanna Raudaskoski

INTRODUCTION

The dynamics of day-to-day interaction are based on various shared norms of conduct. These common rules are intertwined with the moral structures that members of society are expected to follow. In this chapter, we show how a parent's smartphone use can bring additional ambiguity and difficulty to communicating with his or her child and in fact challenge the conventional normative and moral structures of social actions. Because parent–child interaction is so crucial for the development of children, the challenges posed to it by ubiquitous media devices are one of the pressing issues of our time.

   In this chapter, we introduce a new concept, namely the 'sticky media device', which depicts how a media device appears to a person seeking face-to-face interaction with its user. Hence, it refers to a situation in which problems can be seen in acquiring the smartphone user's orientation for face-to-face interaction, which, even if momentarily gained, readily returns back to the device.

ADJACENCY PAIRS AND MORAL ACCOUNTABILITY

In his research on social order, the founder of ethnomethodology, Harold Garfinkel, discovered that members of the same culture share normative assumptions about what is the 'normal' way to act in a given situation. The intersubjective understanding and explaining of day-to-day social activities are in fact only possible through these shared assumptions (Garfinkel, 1967; Heritage, 1984).

   As we grow up and are socialised in the conventions of a certain community and culture, these shared expectations become the unconscious guideline for our behaviour with others. At the same time, they guide the moral stances taken by the participants in each interaction. When we greet someone we know, the expectation is that they will greet us back. If that

is not the case, we see it as an exception to the norm of polite behaviour, come up with explanations and often become disgruntled: 'What's up with him? He didn't even say hi to me'.

According to conversation analysis, which is the study of naturalistic interaction based on ethnomethodology, social action is realised through adjacency pairs. These pairs – like issuing and returning a greeting or a question and answer – are routinely expected to appear together (e.g., Sacks et al., 1974; Schegloff, 2007, pp. 13–21). Together, the people of any culture construct the dynamics of conversation in such a way that the preferred response to the 'first-pair part' of an adjacency pair is a response that does not cause trouble or difficulty for the ongoing interaction (Brown and Levinson, 1987). In other words, the preferred response (the 'second-pair part') to a first-pair part like an invitation would be accepting the invitation. A response that is not in alignment with the interactional expectations – in other words a dispreferred second-pair part – usually manifests with moments of silence in or between the turns the speakers take. In addition, articulations of hesitation or other sounds that delay the giving of a response are characteristic of a dispreferred turn, which is often produced with mitigations and accounts (Schegloff, 2007, pp. 58–60). Conversation analysis focuses on the detectable ways people produce, reproduce and orient to the normative structure of interaction, not on what people 'really want' or 'really mean'.[1] It is in these formal structures that the meaningful social action is carried out. As children, when we learn the conventions of interacting with others and taking part in conversation, at the same time we learn the norms of appropriate behaviour. We become habituated and adapted to the common customs and moral obligations of everyday actions.

Request is one of the fundamental social actions in human interaction and adjacency-pair practices. At an early age, we learn that requests should always be answered and the expected answer is acceptance. When rejecting a request, we learn to give accounts and explanations. A request does not always have to be in the form of a question. Depending on the context, a variety of utterances can be understood as requesting something (Schegloff, 2007, p. 8). Already at the age of three, we can interpret social situations so skilfully that we can discriminate between direct and indirect requests (Wells, 1981, p. 43). Children usually acquire this interactive know-how mainly from their parents, though other adults and children also play their part. While growing up, we become increasingly knowledgeable of the ever-increasing number of rules necessary for understanding how to truly be adept in the social world of adults.

One example, especially relevant for the analysis to follow, is the marked difference between the act of request and its close cousin, the command.

When uttering an imperative command, or a directive, the action is more about informing than asking, and there is the presumption that the person giving the directive has a legitimate right to regulate and control the actions of the other. A request, on the other hand, does not directly order someone to do something; it also takes into account the possibility that the other may decline (Craven and Potter, 2010). One way that this is seen in day-to-day conversations is that requests are usually preceded by so-called pre-sequences (Schegloff, 1980; 2007, pp. 28–9) that function as ways to protect the 'faces' (Goffman, 1955) of the participants from the discomfort that a rejecting response might cause. It is common, for example, to ask 'Do you have any plans for the evening?' before inviting someone to go see a movie together. It is important to note that this so-called 'face work' is not merely done out of shyness or indecisiveness on the part of the requester; it generally serves the interests of both participants.

DATA AND METHODS

The phenomenon of the 'sticky media device' will be elaborated on with the help of transcribed excerpts from the dataset of the project 'Media, Family Interaction and Children's Well-Being', conducted at the University of Tampere, Finland. The data were collected during 2010 and 2011. The parts of the data utilised in our chapter are the video recordings made in the homes of 26 families with children. They were performed with four – or, in rare cases, three – video cameras installed upon tripod stands. The positioning of the cameras was planned together with the aid of the parents in attempt to cover the most relevant locations from the viewpoint of parent–child interaction and digital media use. In most cases, they were installed in different rooms and have therefore created a dataset that is quite unique in its nature. It often covers simultaneous but different scenarios taking place in two or more separate but sometimes also partly connected rooms within a household. The dataset consists of 665 hours of video footage, which is the sum total of the recordings of all the video cameras, but the data actually only cover a 186-hour time span.

The families taking part in the research were recruited through kindergartens and primary schools in both high- and low-income areas. In each family there was a five- or a 12-year-old child who was later interviewed for a variety of aspects relating to media use and well-being. The cameras were turned on for one day from the time that this focal child came home to the time they went to sleep. The day of the recording was always chosen to be what the parents considered a 'normal day', and the family was instructed to spend the day as usual. This chapter

will concentrate on a short episode in which a child of 12 is seeking her mother's attention while the mother is simultaneously using a smartphone. In the excerpts we present, the child makes several requests to her parent. Answering the requests requires the mother to at least momentarily disengage from the ongoing interaction with her smartphone.

We focus on what is commonly referred to as 'talk-in-interaction' and base our analysis on the principles of Garfinkel's ethnomethodology and the tradition of conversation analysis. This means that we look at the data as if we were merely trying to see them more clearly and not in an attempt to interpret them with preconceived concepts and theories that offer hypotheses about the reasons and 'real meanings' behind the observable interaction of the participants. The idea is that the way each participant in the conversation is feeling or thinking about something they themselves or someone else has said or done is only relevant if it is produced as an observable action – be it verbal or non-verbal. Whatever is going on in the inner lives of participants – if not seen in any way in the actual interaction – would necessarily be analysed by the researcher only through preconceived notions and general theories. These theories might be useful in another kind of study utilising, for example, the hypothesis-testing methodology of experimental psychology, but they do not really contribute much in the analysis of how actual real-life interaction episodes are produced by people living their daily lives.

It is not assumed beforehand what elements will turn out to be relevant in a given social situation. Careful turn-by-turn study of the progression of a communication episode can reveal the ways that participants themselves relate to what is happening between them, but very little should be assumed before actually having gone through the case with painstaking care. This accuracy is made possible by the tradition of transcription in conversation analysis. Even coughing, silences and breathing are transcribed, as it might be the case that they turn out to play a role in the construction of the interactive episode.

Repeated viewing of the corresponding video material, together with an accurate transcription of it, revealed to us a collection of patterns and aspects we call the 'sticky media device'. Even though these elements are also present in many other places in the data, we chose this original case of a 12-year-old and her mother for analysis and presentation due to its particular richness in various aspects of the phenomenon in question. In addition, we are able to perfectly see and hear both the mother and the child; they are the only people in the apartment during the conversation, and their interaction is not affected by anything outside our field of interest. There are no pets or other family members joining the situation halfway through, and the aspects of the sticky media device can be

exceptionally clearly shown and explained by the analysis of the chosen case.

THE CASE OF A MOTHER, A DAUGHTER AND A SMARTPHONE

Here, we elucidate a situation in which a daughter is requesting her mother to participate in a joint activity and has to compete for attention with her mother's smartphone. The facets of this interactive event are explored through the use of five data excerpts, each being a direct continuation of the former. The excerpts show how difficult it can be for a child to get the attention of their parent when the parent is simultaneously using a smartphone (cf. Radesky et al., 2014). At first, the 12-year-old Anu (the name has been changed) and her mother are sitting at the kitchen table facing each other going about their own businesses. The mother finished eating about 20 minutes before the beginning of the excerpt. She has remained at the table to go through some advertisements and is now doing something with her smartphone. Anu is drawing pictures of supermodels in her notebook. Anu asks her mother to evaluate the drawing and the mother complies, but only after extra effort is applied on Anu's part.

Extract 1

```
1  Anu:      eihän tää oo nii hirvee,
             this isn't so terrible is it,
2            (1.1)
3  Anu:      #äiti#,
             #mother#,
4            (2.1) ((the mother looks at the picture))
5  Mother:   [mt' ↑ei::. se on ihan (.) kiva.
             [th' ↑no::. it is quite (.) nice.
             [((the mother's gaze returns to the screen))
6            (7.5) ((the mother continues to tap her smartphone but glances
7            at the daughter as Anu browses through the drawings))
```

The extract begins by Anu inviting her mother to participate in a joint activity. After finishing a drawing of a supermodel, she looks at the drawing, wipes it with her hand (as if removing the residue of coloured pens) and asks her mother: 'this isn't so terrible is it' (line 1). The turn is designed in a way that it invites the receiver to produce a particular kind of response, in this case the recipient's agreement to the negation 'isn't. . .is it'. The question is a first-pair part of an adjacency pair and anticipates some kind of an answer to follow. As Sacks (1987, p. 57) remarks, if the

question is built in such a way as to exhibit a preference between 'yes' and 'no' responses, this is the choice that should be preferred by an answerer. This holds true for both 'yes' and 'no' preferred answers. A preferred answer should also be produced instantly after the first pair part. Here Anu produces her question in a way that obliges her mother to evaluate the picture, and the expected response would be something like 'no, it is not (so terrible)' (cf. Sacks, 1992, p. 414; Heritage, 2002).

However, the mother does not produce any answer in the first 'transition relevant place' (TRP),[2] that is, in the place where the answer should usually be produced, immediately after Anu's question (the 1.1-second pause in line 2). Anu works further to gain her mother's attention and uses the summons 'mother' (line 3) as a means to allocate attention and oblige her mother to answer. Now the mother raises her head and leans forward towards the notebook, looks at the picture (which is upside down from her perspective), and answers: 'th' ↑No::. it is quite (.) nice' (line 5). The mother's gaze returns to the screen of the phone when she ends the first stretched word 'no'. The mother says the rest of the utterance ('it is quite nice') when she is again looking at the screen of her smartphone (Picture 9.1).

Thus, the mother fails to answer in the first interactional place expected (line 2), but after Anu's summons produces an utterance that – from the perspective of normative sequence organisation in talk-in-interaction – is 'right'; it is the preferred answer. Then again, in the production of the turn there are classical marks of dispreferred answers: delaying the answer, sucking teeth (th), stretching the word 'no' and the micro pause before the
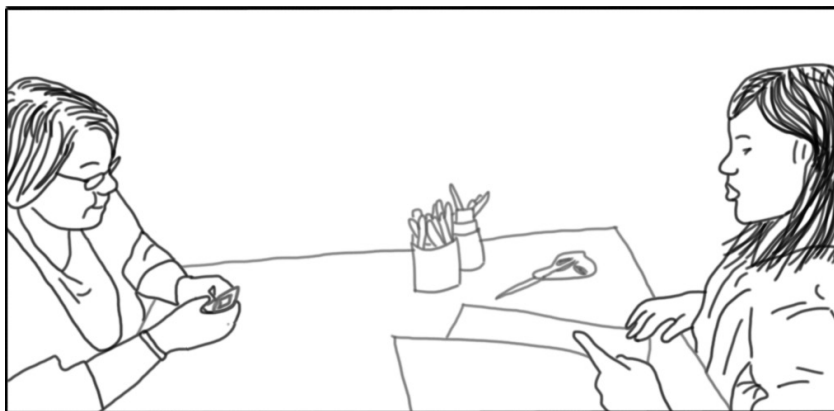
Picture 9.1   The mother's gaze is back on the screen at the end of the word 'no::' (line 5)

word 'nice' (cf. Pomerantz and Heritage, 2012). One might say that these are all connected to mother engaging in the task of evaluating the picture that Anu is showing to her and thus are actually part of her producing a preferred second-pair part to Anu's request. Obviously it is the case that the mother could not evaluate something she hasn't looked at so it is reasonable to assume that at least part of the delay before the mother begins the word 'no' is due to the task of evaluating. However, missing the first TRP as well as all the other classical signs of dispreference still go unexplained. In this case the fumbled answer is not in fact connected to the sequential dynamics of conversation and the content of the utterance (i.e., making a choice between a preferred 'no' and dispreferred 'yes' answer), but is actually caused by the fact that mother's attention is divided: she is orienting both to the interaction with Anu and to the simultaneous interaction with her smartphone (cf. Haddington and Rauniomaa, 2011).

Schegloff (2007, p. 62) mentions that on top of the groundings of preference found within a single sequence in talk-in-interaction, like the aforementioned classical dispreferred markers, preference is also constructed based on the progression of the course of action taking place. There are sequences, like for example the summons–answer, that are designed to mobilise the attention of one or more recipients for some further action. Whether this predicted future action will actually take place or not is contingent on the success of the summons sequence in attracting the attention of the recipient. Some sort of 'go-ahead' response is preferred, since it provides space for the next step to be taken. Here Anu succeeds in getting her mother to evaluate the drawing, but can only catch her attention for a minimal time. This is obvious by the way her mother already turns back to the phone while producing her reply.

Anu invites her mother to participate in the joint activity in a situation where mother's attention is preoccupied with the smartphone. The mother has not only directed her gaze at the screen but is also using the device with both of her hands. As mentioned, while answering Anu's question, the mother goes back to using her smartphone, most likely to continue the activity that was interrupted by Anu's request, and Anu begins to browse through her notebook.

However, even though the mother did not stop using her phone, Anu's request to evaluate the drawing and mother's answer to it – albeit accomplished by Anu's extra interactional work – did create a communicational space that Emanuel Schegloff and Harvey Sacks (1973, pp. 324–5) call the 'continuing state of incipient talk'. By this term, they mean, for example, a situation within family life where everyone can be passing time in the same room and each be going about their own business, but may also initiate conversation or continue previous topics with

others, even after longer gaps, without having to specifically begin or end the conversation each time. By being in the shared space, the individuals present assume that everyone recognises the possibility of this kind of frame of interaction and no one treats sudden utterances by others as weird or non-normative.

In our example, the mother may orient to the possibility of a continuing state by glancing over to Anu while still using her smartphone (lines 6–7). Hence, when Anu asks her mother to look at and evaluate one of her drawings, her mother's agreement generates a social reality in which she in principle can and would be interested in evaluating Anu's pictures. From what follows, it can be interpreted that the first sequence that began the conversation removed obstacles for new and more specific requests to be made. Thus it functioned as a kind of a 'presequence'; it was preliminary to a more demanding request (cf. Schegloff, 2007, pp. 28, 62).

Extract 2

```
6                (7.5) ((the mother continues to tap her smartphone but glances
7                at Anu when she browses through the drawings))
8     Anu:       selaa näitä tästä eteenpäin?
                 browse through these from here onwards?
9                (1.3)((Anu stands up and walks towards her mother))
10    Anu:       [ja s:ano mulle mikä näistä on susta <hianoin>.
                 [and te:ll me which one you think is <the nicest>.
11               [((Anu walks next to her mother, places the notebook on the
12               table and her hand on mother's shoulder))
13    Mother:    .hhh (.) oh[hhhh
```

After asking her mother to go through the drawings (line 8) Anu positions herself right next to her mother, placing the notebook on the table immediately adjacent to her mother's smartphone, which is the current focus of her mother's gaze. While still walking, she continues to speak: 'and te:ll me which one you think is <the nicest> (line 10). However, the mother does not reply to Anu's request but sighs loudly (line 13, Picture 9.2) while still keeping her gaze on the screen of the phone. The sigh might be an expression of the mother's problematic situation of having to take part in two rival activities – that is, continuing what she is doing with her phone and starting to do what Anu requests.

Anu's request for the mother to begin looking and evaluating her drawings would require her mother to handle the notebook and put the smartphone away. In other words, the mother would have to stop whatever she is currently engaged in with the smartphone. Anu's next turn, which is a more precise request than the earlier one, overlaps her mother's sigh.

Picture 9.2   The mother's sigh

Extract 3

```
13   Mother:   .hhh (.) oh[hhhh
14   Anu:                  [sanot (.) ykkösestä viiteen kuinka monta tähteä
                           [tell (.) how many stars out of five you
15             annat tälle?
              give to this one?
16             ((Anu taps her mother's shoulder while speaking))
17             (2.0) ((the mother looks at the picture, starting to lay her
18             phone aside with her right hand, but draws it back close to her
19             body, grabs it with both hands and turns her gaze back on it))
```

When Anu takes her turn in line 14, she is in fact not only making her
request more precise but also transforming it: '[tell (.) how many stars
out of five you give to this one?' (lines 14–15). Here Anu is no longer
asking her mother to take hold of the notebook and browse through it
(in order to see which one is the 'nicest') but suggests that she should
concentrate on one specific picture. While talking, Anu is holding one
hand on the notebook and rhythmically, but lightly, tapping her mother
on the shoulder with the other. This functions as an efficient focuser and
the mother turns her gaze towards the picture, simultaneously starting
to put her smartphone on the table. However, still looking at the picture,
mother pulls the smartphone back, very close to her body, soon refocuses
her gaze on it, and again takes hold of it with both hands (Picture 9.3).
Thus, despite the momentary orientation towards the notebook, prompted
by Anu's taps on her shoulder, the mother still does not produce an answer
but actually returns to attending to the device.

Picture 9.3   The 'sticky' phone will not disengage from the mother's fingers

However, Anu does not give up, but nudges her mother strongly on the arm saying: 'mother?' This can be seen in Extract 4 (line 20) and Picture 9.4.

Extract 4

   20   Anu: äiti?
                         mother? ((nudging her mother's arm))

Anu's nudge as an embodied directive is an extreme way for the child to get the attention of the parent in talk-in-interaction. However, rather than just a single occurrence in an action sequence constructed by an adjacency pair, embodied directives are more like trajectories of action in progress (Goodwin, 2006; Cekaite, 2010). The trajectory leading to the nudge is co-constructed with verbal and embodied practices, and it is in the service of the whole 'project' of the activity that is going on, not only of the adjacent actions (cf. Levinson, 2013). From the four excerpts above, it can be seen that the nudge is related to Anu's many attempts to get her mother's

Picture 9.4   Anu nudges her mother's arm

attention to focus on the notebook instead of the smartphone. The physical touch and the word 'mother' uttered with a pleading intonation get the mother to finally release the smartphone and concentrate on the picture Anu is trying to show her. This is shown in Extract 5.

Extract 5

```
21              (0.4)
22   Mother:    oh-
                wel- ((the word is cut just a bit short and ends with holding
23              of the breath))
24              0.8) ((mother puts the mobile far from her, on the edge of the
25              table and looks at the picture))
26   Mother:    @tää on must muuten niinku (.) tosi makee?@
                @I think this is otherwise like (.) really cool?@
27   Anu:       m-hm?
```

The single dialogue-particle 'well' (line 22), which Anu's mother utters just before she moves the smartphone far from herself, manifests a transition to a new activity (cf. Sorjonen, 2002). The mother's 'well' ends with a cut sound and the typical way of producing this word is replaced by a holding of the breath at the end. This makes it seem like there is some kind of complex relation to the transition. The mother then puts the smartphone on the table as far from herself as she can, focuses on the picture and produces a verbal evaluation: 'I think this is otherwise like (.) really cool' (line 26). In her next turn, Anu acknowledges her mother's evaluation with an approving minimum input: 'm-hm?' (line 27). For the following ten or so minutes, not included in the data excerpt, the mother goes through Anu's pictures, evaluating them with an upbeat style. She praises one of costumes that Anu has drawn as being just as stylish as those in the 'Supermodel' TV show that Anu was watching earlier that day. During this time, Anu keeps chuckling, smiling and laughing regularly.

CONFLICTED BY TWO SEPARATE INTERACTIONS

An interactive situation can have various interactive resources that are relevant for the ongoing action. These resources can be conceptualised as semiotic fields (Goodwin, 2000). A semiotic field describes a collection of aspects of the human body and its environment that are significant to a specific social action. This collection can consist of elements, such as speech, gestures, posture, material and technological objects, arrangements

in space, and so on. Goodwin emphasises that speech cannot be dissected from the other material and bodily components of the interaction: they all co-create the semiotic fields through which interaction takes place. In interaction, many different semiotic fields can be simultaneously present, but they may not all be active at the same time. Those semiotic fields that the participants are currently orienting towards form the 'contextual configuration' of the ongoing social action (Goodwin, 2000, p. 1490).

Changing the contextual configuration requires orienting towards new semiotic fields. In our example, while trying to get her mother to attend to the joint activity, Anu also had to try to alter the contextual configuration that her mother was currently acting in. A central semiotic resource in that contextual configuration was the screen of the smartphone. At first, Anu asked for the evaluation of just one picture. When Anu later asked for more thorough participation, the initial request functioned as kind of a 'foot in the door' (Freedman and Fraser, 1966), as part of a course of action requesting the mother to join a more long-term joint activity (cf. Schegloff, 2007, p. 62; Levinson, 2013, p. 126).

In the usage of a smartphone, the action taking place is structured in turns undertaken by both the device and the human being. This is true even if the device is not being used to engage in interaction with another person, such as in chatting via an application. The use of a smartphone – or any other ICT device – has a structure of 'adjacency pairs' so that even the machine is in a way 'expecting' certain relevant actions from the user at certain relevant times (Suchman, 1987). This means that the device always reacts in some way to the user's actions. Even an absence of reaction is a response. The information from the device directs the action, just as other participants' actions do in a human–human interaction. Although it is the human participant that reads the meaning into whatever the technologies do or display, this interpretation work resembles what people do when encountering each other, and is in this way interactionally bonding (Raudaskoski, 1999, p. 17).

In order to challenge her mother's current action, Anu has to get her mother's attention away from the smartphone. Anu's mother is required to change her posture and direction of gaze to signal to Anu that she is attending to the same participation framework with her daughter and the notebook (cf. Goodwin, 2000, p. 1500). This cooperative stance (Goodwin, 2007, p. 62) is not accomplished easily; it takes plenty of work from Anu. She uses – among other things – several deictic expressions like 'here', 'these' and 'this one', and thus builds a competing focus of attention to the smartphone (cf. Goodwin, 2007, p. 55). In the progression of the episode, Anu's verbal requests evolve to be more and more imperative, while at the same time she adds other modalities into them: she moves next to

her mother, taps on her mother's shoulder, nudges her and positions the notebook in her mother's field of vision.

THE STICKY MEDIA DEVICE

Most of us have found that communication with a person using an ICT device – like a smartphone, tablet or computer – can sometimes be quite frustrating. We might have to wait for the response or feel we have not been heard at all. We might also get unclear or incomplete responses. The conversational counterpart's orientation is not easily taken from their device, and while their attention may be momentarily disengaged, it nevertheless might return back to the device without delay. This is a common phenomenon, but to date no detailed description of it has been made, so we suggest that naming it will serve both scientific and lay communities. We call it the phenomenon of the 'sticky media device'. The concept depicts the situation from the viewpoint of the person who is inviting the user of the media to engage in face-to-face interaction.

The stickiness of the smartphone shows in the interaction between Anu and her mother particularly clearly when the mother begins to put away her smartphone for the first time (Picture 9.3). She cuts her movement short and pulls the smartphone back close her body, takes hold of it again with both hands and focuses her attention on it once more. It genuinely looks like the smartphone cannot easily be dislodged from the mother's hands. In extracts 4 and 5, Anu's actions become increasingly demanding. After this, the sticky smartphone is finally released. The stickiness of a device can be conceptualised as a difficulty to change the contextual configuration. As discussed earlier, the device and its user form an interactive relationship. The contextual configuration that the mother is orienting to has been formed in relation to the events taking place with the smartphone and what the mother – and the device – predict will happen next (cf. Arminen, 2005, p. 203; Raudaskoski, 2009, pp. 145–76). This interactive relationship requires the user to engage in cognitive processing, and disengaging from it might not happen easily – especially if the task at hand is unfinished.

With a media device the rhythm of the interaction is different from non-technology-mediated human interaction. Also, by and large, only very simple actions can be executed with a media device without it starting to hamper other consecutive activity. In face-to-face interaction, the pauses between and within turns are subject to precise social control, and having too many or too long pauses is considered problematic for the joint activity. Any action with the smartphone that requires even slightly longer orientation by the user influences the simultaneous

conversation in the form of stammering, hesitation, delays and repetitive beginnings. In fact, the simultaneous performance of several different conscious activities rarely truly takes place. Instead, people synchronise concurrent activities with an overlap, one immediately after another, and this has an effect on construing of all of the ongoing activities (Levy and Gardner, 2012).

In the analysed episode, the overlap of activities is seen, for example, in the slowness of the mother's turn-taking. As stated earlier, while we learn the order of interaction, we also become aware of the moral aspect connected to that order. If our counterpart in an interaction does not join us in the same participation framework, in spite of our invitation, it is considered to be a breach of the shared rules of social conduct, and the counterpart is seen as morally accountable and usually causing some irritation. It is nevertheless worth noticing that Anu does not in any direct way appear to lose her temper with her mother and, for example, walk away from the situation. Anu seems to attribute the troubles in the interaction to her mother's simultaneous use of the smartphone, just as we do. As researchers, we do not know what Anu's mother is doing with her smartphone, but the situation is the same for Anu: the details of the interaction between her mother and the smartphone are no more readily available to her than to the researchers watching the video recordings (see Chapter 11 for more discussion on the bystander's position).

Still, Anu can clearly see that her mother is focused on the smartphone and even though she does not get a reply from her mother before summoning her (Extract 1, line 3) – and regardless of her mother's gaze returning to the screen even before delivering an answer (Extract 2, line 10) – Anu acquiesces in the situation. Anu does not in any recognisable way treat her mother's first reply as a dispreferred action, but it is interesting to note that nor does she treat it as a clearly preferred one (cf. Schegloff, 1992). Anu seems to be capable of understanding that her mother's fumbled conversational turns relate to the presence of the smartphone: the problems in preference organisation of talk-in-interaction originate in the mother's difficulty in changing the object of her orientation, and are not really connected to the contents of the requests that Anu is making. This vagueness would not be present if the mother was not in the midst of using a smartphone.

Then again, the way Anu nudges her mother while snapping at her ('mother?' on line 20) actually shows some moral indignation: it is the duty of her mother at this point to give at least some kind of a reply. Anu's turn is reminiscent of the behaviour of some children in an experiment performed by Michael Tomasello's research team (Tomasello, 2014). They found that if a prize was gained through collaboration and one of the

children took more than their fair share of the bounty, the other child would execute a very simple protest, consisting of a short verbal outcry or just a mere motion of a hand. There was no need to elaborate on the nature of the perceived moral transgression; it was immediately understood what kind of behaviour was expected by the one who had taken more than they were supposed to (Warneken et al., 2011). In our present example, the divergence from the norm – not paying attention to Anu and not giving a reason why – comes to be treated as if it would be obvious to both Anu and her mother what should be done. In the aforementioned experiment, the addressed child did not protest but gave up the extra candy without argument (ibid.). Similarly, Anu's mother did not protest the nudge. Even though it is clear that we cannot see inside her head and claim to know why she acted the way she did, the comparison here is tempting. We know that adults are aware of the shared social norms of their societies and Anu's mother's rapid agreement to comply after receiving the nudge can therefore reasonably be proposed to be connected to her knowing very well what she should do. In fact, she starts to put her smartphone away less than 0.1 seconds following Anu's nudge, thus making it inconceivable that she would at this point be unclear about the proper cause of action.

The central function of social norms is to aid in interpreting the behaviour of others. Shared norms help us to see the social world, not as utter chaos, but as something that can be understood and influenced in predictable ways. This order is threatened if others do not play by the common rules (Heritage, 1984, pp. 95–101). Therefore, every instance of interaction also contains a moral stance – and with it an affective stance – towards the activity (Goodwin, 2007, pp. 65–9). The person invited into interaction has to either take part in it or offer some sort of explanation for their default. While Anu's mother is interacting with her smartphone, she repeatedly fails to fulfill the fundamental requirements of human interaction and delays responding to Anu's requests. This 'failing' is understood co-constructively, and hence Anu's demand for a reply and the nudge embodying it are justified by the jointly comprehended moral and affective stances.

Each time a turn produced by a user of a smartphone is delayed, contains pauses or inconsistencies, is manifold in its meaning, or is left unfinished or started again, it makes the interpretative task of the receiver of the turn more challenging. Do these aspects relate to the shared social activity of the participants of the interaction, or do they exist solely due to one of the participants having their orientation directed towards their smartphone? We claim that when one of the participants in conversation simultaneously uses a smartphone, from the perspective

of the ongoing talk-in-interaction, it is harder to identify whether their turns are preferred or dispreferred. If sticky media devices make the deciphering of joint activity in families more difficult, it means that their constant presence can cause difficulty, awkwardness, annoyance, arduousness and discomfort in family interaction. In one family of our personal acquaintances, the father has an inventive method for acquiring the attention of his children when – even though they are sharing the same physical space with him – they are very much absorbed in the games they are playing on their smartphones: he calls them with his own phone and produces his social act as part of the contextual configuration that the children are already orienting to. Would Anu also have gained the attention of her mother more rapidly if she had called her mother across the kitchen table?

DISCUSSION

Many of the elements of the conversation we have presented here are recognisable to most people in today's developed world. Mobile phones, and especially smartphones, have become an integral part of people's day-to-day lives. They have radically changed the conventions and temporal structures of our everyday activities: things are negotiated and rapidly agreed upon through mobile connections, and it is generally expected that others are available for this ongoing planning and restructuring of daily coordination (Ling, 2004). People become easily disgruntled when they are unable to reach someone through a mobile connection.

On top of phone calls, today's smartphones provide a variety of interactive social media and other applications for their users. The devices act as hubs for a plethora of applications and connections to distant others. At the same time, some new norms have developed about how the members of a society are expected to respond to these multiple ways of being contacted. Between friends, it can already begin to be a cause of concern if a message is not answered within a minute. In families, arguments can arise if one of the parents cannot be reached when there is a need to reorganise the immediate plans of the household. In the crossroads of such socially normative expectations, individuals find themselves having to decide, over and over again, how to conduct their lives with the media devices that accompany them (cf. Raudaskoski, 2009, pp. 76–9). Are they going to be available all the time? Do they immediately need to know what their friends have published on some social media site?

In our data example, Anu's mother eventually stretched out to place the smartphone as far away from herself as she could – on the very edge of

the table, away from her space of action. This gesture in a way brings to mind the classical Stanford marshmallow experiment, where some children used the same tactics as a means of self-control: putting the marshmallow physically further away makes it is easier to resist the temptation to eat it (Mischel and Ebbesen, 1970). As mentioned earlier, portable media devices are socially normative and are expected to be 'always on' (Turkle, 2008) in order for everyone to be continuously reachable. In addition, they also contain countless media and entertainment possibilities that can easily be tempting, or even addictive, to people of any age (Cheever et al., 2014). Reviewing the dataset (see Appendix 1) as a whole revealed that some kind of presence of media devices is commonplace during the daily face-to-face interactive situations within families. Nevertheless, as our example shows, the role of media devices in interaction might not be unproblematic. Every media device can bring a parallel and rival contextual framework for ongoing activities. They also create the presence of at least two concurrent but divergent normative worlds. One is the world of norms connected to the interactive processes with the device and the other is the normative world of face-to-face social interaction.

Considering the norms of face-to-face interaction, in the case examined, Anu was relatively patient with her mother's difficulty in transiting into the shared activity, even though she had to do a lot of interactional work to disengage her mother from the 'sticky' smartphone. Through the examined case and other similar occurrences present in the data, we can conclude that media devices break the traditional social norms of interaction and introduce interpretive complexity into face-to-face interaction.

Over the last two decades, portable screen media devices have radically changed various social and societal practices. We who have lived in the era before mobile phones can in some sense compare the current situation to what came before. Those who are born today, who grow up surrounded by different media devices, actually learn what social skills mean in this very environment. Parent–child interaction is crucial for the development of children, and therefore the challenges that media devices pose to this interaction is a question of the utmost importance.

Earlier, we discussed how the knowledge of what is socially appropriate is learned simultaneously with the skills of interaction. The question here is one of intersubjectivity, not merely as a skill of the individual, but something that is built turn by turn through a contextual configuration, always in a certain time and in a certain place in joint activity with others (Pontecorvo et al., 2001, p. 346). As previously mentioned, social norms are first and foremost learned in order to understand and function in a social world. It is disturbing and even threatening when other people do not act according to common rules, and therefore the situated activities always

also have moral and affective aspects (Goodwin, 2007, p. 71). But if the ubiquitous presence of screen media devices can break these traditional normative rules, and thus produce ambiguity and interpretative variance, it may have an effect on the development of children's social and emotional skills. Today's children encounter conflicting norms in their daily lives: for example, they might first learn the practices of requesting and answering a request, but then notice that these practices might not be applicable after all, at least when a smartphone is present in the interaction.

Reviewing the data, some grand questions come to mind. Older children can already interpret interaction to a large extent, but what about when a crying baby is waiting to receive attention from a parent who is interacting with a sticky media device? Attachment theory suggests that it is in interaction with the caregiver that children form their understanding of being worthy of receiving help and care, and whether other people can be expected to offer aid or not (Bowlby, 1969, 1973, 1980 [1982]). If a child must compete for parental attention with media devices from infancy, can this endanger the formation of secure attachment? Could sticky media devices turn out to be developmental risk factors?

NOTES

*   This chapter is based on Mantere, E. and S. Raudaskoski (2015), 'Kun matkapuhelin vie vanhemman huomion', in A.R. Lahikainen, T. Mälkiä and K. Repo (eds), *Media lapsiperheessä*, Tampere: Vastapaino, pp. 205–26.
1.   We might, for example, invite our boss to a party purely out of courtesy, even though we might not really consider them a friend or actually want them to attend. The boss might decline the invitation pleading work overload instead of saying that they are really not interested in the party at all.
2.   Transition relevant place (TRP) is a name given to such a moment in interaction where the speaker can change without it being perceived as an interruption. It is usually marked by a pause after the latest utterance. In these moments, it is common to non-verbally and rapidly 'negotiate' who will be the next speaker, but if the next speaker has already been addressed, it is expected that they will take the next turn. If they do not do this quickly, it is commonly interpreted to mean that a dispreferred second-pair part – for example, declining an invitation – is to follow (Clayman, 2012).

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PUBLICATION
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Phubbing and Social Intelligence: Role-Playing Experiment on Bystander Inaccessibility

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Phubbing and Social Intelligence: Role-Playing Experiment on Bystander Inaccessibility

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Abstract: Smartphone use has changed patterns of online and offline interaction. Phubbing (i.e., looking at one's phone instead of paying attention to others) is an increasingly recognized phenomenon in offline interaction. We examined whether people who phub are more likely to have lower social intelligence, whether phubbing is considered more annoying than being ignored due to reading a magazine, and if people describe smartphones and magazines differently as sources of social distraction. We collected two survey samples ($N = 112$, $N = 108$) for a cartoon-based role-playing experiment (the Bystander Inaccessibility Experiment) in which a smartphone user and a person reading a magazine ignored the respondents' conversational initiatives. Annoyance in each scenario was measured, and written accounts were collected on why the respondents rated the scenarios the way they did. Other measures used included the Generic Scale of Phubbing, Generic Scale of Being Phubbed, and Tromsø Social Intelligence Scale. The results showed that participants in both samples were more annoyed by phubbing than by being ignored due to reading a magazine. Linear regression analyses showed that phubbing was associated with lower social intelligence, even after adjusting for confounding factors. The annoyingness of phubbing was explained with negative attitudes toward smartphones, which were assumed to be used for useless endeavors, while magazines were more appreciated and seen as more cultivating. The role of bystanders' epistemic access to the smartphone user's activities is discussed.

Keywords: smartphones; phubbing; social intelligence; bystander inaccessibility

1. Introduction

Smartphone use is booming. In the United States, 96% of people between the ages of 18 and 29 own a smartphone [1]. Smartphones are used regularly during moments together with friends and family. This has caused much debate on smartphone absorption and politeness [2,3]. This article investigates annoyance caused by smartphone use and inattentiveness in social situations; we focused on how and why people find these situations annoying and whether lower social intelligence is associated with ignoring others by smartphone use.

Smartphones have an important quality that sets them apart from other everyday objects: they are used routinely for multiple purposes but give few cues to bystanders about what they are actually being used for. This bystander inaccessibility (BI) makes smartphones uniquely apt in creating socio-cognitive ambiguity on an encounter's social frame [4]. According to Goffman, frames are fundamental for intersubjectivity and successful interaction in any social situation [5]. People in social situations figuratively ask themselves, "What is it that is going on here?" ([5] p. 7) and use collective understanding of typical types of situations and the types of activities taking place in that particular encounter to find the answer. Interaction derives its meaning from this answer—the local context of interaction, which is renewed continuously through participants' activities in it. Shared understanding of the social context, including the activities undertaken within

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it, is necessary for interaction to be intelligible. In classical breaching experiments [6], people reacted with annoyance and anger to the shared understanding being breached without explanation. All major micro-sociological traditions recognize the necessity of shared contextual understanding for interaction [7]. Due to BI, smartphones are likely to create ambiguity over contextually shared understanding. This could be an issue especially for those oriented toward succeeding in social situations, i.e., the "socially intelligent."

The term "phubbing" was created by a marketing agency for increasing their client's dictionary sales. It was defined as "*snubbing someone in a social setting by looking at your phone instead of paying attention*". The campaign imitated organic social media and featured at a "Hall of Shame" on its site, which encouraged site visitors to "*be brutal*" and post photos of their loved ones guilty of phubbing [8]. Snubbing is defined as "*to check, reprove, or rebuke in a sharp or cutting manner; in later use, to treat or receive (a person, suggestion, etc.) in a way calculated to repress or mortify*" [9]. Phubbing has thereafter reached a less drastic meaning, in both common use and modern dictionaries: "*the practice of ignoring one's companion or companions in order to pay attention to one's phone or other mobile device*" [10]. Regardless of the term's origins, researchers have widely adopted phubbing as a term. Though it presumes intent, it is also used in studies in which the phubber's intent cannot be assumed. This study adopts this now commonplace usage of the term.

Phubbing may be felt as distracting and undermining the benefits of social interactions [11]. It may decrease the quality of communication and relationship satisfaction by lessening the feeling of being together [12], may be negatively perceived by its "victims" as well as those who do it themselves [13], and is starting to be viewed as inevitable in today's societies [14]. Phubbing one's romantic partner has been found to lower relationship satisfaction and increase conflicts [15], and it can cause depression in long-term marriages [16]. A validated scale for measuring phubbing has been developed [17]. Phubbing risk has been also analyzed with a conceptual model of communication disturbances and phone obsession [18].

Conceptually, phubbing is close to technoference, defined by McDaniel and Coyne as the "*everyday intrusions or interruptions in couple interactions or time spent together that occur due to technology.*" [19] Technoference has been studied in parent–adolescent relationships [20] and was connected to lower life satisfaction and depression as well as lowered relationship quality between parents and their teenage children, due to conflicts over technology use. Technoference in parent–child interactions was connected to behavior problems among children [21,22] and negative outcomes among adolescents [20].

Interactive research on phubbing is scarce [23]. Licoppe and Figeac studied how smartphone use while driving interacted with traffic light stops. Users timed disengagement from smartphone use to the smartphone interface's affordances of transition-relevant places, where shifts in orientation between the smartphone and environment were sequentially proffered. The results showed that not all moments of smartphone usage were equally apt for disengaging from its use [24]. Figeac and Chaulet studied smartphone use in public transport and found that gaze shifts away from the phone were organized in relation to the sequential progression of the smartphone activity. They suggested that the beginning stages of smartphone use were especially sequentially engaging [25].

This article answers a frequent call for research on contextual specificities of collocated interaction and mobile digital media use [26]. Furthermore, we aim to understand phubbing in the context of social intelligence. Social intelligence is used to refer to individual differences in understanding others and succeeding in social situations [27]. It has been studied in the contexts of human cognition development within societies [28,29], leadership [30], and reading of nonverbal cues [31]. Academically, the concept has recently overlapped with emotional intelligence, which is sometimes used as a synonym for social intelligence [32]. However, these concepts should be kept separate as emotional intelligence often is used to depict strictly intrapersonal capacities. Although previous research has examined problematic phone use in relation to introspective emotional intelligence [33],

social intelligence and phubbing have not yet been studied. Our research questions are as follows:

RQ1. Are people who phub more likely to have lower social intelligence?
RQ2. Is phubbing considered more annoying than ignoring others due to reading a magazine?
RQ3. How do people explain their annoyance with phubbing in relation to being ignored due to reading a magazine?

2. Materials and Methods

2.1. Participants

The data were obtained from two convenience samples. Data were collected from sample 1 in 2016 (*N* = 112) and from sample 2 in 2018 (*N* = 109) from Finnish university students. The 2016 sample data were collected as a pilot study and exploration of the phenomenon. This sample include Bystander Inaccessibility Experiment only. Sociodemographic information was not collected, but the sample involved university students, the majority of which were women. The 2018 sample participants were predominantly young (M_{age} = 26.83, SD_{age} = 7.79; Mdn_{age} = 23.00) women (86%). A combined dataset was used for the qualitative analyses (*N* = 221). The participants for both studies were recruited from the same first-year social sciences course at a Finnish university. The data collection procedure was the same, and participation was part of completing the course. The survey was conducted in Finnish.

2.2. Measures

Quantitative and qualitative data were analyzed in dialog with each other. Quantitative analyses of sample 1 informed its preliminary qualitative analysis, which again informed the measures and analyses of sample 2.

2.2.1. Bystander Inaccessibility Experiment, First Version (BIE-1)

The first version of the Bystander Inaccessibility Experiment was developed to test whether being ignored due to the use of a media artifact instigating less BI sparks less annoyance. Representative episodes of phubbing and being ignored due to another type of activity were developed based on studies using naturalistic data [23]. An anonymized cartoon-based representation was constructed of situations of being ignored due to smartphone use vs. due to reading a magazine (see Figures 1 and 2). The respondents were given the following instructions: *"Put yourself in the POSITION OF THE PERSON SPEAKING and evaluate how annoying the situation would be for you".* The respondents then rated the situations on a scale from 1 to 7 (1 = not at all annoying, 2 = not very annoying, 3 = a little annoying, 4 = somewhat annoying, 5 = quite annoying, 6 = very much annoying, and 7 = extremely annoying). In the 2016 version, the scale was from 1 to 5 (1 = not at all annoying, 2 = not very annoying, 3 = somewhat annoying, 4 = quite annoying, 5 = very annoying). In both versions, the order of the cartoons was randomized. Two BIE-1 variables were used in the quantitative analyses, hereafter referred to as "Magazine" and "Smartphone." After evaluating both situations, the respondents were asked, *"Why did you evaluate the first and the second situation as you did?"*

Figure 1. Magazine situation.

Figure 2. Smartphone situation.

2.2.2. Generic Scale of Phubbing, Finnish Version (GSP-FV)

The Generic Scale of Phubbing is a 15-item questionnaire measuring phubbing behavior [17]. At the start of the questionnaire, respondents are given the following instructions: "*We would like you to think about your mobile phone use during your face-to-face social interactions with others*". This is then followed by further guidance: "*Think about your social interactions on the whole (e.g., with friends, acquaintances, family, and your partner) and the extent to which the following statements apply to you. In my face-to-face social interactions with others . . . *" Respondents then rate statements related to their phubbing behavior on a scale from 1 to 7, with labels attached to each number (1 = never, 2 = rarely, 3 = occasionally, 4 = sometimes, 5 = frequently, 6 = usually, and 7 = always). This study is the first to use a Finnish version of the GSP. The measure had good internal consistency, based on McDonald's omega (ω = 0.88).

2.2.3. Generic Scale of Being Phubbed, Finnish Version (GSBP-FV)

The Generic Scale of Being Phubbed is a 22-item questionnaire measuring the prevalence of being phubbed by one's social contacts [17]. The scale and the second instruction are identical to those of the GSP, but instead of instructing the respondent to focus on their own mobile phone use, the first instruction is as follows: "*We would like you to think about others' mobile phone use during your face-to-face social interactions with others*". This study is the

first to use a Finnish version of the GSBP. The measure had an excellent internal consistency (ω = 0.94).

2.2.4. Tromsø Scale of Social Intelligence, Finnish Version (TSIS-FV)

The Tromsø Scale of Social Intelligence is a 21-item questionnaire measuring social intelligence [27]. It has subscales for social information processing, social skills, and social awareness [27]. It was developed for a Norwegian-speaking sample but has been validated and used in English [34], Italian [35], and Korean [36], among other languages. Respondents are provided the following instructions: *"For each item, indicate how well it describes you on a scale from 1 (describes me extremely poorly) to 7 (describes me extremely well)"*. Labels were not provided for values from 2 to 6. This study is the first to use a Finnish version of the TSIS. The measure had excellent internal consistency (ω = 0.90).

2.2.5. Background Variables

Other variables included age, gender, income, and whether the participants had children. These were treated as control variables and used as dummy variables. The age variable indicated if the participant was 23 years old or older, the gender variable indicated female gender, and the income variable indicated a relatively high monthly income for a student (EUR 1200 or over).

2.3. Analysis Techniques

The data from samples 1 and 2 were pooled together for qualitative analysis. The datasets underwent quantitative analysis separately.

2.3.1. Quantitative Analysis Methods

We used *t*-tests to analyze sample 1 and report the t-statistics, means (*M*), standard errors (*SE*), standard deviations (*SD*), and confident intervals (*CI*). For the 2018 sample, in addition to the descriptive statistics of our study variables, we report Pearson correlation coefficients and *p*-values from the descriptive analysis and unstandardized (*B*) and standardized (β) regression coefficients, standard errors (SE (B)), and *p*-values for the ordinary least squares (OLS) regression models. Based on qualitative assessment, some 2018 sample participants (n = 8) might not have understood the experiment conditions correctly. However, as the results did not change when excluding these participants, our analyses included the entire 2018 sample (N = 108).

2.3.2. Qualitative Analysis Methods

Thematization and qualitative content analysis were utilized to categorize the themes among the written responses to the BIE-1 (N = 221). The Key Word in Context routine, thesauruses, and NVivo 12 were used. The respondents often referred to several topics, making the number of codes larger than that of total respondents. The themes were defined as reasons for evaluating the smartphone and magazine situations equally (non-differentiators, ND: 355 codes and themes) or differently (differentiators, D: 676 codes and themes) as causes of annoyance. All D codes, except from participants who seemed to have misunderstood the assignment (n = 12; e.g., identified with the wrong person), had evaluated the smartphone situation as more annoying. Uninformative verbal repetitions of the numeric evaluation (e.g., *"Both situations, in my mind, were equally annoying"*) were not coded. Elaborations on the annoyance (e.g., "*It is insulting to not answer*") were coded, even if they did not explicitly mention smartphones and/or magazines.

The aim of the coding was minimal loss of content due to abstraction. Parallel codes were merged, leaving 639 codes. Similar codes were grouped into themes and subthemes. The themes were abstracted into main themes by re-examining and comparing themes, subthemes, codes, and the original written accounts. Several cases clearly referring to a misunderstanding of the experiment (n = 12) were grouped together and set aside.

3. Results

3.1. Quantitative Results

The results of sample 1 from 2016 are shown in Table 1. Based on our results, being phubbed is more annoying than being ignored due to reading a magazine (t [106] = −9.10, $p < 0.001$). None of the respondents ranked the magazine condition as more annoying than the smartphone condition.

Table 1. Paired sample *t*-test in sample 1.

Variable	n	Range	M	SD	(95% CI)	
Annoyance: Magazine	107	1–5	3.13	0.93	2.95	3.31
Annoyance: Smartphone	107	1–5	3.87	0.87	3.70	4.04
Difference	107		−0.74	0.84	−0.90	−0.58

The results of sample 2 replicated these findings: again, being phubbed was seen as more annoying than being ignored due to reading a magazine (t [107] = −5.15, $p < 0.001$). Of the respondents, only 11% (13/108) considered the magazine condition more annoying than the smartphone condition.

Table 2 shows the correlation analysis results for sample 2. We found that social intelligence was correlated negatively with phubbing ($r = −0.32$, $p < 0.001$) and being phubbed ($r = −0.21$, $p = 0.033$) but not with the other study variables. Phubbing was connected positively to being phubbed ($r = 0.21$, $p = 0.026$) and annoyance in the magazine condition ($r = 0.29$, $p = 0.003$), and negatively to age ($r = −0.27$, $p = 0.005$) and income ($r = −0.20$, $p = 0.040$). In addition, being phubbed was linked positively to annoyance in the magazine ($r = 0.34$, $p < 0.001$) and smartphone ($r = 0.34$, $p < 0.001$) conditions, and annoyance in both conditions was correlated with each other ($r = 0.34$, $p < 0.001$). No statistically significant correlations were found between the other variables.

Table 2. Correlations and descriptive statistics for the main variables in sample 2.

Continuous variables	Range	M (SD)	1	2	3	4	5	6	7	8
1. Social intelligence	1–7	5.13 (0.86)								
2. Phubbing	1–7	2.49 (0.73)	−0.32 ***							
3. Being phubbed	1–7	3.42 (0.87)	−0.21 *	0.21 *						
4. Annoyance: Magazine	1–7	4.45 (1.35)	−0.02	0.29 **	0.34 ***					
5. Annoyance: Smartphone	1–7	5.12 (1.44)	−0.01	0.19	0.34 ***	0.54 ***				
Categorical variables	**Range**	**%**								
6. Age > 23 y.o.	0/1	46.79	−0.04	−0.27 **	−0.09	−0.05	−0.09			
7. Female gender	0/1	86.24	0.13	0.10	−0.03	0.03	−0.01	0.03		
8. Has children	0/1	22.94	−0.01	−0.13	0.09	0.04	0.05	0.55 ***	0.08	
9. Income ≥ EUR 1200	0/1	27.52	0.19	−0.20 *	−0.07	−0.06	−0.02	0.36 ***	0.05	0.31 **

Note. * $p < 0.05$; ** $p < 0.01$; and *** $p < 0.001$.

The regression analysis results are shown in Table 3. Based on our analysis, phubbing was a strong negative predictor of social intelligence ($\beta = −0.36$, $p < 0.001$). The association between being phubbed and social intelligence was not statistically significant ($\beta = −0.19$, $p = 0.061$). Other factors of annoyance in the magazine ($\beta = 0.11$, $p = 0.303$) and smartphone ($\beta = 0.05$, $p = 0.650$) conditions, i.e., age ($\beta = −0.21$, $p = 0.063$), female gender ($\beta = 0.15$, $p = 0.091$), whether the participant had children ($\beta = 0.01$, $p = 0.946$), and income ($\beta = 0.18$, $p = 0.075$) were also not connected to social intelligence.

Table 3. Factors predicting social intelligence.

TSIS	B	SE (B)	p	β
Phubbing	−0.42	0.12	0.000	−0.36
Being phubbed	−0.19	0.10	0.061	−0.19
Annoyance: Magazine	0.07	0.07	0.303	0.11
Annoyance: Smartphone	0.03	0.06	0.650	0.05
Age > 23 y.o.	−0.36	0.19	0.063	−0.21
Female gender	0.39	0.23	0.091	0.15
Has children	0.02	0.22	0.946	0.01
Income ≥ EUR 1200	0.34	0.19	0.075	0.18

3.2. Qualitative Results

The qualitative analysis resulted in 8 main themes, 47 themes, 35 subthemes, and 639 codes. The accounts of D (676 codes and themes) were more prolific and reflective than those of ND (355 codes and themes). D and ND also differed in the themes to which they referred to (see Table 4).

Object usage groups together moral and functional qualities attached to smartphones and magazines. A magazine was considered a better reason for ignoring someone ($n = 64$), by virtue of being more important ($n = 20$), affording self-development ($n = 5$), and being, for instance, civilizing ($n = 2$). A smartphone was deemed a bad reason for ignoring someone ($n = 79$) due to being unimportant ($n = 58$) or useless ($n = 41$) or probably just being used for entertainment and social media ($n = 10$). Only two respondents explicitly addressed the possibility of smartphones being used for something worthwhile. Many struggled to understand why phubbing felt so much worse than being ignored due to reading a magazine ($n = 63$). Some participants ($n = 2$) attributed this to the category and goal of the smartphone user's actions being inaccessible to the bystander: *"The first situation [smartphone] was really annoying because I didn't know what was so much more important than what I wanted to say"* (r25_2016). Positive aspects of reading and negative aspects of smartphone use were the most common references in D ($n = 195$). Reflections related to bystander inaccessibility were common in D ($n = 52$) but also appeared in ND ($n = 11$). Some saw relevance in smartphone use being physically more active than reading a magazine ($n_D = 8$, $n_{ND} = 2$).

The **intentionality** of ignoring another was a common theme in both D ($n = 69$) and ND ($n = 44$). However, magazine absorption ($n = 36$) and concentrating on reading a magazine ($n = 24$) were always described positively (e.g., *"Smartphone use is a more annoying reason to ignore someone than reading a magazine. The latter is actually more amusing because it's admirable if someone can focus on reading that much. On the other hand, scanning your phone seems like some technical apparatus is more important than I am"* (r19_2018). Absorption and concentration were never mentioned positively in relation to smartphones. Hearing the questions but choosing to ignore them was used to explain annoyance in 18 cases. Assumed inability to hear was seen as decreasing annoyance ($n = 4$), except in one case, in which not hearing due to smartphone use actually increased the participant's annoyance: *"I think in the first [smartphone] situation, the person doesn't actually even hear me. My assumption is based on previous experience, which numbers in the hundreds. It's like talking to a tree when someone's on their phone. I think he's more out of reach when he's on his phone than when he's with a magazine"* (r20_2018). Smartphones were said to not actually demand attention as reading a magazine does. Smartphones were also associated with addiction, said to destroy one's ability to focus, used for escaping negative emotions, and be destructive to brains. Absorption in reading a magazine was described positively, even as *"endearing"* or manifesting a *"joy of living."* Smartphone absorption was never described positively.

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Table 4. Main themes, themes, and data extracts.

Object Usage (195/30)	Intentionality (69/44)	Societal Factors (51/27)	Interpersonal Relations (44/20)	Non-Responsiveness (16/20)	Presence (12/9)	Incited Emotions (12/8)
Goodness of replacement activity (133/15), bystander inaccessibility (52/11), corporal behavior (8/2), objects hindering interaction (1/2), magazine not as significant a competitor in getting attention (1/-)	Concentration (17/19), absorption (31/4), hearing or not hearing (5/14), ease of suspending the activity (10/4)	Prevalence in society (36/4), everyday life (31/4), these days (9/3), basic manners and morality (-/6), technology (3/-)	Respondents' self-reflection (20/14), phubber may be engaged with others (19/2), form of and participants in the social situation (2/4), reader not engaged with someone else (3/-)	Repeating yourself (8/7), lack of reaction is displeasing (4/10), non-response from reader less bad (4/-), perhaps just didn't hear yet (-/1), waiting is OK because probably reading from a magazine or phone (-/1)	Phones make people absent (11/1), absence is annoying in general (-/4), I require attention when I want it (-/2), being together means paying attention (-/1), inability to create contact (-/1), phubber ignoring me even though I am actually present (1/-)	Phubbing is insulting (4/-), feeling unvalued (2/2), indifference is annoying (1/3), phubbing is frustrating (2/-), phubber makes me feel unimportant (1/1), phubbing is enraging (1/-), not being listened to is frustrating (-/1), both are awkward (-/1), smartphones simply are just annoying (1/-)
"In the first [smartphone] situation, one doesn't think that the person is doing anything important. They're probably just bored, and that's why they're staring at their phone" (r23_2018).	*"A magazine or book is not as annoying because, when reading, people clearly need to concentrate, unlike, for instance, when checking their social media accounts"* (r36_2016).	*"I felt the smartphone was more annoying because people always seem to be on their phones and forget to communicate with the people around them"* (r21_2016).	*"Maybe it is because the person on their phone might be chatting with someone else, and when they do not respond, it feels like the other person is more important than I am"* (r15_2016).	*"The most annoying thing is if you ask if they heard you, and they still don't answer or start to listen"* (r55_2016).	*"When absorbed in a smartphone, the person almost seems to be in another world, even though I am sharing the same physical space with them"* (r32_2016).	*"I think it is very impolite and insulting not to answer a question because it gives the impression that the other person is not worth your attention or is insignificant"* (r11_2016).

Note. The number of references is given in brackets, for differentiators on the left side of the slash and for non-differentiators on the right side (D/ND). Typical data extracts are presented from each main theme.

Societal factors ($n = 78$) were used to explain annoyance in D through the overly high prevalence of smartphone use ($n_D = 36$, $n_{ND} = 4$). Phubbing was seen to take place too often ($n = 30$), creating a contrast between the world today and the world before, when people still paid more attention to one another ($n = 19$). Five respondents talked about the prevalence of smartphone addiction in society. Smartphone use was described as having gone too far and taking too big a portion of peoples' lives. Exceptions to this included the accounts in which both situations were framed as normal everyday life ($n_{ND} = 3$) as well as comments on the lack of basic manners and morality causing equal annoyance in both situations ($n_{ND} = 6$). Although smartphone use was often described in many negative moralistic terms, those judgmental accounts never referred similarly to potential social norms.

Interpersonal relations groups together references to being less than an imagined other, references to the social situation's constitution, and reflections on oneself as an interlocutor. Other potential people on the receiving end of the smartphone usage were seen as competitors for the bystander's attention, who were perceived as being more important than the bystander and made the bystander feel as though they were a *"third wheel"* in the situation ($n_D = 19$, $n_{ND} = 2$). Yet, the presence of the smartphone-mediated others was considered somehow inconcrete and as a less urgent and less valuable form of social interaction when given the option for offline interaction: *"Perhaps it also makes you feel a bit like the contents of the phone and the other people there are more interesting than concrete human company"* (r43_2016).

Non-responsiveness was described as being insulting in general ($n = 28$). The category had overlap with the theme of intentionality. When non-responsiveness was described in relation to smartphones, the respondents often assumed intention. This was contradictory as the data also included rich accounts of the ease of losing awareness of one's surroundings due to smartphone use. Smartphone users' non-responsiveness often was assumed to take place after hearing the other person but choosing to ignore them. Culpability sometimes was attributed to the phubber even when the phubber was thought to not hear the question. The rationale was that, in choosing to engage with their phone to the degree that they lose awareness of their surroundings, the phubber has already decided intentionally to neglect others' possible conversational initiatives. Some accounts and references to the general annoyingness of having to repeat oneself ($n = 15$) or waiting for a reply ($n = 15$) formed the largest themes explaining annoyance among ND.

Presence was considered lacking due to smartphone use ($n_D = 11$, $n_{ND} = 1$): "When someone's absorbed in their smartphone, it feels as though they're in 'another world' even if they're in the same physical space" (P16_32), although some instances of ND referred to absence in general as annoying ($n_{ND} = 4$): "That also adds to the annoyance—that John is not present with me in the same physical situation but his attention is elsewhere" (r47_2018). References to presence overlapped with imagining the phubber being engaged with others: "In the first [smartphone] situation, the person was possibly interacting with some other person via the phone and wasn't present in the situation." (r4_2018).

Incited emotions included elaborations on the emerging emotions attributed to the situations. Both the D ($n = 12$) and ND ($n = 8$) responses made references in this category. For D, the most common emotional theme was the insulting nature of phubbing ($n_D = 5$, $n_{ND} = 1$); for ND, it was the annoyance over the listener's perceived indifference ($n_D = 1$, $n_{ND} = 3$). The respondents felt unimportant in general, and some felt even more unimportant specifically in the smartphone situation. Phubbing was called *"enraging"* and *"simply annoying"*. Similarly drastic and laconic descriptions were not given for being ignored by another due to magazines.

4. Discussion

We investigated annoyance caused by smartphone use and inattentiveness in social situations, specifically phubbing. The study hypotheses were based on the ethnomethodological theory of social action, which posits that the context of social behavior indexically

defines its meaning, and the behavior in the context reflexively defines the context [6]. Therefore, smartphones—which may be used for more varied purposes than printed media such as magazines can, and typically keep this purpose inaccessible to bystanders [4]— would stand out as a special source of distraction in social settings. We found phubbing to be connected to lower social intelligence. Our two samples also showed that being phubbed was considered more annoying than being ignored due to reading a magazine, and that this was typically caused by people's perception of smartphones as being a worse reason for ignoring others than reading a magazine was.

Reading a magazine was seen positively, while smartphone use was seen negatively. Magazines were described as educational, civilizing, and good for developing one's concentration. Smartphones were thought to destroy one's ability to concentrate. Being absorbed in reading a magazine was considered more understandable and even was described as admirable, sometimes even if it led to being ignored by the absorbed reader. Absorption in one's smartphone was never depicted positively and was even described as "enraging." One respondent would have been more annoyed with the phubber, even if she knew he was reading the same exact thing on his smartphone, than with the reader in the magazine condition. This reflects the findings of previous studies showing negative bystander reactions to smartphone absorption already in childhood [37].

The assumed negative impact of smartphone use on character development, and the positive impact of reading a magazine, directly influenced respondents' perceived annoyance. High relevance of the activity attributed as the cause of being ignored makes sense, from an ethnomethodological point of view. The meaning of smartphone use or magazine reading indexically gives meaning to being ignored in the situation. Due to BI, being ignored in the smartphone situation had more ambiguous meaning and significance. This may partly explain why accounts of annoyance over phubbing were so much more extensive, diverse, and explorative than those relating to magazine reading. Without understanding the nature and goal of the activity causing one to be ignored, the sense of being ignored remains undefined. In their written accounts, respondents therefore made great efforts in searching for ways to define that nature and goal.

Some respondents addressed the ambiguity of phubbing directly. They remarked that unlike in the magazine condition, where they knew the person was reading, in the smartphone condition, they had no idea what the other person was doing specifically, but few of the accounts addressed this lack of epistemic access into smartphone activities. However, interaction generally is organized through routinized moral orientations toward shared norms of social cooperation [6]. People treat themselves and each other as accountable for comporting themselves in such a manner that the sense of their actions in a social situation is readily deductible from their observable conduct and the setting's attributes [6]. This norm of accountability is typically sanctioned rapidly if not met, but due to its routinized nature, its guiding impact on our social lives is rarely addressed or reflected upon explicitly [6]. This raises the possibility that BI, i.e., the lack of bystander epistemic access into a smartphone user's activities, may affect experiences of being phubbed when not explicitly addressed. Many respondents' bewilderment over the difference they felt between the smartphone and magazine conditions supports this line of thinking.

While manners and morality were addressed in a laconic manner in relation to the general norms of ignoring another person, the wrongness of phubbing was addressed together with elaboration and justifications. This would suggest that, although phubbing is a commonly disliked phenomenon, unequivocal social norms have not yet been formed to regulate it. This is understandable as social norms become naturalized through transgenerational transmission [38]. However, it may be impossible to predict whether these norms will form in the future. The relevant technologies develop faster than generations change, thus not allowing the transgenerational transmission of social norms for these technologies. Considering mobile digital media's pivotal role in today's societies, this is an enormous topic, which multidisciplinary scientific communities should study. If the general norms of accountability in social behavior were to change to accommodate phubbing behavior, this

would change what it means to be successful in social situations—that is, what it means to be socially intelligent.

Limitations and Future Directions

The study used Finnish translations of the GSP and GSBP and a translation of an English version of the TSIS. Although all three scales showed good construct validity, this study was limited to Finnish university students. Though gender did not have significant impact on results of statistical models, the study is limited by the qualitative results predominantly reflecting female reactions to phubbing. Future studies should use internationally representative samples and aim to confirm the minor evidence we found on the connections between social intelligence, age, and being phubbed using different study designs and methods. The BIE-1 should be elaborated upon and developed to better extract the role that BI plays in reported feelings of annoyance.

The term "phubbing" is limited by dichotomous views on attention. In social situations with phubbing, the allocation of one's attention to engagement in one's smartphone and co-present others is not either-or; rather, it manifests in degrees through the allocation of interactive resources such as one's words, gaze, and corporal configurations, in relation to the device and collocated others [4]. Instead, phubbing should be recognized as a moralistic term, depicting the attitude of the user of the term on the balance of face-to-face and smartphone engagements embodied by another.

The study supports a direction for human–computer interaction research with its focus on activities. Activities and epistemic access to them by others may be more socially relevant than the platforms and applications used. Non-digital media devices are typically self-defined by the classes of activities they afford. Further explanations of their use would typically be redundant. When a person has a course textbook in their hands, he or she clearly is assumed to be studying and not looking at their favorite influencer's Instagram photos. This epistemic access to user activities typically is lacking for mobile digital multipurpose devices such as smartphones. With a smartphone in hand, one might be studying or looking at Instagram photos.

5. Conclusions

Smartphones are ubiquitous in today's everyday face-to-face interactions. Phubbing is an increasingly recognized phenomenon that is potentially disturbing for social situations. Our study findings underline that phubbing not only was seen as a very annoying and negative phenomenon, but was associated with lower social intelligence. The qualitative results showed that the phubber's smartphone activities were assumed to be unimportant, to absorb the phubber's attention while not actually requiring it as reading a magazine would, and generally to take too much of people's time. The intergenerational transmission of social norms around phubbing might be too slow to keep up with the technological development. This might mean drastic changes for how socially intelligent behavior is defined and how social life is organized in general, if social norms adapt to accompany a generally disliked and socially influential behavior such as phubbing.

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PUBLICATION
3

Smartphone Moves: How Changes in Embodied Configuration with One's Smartphone Adjust Conversational Engagement

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Article

Smartphone Moves: How Changes in Embodied Configuration with One's Smartphone Adjust Conversational Engagement

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Abstract: Smartphones are often spontaneously used for personal purposes and during face-to-face gatherings. New terms like "phubbing" and "technoference" describe negative consequences of this behavior, but analysis of the actual everyday social situations where smartphones feature has largely been neglected. This article shows how simultaneous smartphone and conversational engagements are shaped by participants' embodied conduct. A naturally occurring three-party conversation in a Finnish café is analyzed in detail to show how changes in embodied user–smartphone configuration impact ongoing conversation. User–smartphone configuration consists of the smartphone's location, its physical relation to its user's hands, and its screen direction in relation to the user's head. User–smartphone configuration can manifest a change in an interactive footing in conversation, function as a turn-holding device, and organize a change in the conversational state. New methods and concepts for studying smartphone use in social situations are introduced. "Smartphone positions" refers to the embodied user–smartphone configurations that are oriented as manifestations of degrees of user–device engagement. "Smartphone moves" are the changes in smartphone positions, and they carry sequential relevance. Increased smartphone engagement is seen as decreased conversational engagement and vice versa. Making interactive resources available for one engagement manifests as an accountable event of disengagement from another. Engagement and disengagement are argued to be a continuum rather than a contrast pair.

Keywords: smartphones; social interaction; engagement; multimodality; conversation analysis

1. Introduction

Smartphones are some of the most central objects in people's lives today. They are used to communicate with others, to get where one needs to be, and to shop for other items and services. These, and a plethora of other smartphone activities, are the reason behind over 200 billion application downloads in Google Play and Apple's App Store in a year (Perez 2020). Is it a surprise, then, that the average U.S. adult spends three hours daily on their smartphone, a 47% rise in five years (eMarketer 2019)? Much of this use takes place in the presence of others, and questions about the politeness of smartphone use in social situations have gotten a lot of media attention (Ducharme 2018; Molina 2017). Research and publicity around terms like "phubbing" and "technoference" are examples of academic attention on the topic, but they are limited by presumably unintended negative consequences of smartphone use at the statistical level (Dwyer et al. 2018; e.g., Molina 2017; Roberts and David 2016; Rotondi et al. 2017), therefore neglecting, as Goffman (1964) would have put it, the social situation in which the phenomenon actually resides. Ayaß (2014) adapts Goffman's (1963, pp. 39–40) concept of "involvement shield" in suggesting that mobile phone users may embody cues that convey their unavailability for interaction (cf. also Hampton et al. 2010). The capacity of smartphone use to modulate interactional availability is further supported by Pew Research Center's survey (Pew Research Center 2015), which found that most Americans have used their phones specifically to avoid

face-to-face interaction, and a third have done so during their most recent social gathering. If smartphones are able to serve such purposes, there must be specific embodied user–smartphone configurations affording this. That is to say, some specific ways of engaging with a smartphone must embody stronger engagement with the device than with others (cf. Figure 1).
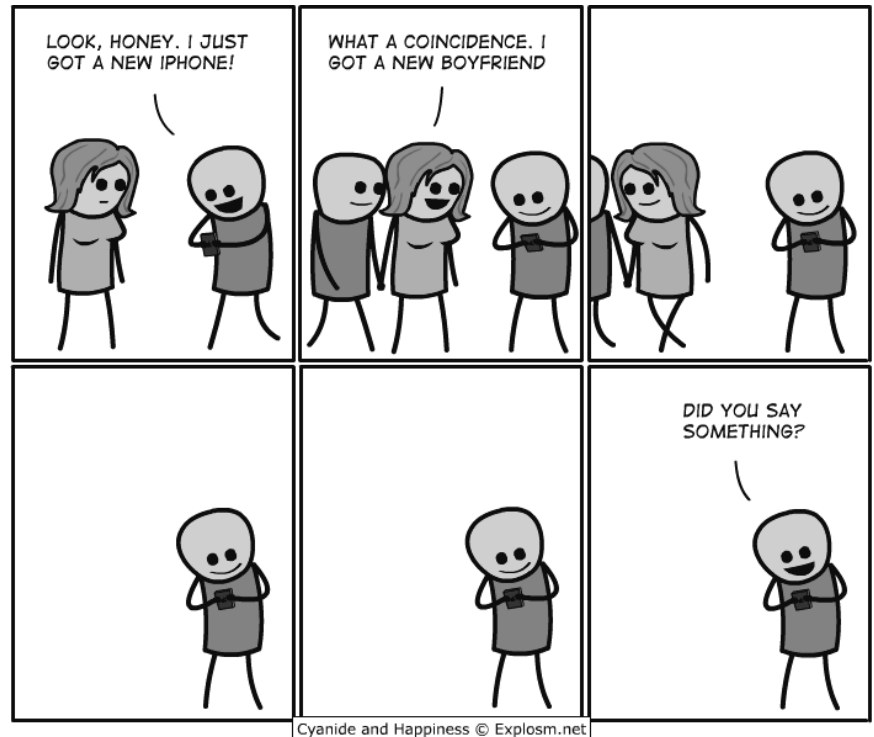
Figure 1. The popular Cyanide and Happiness cartoon (DenBleyker 2010) relies on the reader seeing both hands holding a smartphone as a manifestation of strong smartphone engagement.

1.1. Engaging with a Smartphone vs. a Human Participant

Objects may feature in interaction as a means to personal aims or as semiotic fields in constructing the contextual configuration of that moment (Goodwin 2000). Smartphones, however, are not only objects of individual engagement (Roberts and David 2016) nor semiotic fields (cf. Raclaw et al. 2016), but can form with their users interactive trajectories with specific actions and reactions, becoming relevant at specific moments (cf. Arminen 2007; Figeac and Chaulet 2018; Mantere and Raudaskoski 2017). Therefore, smartphones afford interactive involvement that, to a degree, resembles human-to-human interaction. Smartphone use taking place in a face-to-face gathering has even been likened to Goffmanian cross-talk (Ictech 2019), "a conversation or conversation-like activity maintained by persons who differentially share other interaction capacities" (Goffman 1971, p. 25). By "differentially shared" interaction capacities, Goffman meant that a member of the cross-talk interaction is bystander to a primary face-to-face engagement the other member is involved in. In other words, cross-talk means being part of a face-to-face engagement and temporarily interacting with some co-present other who is not part of that same encounter. Ictech's concept of digital cross-talk builds on Humphreys' (2005) "cellphone crosstalk" and relies on Goffman's inclusion of "conversation-like activity"[1] in the original definition (Ictech 2019, p. 28). Humphreys and Hardeman (2021, p. 112) later do the same

with the concept of "mediated cross-talk", all then overlooking the fact that in cross-talk the bystander, acting as a cross-talk partner, is still member of the same social situation as the participants of the primary face engagement. The presence of the bystander, and at least some aspects of the cross-talk interaction, are therefore perceivable to everyone present (Goffman 1964, p. 135). Smartphone activities, however, can even consist of hidden interactions between participants in the same co-present group (Tjora 2011), and can also be something completely different than social interaction (adjoe GmbH 2021). Unlike non-digital objects, which rarely afford more than one type of activity to be done with them, smartphone is a metamedium that works as a gateway for other media (Jensen 2016), typically not conveying the exact nature of its use to others (Mantere et al. 2021). This makes smartphones in face-to-face encounters a special research topic, not fully explained by previous research on other objects in face-to-face encounters and not optimally conceptualized, with too much reliance on concepts developed before the invention of smartphones.

1.2. Smartphones and Multiple Involvements

Main and side involvements were defined by Goffman (1963, pp. 83–148) using an very different example from that of a smartphone situation: talking (side involvement) while waiting in a line at the bank (main involvement). Involvement as a category supersedes engagement, like encounter supersedes conversation. Analyzing conversations and engagement requires access to the interactive resources used by the interactants themselves, but neither digital cross-talk (Ictech 2019) nor mediated cross-talk (Humphreys and Hardeman 2021) were developed with video or transcriptions of the actual social situations as their data. They therefore have limited capacity to take into account the minute details of smartphone engagement in social situations or to offer tools for analyzing actual moments of smartphone engagement during face-to-face encounters. Engaging in face-to-face interaction with a bystander during another face-to-face involvement, i.e., Goffmanian cross-talk, differs from engaging with a smartphone in face-to-face settings. Bystander inaccessibility (Mantere et al. 2021) shrouds the nature of face-to-screen interaction from others, at times shrouding even whether the smartphone is used for interaction at all, or just for personal information seeking or entertainment. Concepts of multiple involvements and varying intensities of engagement are therefore more useful than cross-talk. Smartphone involvement taking place within a face-to-face encounter gives birth to a simultaneous but separate digital participation frameworks (cf. Hampton et al. 2010). It is not an overlap of two participation frameworks like cross-talk is. It is separate, because without a specific account, the members of the face-to-face participation framework do not know whether the smartphone involvement they witness even constitutes a social interaction, and previous research suggests it to be relevant to them (Mantere et al. 2021). Likewise, the possible other members of the digital participation framework do not have awareness of the face-to-face participation framework unless specifically made aware of it (cf. Weilenmann 2003). This amounts to a type of interaction somewhere in between Goffmanian categories of focused interaction, unfocused interaction, and multi-focused interaction (Goffman 1963, pp. 83–148), but not entirely in any of them. The ambiguous presence of separate participation frameworks in smartphone situations further calls for new research that does rely not too much on pre-existing conceptualizations.

1.3. Interacting with Smartphones

Walsh and Clark (2019) argue that smartphones disrupt what they call the "socialized trance" of face-to-face interaction, whereas Licoppe (2004) argues that already traditional mobile phones brought about a "'connected' management of relationships" where the expectation of continuous mediated availability brings distant participants present through assumed connectivity in a way not possible before the proliferation of such technology (cf. also Ling 2008, 2012). Henriksen et al. (2020), through observations and interviews in cafés, found smartphones to be mainly present at the beginning of the encounter, e.g., for posting photos of food on social media, and at the end of the encounter, e.g., for searching for

transport options to the next destination. Checking the phone for urgent messages or calls, showing photos to others, disengaging from someone who used their phone too much, and contagious using of one's phone because others were using theirs, were also found to be common. Some previous research suggests that the opportunities for disengaging from smartphone use are at least partly related to the phase of the course of activity being advanced with the device. Laurier et al. (2016) studied collaborative navigation with map applications and found user–smartphone interaction to have its own sequential progression, which was interleaved with that of the social interaction. Mantere and Raudaskoski (2017) coined the concept of "sticky media device" to depict situations where interleaving user–smartphone interaction and social interaction lacks fluidity and results in silences, hesitation markers, and other dispreferred turn signs, even during preferred sequences. User–smartphone interaction and face-to-face interaction may progress in separate sequential rhythms, and the sequential organization of one may at times encumber on the other. Licoppe and Figeac (2018) described how smartphone use while driving is interleaved with traffic light stops. They found user–smartphone interaction to be structured in transition relevance places (TRPs), similar to human interaction. TRPs are the moments delineating turn constructional units (TCUs). In human interaction, a TRP is a moment in which the current speaker may change without it being interpreted as an interruption. Similarly, Figeac and Chaulet (2018), using eye-tracking technology to study smartphone use in public transport, found that the gaze shifts away from the smartphone to be organized in relation to the sequential progression of the user–smartphone interaction, as well as the events in the physical environment. These studies support the view that engaging with one's smartphone may form interactive projects whose expectations for user participation do not always temporally align with the expectations of participation in the current social situation. This does not, however, mean that user–smartphone activity during face-to-face gatherings would necessarily at any point take all of one's interactive capacities. Tjora's (2011) interviewees used text messages for multiple purposes to discreetly interact with others in the same physical space while keeping this interaction hidden to the rest of the encounter. DiDomenico et al. (2018) described how a participant in three-party face-to-face conversation can attend to an incoming text message while remaining sufficiently aware of the unfolding storytelling to later produce a relevant smile or utterance (cf. also Didomenico and Boase 2013). Human capacity to attend to several simultaneous courses of action is also depicted in Haddington et al.'s (2014) concept of "multiactivity." On the other hand, over 100 years of experimental research point towards our inability—without a significant reduction in efficacy—to attend to two or more simultaneous activities necessitating conscious evaluation (Wu and Liu 2008). Therefore, social engagement or availability for interaction should not be assumed to be binary categories, either. It is much more likely they manifest in degrees.

1.4. Embodied Engagement in Social Interaction

Displays of engagement have long been recognized to play a crucial role in manifesting one's relation to the ongoing talk, and through this, also to be constitutive features in the realization of speakership and hearership (Goodwin 1981, p. 125). Goodwin and Goodwin (2005) propose the perspective of ongoing participation, including non-vocal participation, to revise Goffman's (1981) classic concept of footing. Goffman focused on different persons and their roles within the categories of speaker and hearer through linguistic alignments and forms such as reported speech. In interactive footing, the different roles in a framework of participation "are constituted not only through talk, but also through participation as a dynamically unfolding process" (Goodwin 2006, p. 37). Embodied participation through different forms of engagement has also been classified. Schegloff (1998) conceptualized the social implications of physical configurations in simultaneously attending to multiple activities. Whether the activities were exclusively physical, or also social in nature, there were recognizable and socially influential, qualitatively different forms of orientation toward those engagements. Though the number of ways one may position their body in

relation to multiple engagements is surely unlimited, Schegloff recognized three rotational axes to have distinctive relevance: the hips, the shoulders, and the neck (see Table 1). Body directions below and above these axes embody projected durations and hierarchy of the involvements and the axes afford three possible directions for simultaneous orientation.

Table 1. Configurations of embodied engagement in Schegloff's (1998) body torque classification.

Direction 1	Direction 2	Direction 3

Note: the feet icon refers to the orientational axis of the waist, the body icon to the shoulders, and the smiley face to the head.

Use of one's body and objects, just like the use of eye gaze, may organize several aspects of social interaction, like the practices of suspending or alternating between activities (Haddington et al. 2014; Nevile et al. 2014; Rossano 2012). Engagement and action are not separate, but reflexively construct one another (Goodwin 2006). A general classification of forms of smartphone engagement in relation to conversational engagement and conversational activity has not previously been attempted. Today, smartphones afford nearly ubiquitous opportunities for engaging in activities and participation frameworks separated from the ongoing face-to-face situation (cf. Mantere et al. 2021). This article analyzes spontaneous smartphone engagement in naturally occurring interaction to show how it is timed to not overlap prominent positions in face-to-face conversation, how different positions of user–smartphone configuration manifest different levels of engagement, and how moves from one position to another are oriented to as adjustments in the degree of face-to-face engagement. It answers a need for more interaction research on smartphone use in social situations in general (cf. Walsh and Clark 2019) and conversation analytics research on smartphone engagement in face-to-face settings in particular, and opens new pathways for future research on such mobile digital metamedia devices in collocated encounters.

2. Materials and Methods

2.1. Conversation Analysis

Data collection and analysis followed established procedures in ethnomethodological conversation analysis (CA). CA is a collection of methods and cumulative findings in the study of conversational organization, also encompassing embodied interactions not constituting a conversation per se. CA seeks to reveal and describe the methods participants themselves use in producing and understanding social realities in naturally occurring everyday encounters. CA therefore responds to the challenge of ecological validity by only studying non-motivated social situations directly, not organizing enactments of social behavior in a laboratory or prompting participants to imagine social situations while answering a survey. Participants' own orientations towards the events taking place in the encounters are described through turn-by-turn analysis, paying attention to what is said and how it is said, as well as all of the embodied non-vocal behavior. A detailed transcript of the interaction is prepared to aid the analysis. A fundamental observation guiding the

analysis is that talk organizes into turns. In everyday interactions, turns are not predestined, but are negotiated through vocal and non-vocal conduct as the encounter unfolds (Have 2011; Heritage 1984; Sacks et al. 1974). Typically, only one person speaks at a time, and both overlapping speech and silences are minimized. When arriving to a moment of possible turn completion, a transition relevance place (TRP) and another speaker may take the turn, and if that does not happen, the speaker may continue (Sacks et al. 1974).

Turns in interaction also organize into recognizable sequences. Encounters often begin with greetings, may move into exchange of news, and end with a sequence of goodbyes. Sequences often further organize into pairs of turn-types, or adjacency pairs, where a certain type of first turn produces an expectation for a certain type of second turn. A greeting is expected to be followed by another greeting, not a farewell or a request. Moreover, there are recognizable preferences related to turns. An invitation is typically expected to be followed by an answer and not a greeting, and moreover, it is expected to be accepted rather than rejected. The "expectation" here, however, does not reflect any assumptions of private cognitive states of participants. It merely points out that interaction is typically produced "as if" acceptation was expected to follow an invitation. This is an institutionalized aspect of interaction affording concerted and mutually intelligible social action, not a psychological claim. Preference organization may be observed, for instance, in acceptations of invitations typically not being accompanied by delays and explanations like rejections are (Schegloff 2007).

2.1.1. Storytelling Sequence

The typical distribution of turns in interaction creates the expectation that exceptionally long turns require some special work. Sequences of spoken narrative form this kind of exception. In a storytelling sequence, the typical turn-taking organization is relinquished and the teller of the story may continue through multiple TRPs without orienting to a possibility of a speaker change. This continues until the story is completed. Storytelling sequence affords the recipients to the story to give their consent in entering this special arrangement by including a slot for a story preface that precedes the story. Here, some form of "go ahead" signal is expected by the story recipients and hints are usually provided about the nature of the story, enabling them to easily give appropriately affiliative responses as the story starts to unfold. The "punch line" or climax of the story is made to stand out enough for the recipients to offer their reactions at the right time. The stance the teller themself has on the climax is also often displayed in the way they produce it (Mandelbaum 2003).

2.1.2. Transcription in Conversation Analysis

CA prides itself as a highly empirical enterprise, and the recordings of social encounters used as data and evidence are accurately transcribed. Any vocal or non-vocal resources available to the interactants in the production and understanding of interactive events should ideally also be available to the analyst and their audience through the transcripts. Accurate transcripts therefore play a crucial role in deciphering and showcasing the methods the participants use in the construction and interpretation of these events. CA transcripts aim to accurately represent not only the words that are spoken, but also the way they are spoken, as well as all other uttered sounds, like coughing and audible inbreaths and outbreaths. Similar accuracy is aimed at transcription of non-vocal conduct. Gail Jefferson (cf. Jefferson 2004) developed the first transcription system in CA during the 1960s and 1970s, at a time when most data extracts were of English-language phone calls. This excluded the need for transcription of non-vocal conduct and translations. In Jeffersonian transcription, each line of transcribed vocal conduct is designated with its own line number, as well as when it overlaps with vocal conduct in the previous or following line. The transcripts in this article, however, assign numbers to transcribed segments[2] of co-operative multimodal conduct. It reflects the author's Goodwinian stance against logocentrism in interaction research (Goodwin 2006, pp. 25–28), and also makes representation and referring to the transcripts more efficient and intuitive. The transcribed vocal

conduct, non-vocal conduct, translations, and overlapping conduct of other participants are all organized and referred to by the same segment number whenever they represent concurrent events. When drawings of the encounter are provided, they always occupy the first line of the segment.

2.2. Data

A corpus of 13 video recordings with a total length of 11 h was collected from naturally occurring everyday encounters in Finland, France, and California, U.S., between 2017 and 2019. Participants were approached in cafés, parks, campus dining halls, bars, terraces, and in a line for an outdoor public bathroom. The participants' ages varied from 17 to their late 20s. Ten out of 13 encounters involved smartphone use. After the participants agreed to partake in the study, the researcher departed and left behind a camera on a small tripod. The recordings were viewed repeatedly while writing down preliminary observations on forms of smartphone engagement. These viewings and notes formed the basis for the classification of commonly occurring embodied user–smartphone configurations, i.e., the smartphone positions (Figure 2). Initial observations hinted towards changes in these configurations not appearing randomly. A 97 min encounter among three Finnish high-school students was then chosen for more precise analysis in order to study the potential roles these changes might have in the organization of interaction. The encounter was chosen for its ample conversations, several changes in the themes of conversation and states of interaction, varying ways of smartphone use by its participants, and the relative ease of distinguishing from the recording what was said and who said it.

The 97 min recording was transcribed in two levels of accuracy: (1) simplified transcripts for sections where the role of smartphones was clearly limited, simple, and straightforward, and (2) accurate transcripts for sections where smartphones were present in more relevant and varied ways (see Appendix A). The simplified transcripts were organized into 40 intervals of two and half minutes. Smartphones were engaged with, by looking at and touching the screen, in 38 out of the 40 two-and-half-minute intervals. The only intervals where smartphones were not engaged with were the five minutes soon after the beginning of the encounter, during which the participants focused on eating and talking. Transcribed data excerpts were viewed in several data sessions with colleagues in the U.S. and Finland.

Figure 2. The order of the smartphone positions here does not reflect any assumed order in strength of smartphone engagement they might be embodying[3].

2.3. Ethical Considerations

The research did not include harming the participants in any way. Visual representations of the data, participant names, and other recognizable details were anonymized. The national laws and ethical guidelines regarding underage participants were followed. According to the Finnish National Board on Research Integrity (2019), participants aged above 15 are given the right to independently decide on participation in non-dangerous research. The participants between ages 15 and 18 were all in Finland. The participants were informed that the video recordings are part of a data collection on forms of social life in today's societies. Participants who chose to partake in the study were informed of the more precise research topic, i.e., smartphone use during face-to-face encounters, after the

recording. Participants were at this point offered the option to retract their participation without having to give any explanation. Participants were also given the researcher's contact information to retract their participation later. Participants in all groups expressed understanding as to why the exact topic was not revealed beforehand. No participant retracted their participation. The data were kept in a secure locked location and protected by a password.

2.4. New Classification and Transcription System for Smartphone Use in Social Situations

To accurately capture the role of smartphones in face-to-face encounters, a new transcription system was developed. This system takes into account how smartphones differ from other everyday objects through the interactive nature of their use (Figeac and Chaulet 2018; Licoppe and Figeac 2018; Mantere and Raudaskoski 2017) and the bystander inaccessibility they incite (Mantere et al. 2021). The system affords an accurate recognition and study of the levels of embodied smartphone engagement during face-to-face gatherings. Smartphone positions describe the user–smartphone configurations that embody the physical relationship between a smartphone and its user. The concept has kinship with Schegloff's "body torque" (Schegloff 1998), which depicts levels of embodied engagement towards two or more simultaneous activities. Though defining embodiment of engagement in multiple involvements through the three axes of the head, shoulders, and hips, Schegloff did not suggest the feet, hands, or eyes to be interactionally irrelevant. He merely described body torque at the head, shoulders, and hips as a level of embodied organization of interactive involvement that has distinct functional unity and coherence. Smartphone positions are similar. Both body torque and other embodied interactional conduct, such as eye gaze, should be transcribed and analyzed in any episodes where they feature as sequentially important. The same applies for smartphone positions. They do not in any way make eye gaze irrelevant in relation to the smartphone screen. Nor do they make the swipes and taps done on the screen's surface irrelevant. Meanwhile, no transcript or analysis can ever report to an equal degree on all of the embodied and vocal conduct that have a role in the construction of social realities. This does not, however, mean that new systems of grouping and classification of interactionally relevant conduct could not facilitate analytical understanding. After repeatedly viewing and taking notes on the data, with the focus on how smartphones were engaged with, three parameters of embodied smartphone engagement were recognized as central[4]:

1. Location of the phone (e.g., pocket, bag, hands, table, or another surface);
2. Direction of the phone's screen in relation to the user's head or the surface the phone is resting on;
3. Number of hands holding the phone or held in front of the phone.

The parameters form 13 typical smartphone positions (Figure 2). Occasionally, the data also feature phones in empty beer glasses, inside a bra, resting on a leg, or being held by one's feet. Those positions may also manifest as interactionally distinct in the episodes they feature in, but due to their rarity, it would be impractical to include them in any standard system. They may be added when needed.

The majority of the 13 positions are self-explanatory (Figure 2). In TableUp (TU) the phone rests on the table, with the screen pointing upwards. In TableDown (TD) the screen points down. In the HandFace (HF) position the user is holding the phone with one hand while the screen points towards the user's head—whether the user's head points towards the screen or not. The phone may therefore be moved in and out of the HF position without the user ever gazing anywhere near the phone. In HF, the screen "gazes" at the user, whether the user gazes back or not.

Even small changes to the screen's direction might be sequentially relevant. Therefore, when the user relaxes their hand and the screen no longer points directly towards the user's head, the phone is said to be in a HandAway (HA) position. The difference between HandFace (HF) and HandAway (HA) is at times hard to tell. In some HA, the screen may still point towards the general direction of the user's head, and the user may continue to

have visual access to the screen. The border cases are solved by looking at the smartphone position through time, and in relation to using the phone. If the smartphone's screen is operated upon and looked at and the user then turns away and then turns back towards the screen in order to re-engage with the device without needing to adjust the screen's direction, the phone is said to have been in the HandFace (HF) position the whole time. This kind of episode, often occurring in the data, also makes the HandFace (HF) position a temporary "home position," a position from which bodily behavior is begun and to which it returns (Sacks and Schegloff 2002).

The BothHands (BH) position has the most interactive resources allocated to be available for user–smartphone interaction (cf. DenBleyker 2010). The phone points towards the user's head and is held by both hands while both hands are in an equal position to manipulate the screen. When the screen is offered to be viewed by someone else, it usually is a case of 1-handedShow (1S). It is also possible to show the screen to others with both hands (2-handedShow = 2S). When both hands are relaxed in the BothHands (BH) position and the screen is allowed to point away from the user's head, it is called Both-handsAway (BA). This, like 2S, appears to be rare. Another less common position is the Chest (CH) position. In CH the screen is made inaccessible to both the self and others by burying it into one's chest. In TableManipulate (TM) the phone is on the table, screen up, and a hand is placed in front of the screen, in a position to manipulate it.

Sometimes the positioning and the use of the second hand made demarcation between BothHands (BH) and HandFace (HF) difficult. This was the case especially when users touched the screen intermittently with both hands, but the hands still also clearly had different main roles. For consistency, HandFace (HF) is defined to cover only those cases in which the same hand that holds the phone is the only hand used to manipulate the screen. Ambiguities between BothHands (BH) and HandFace (HF) were solved with the recognition of HoldManipulate (HM) as a separate category, similar to that of TableManipulate (TM). HoldManipulate (HM) covers the cases in which one hand is dedicated to holding the phone and the other to manipulating it by positioning it in front of the screen, with the palm towards the screen. HoldManipulate (HM) differs from BothHands (BH), which enables both hands to equally, though at times alternatingly, manipulate the screen and hold the phone.

Some smartphone positions are not qualitatively comparable with others. They do not always differ from each other only in the degree of engagement they manifest on a qualitatively coherent axis. Positions like 1S and 2S invite others to participate in viewing the screen. In the PC position, the presence of the smartphone may be completely hidden from others, but it may still silently communicate with its user through vibration. The level of engagement embodied by each smartphone position in relation to other positions is not yet comprehensively known.

2.5. Smartphone Moves

Changing a smartphone position is called a smartphone move. Turning around a phone lying on the table is a TableDown (TD)–TableUp (TU) move. Releasing one hand from a smartphone while still engaging with it is a BothHands (BH)–HandFace (HF) move. Grabbing a phone that is lying on the table screen downwards and pointing the screen towards one's face is a TableDown (TD)–HandFace (HF) move. If each smartphone move should be studied separately, the sheer number of them would pose a challenge. With the 13 smartphone positions defined above, the sum of possible smartphone moves adds up to 156 (see Appendix B). If inverse moves (e.g., TD–HF and HF–TD) were not counted separately, 78 moves would still remain. These large numbers also discourage including rarer positions in the standard classification. Adding just one more position would increase the sum of possible smartphone moves by 26, or by 13 if inverse moves were not included. These large numbers also make studying smartphone engagement differ drastically from the embodied multiactivity depicted by Schegloff (1998). His embodied orientational configurations resulted in only 20 possible moves between the three possible directions

(see Appendix B). This is far fewer than the 182 smartphone moves proposed in this article. Other differences also apply. The hierarchy of Schegloff's bodily axes is important for his analysis: Waist direction indicates the engagement treated as the most permanent, shoulders indicate engagements of mediocre duration, and head direction marks the most passing involvement. Smartphone moves only depict the regulation of two engagements: smartphone interaction and face-to-face interaction. In addition, the availability of body torque as an interactive resource is likely even more ubiquitous than that of smartphone moves, and the use of body torque does not necessitate an object like smartphone moves do. Body torque nevertheless sets precedence in the classification of embodied multiple involvements. The above numbers also speak to the challenge of studying each of the smartphone moves individually before creating a transcription system for them. No social significance should be projected to any smartphone move before empirical research, but the data as a whole suggest that smartphone moves in general do not occur as sequentially random or inconsequential. This article begins the work of studying smartphone moves by examining sequential implicativeness of a few of them and developing a transcription system to facilitate these analyses.

3. Results

The results explore three ways smartphone moves feature in conversation. Smartphone moves may construct shifts in the participation framework towards interactionally fewer involved roles, or they may work as turn-holding devices and take part in organizing a shift in the conversational state of the encounter. Many other ways of using smartphone moves surely exist. What they seem to have in common, however, is that they embody adjustments in engagement. The results depict how smartphone engagement is treated as conversational disengagement, and how the adjustment of smartphone engagement by a smartphone move may impact ongoing conversation.

3.1. Smartphone Move as a Change of Footing

Clo, Liz, and Deb (names changed) meet in a café shortly after the end of the semester. Throughout the afternoon they engage both with each other and with their smartphones. Sometimes the phone use is connected to what they are talking about and sometimes not. They occasionally disclose to each other the reason for using the phone but not always. The first extract takes place 15 minutes after arriving at the café. They have just finished eating their cakes and are talking about different kinds of being drunk. They each continue the previous speaker's story with one of their own. Clo is telling about an experience she calls "the night of the lizards."

Extract 1

```
1 Clo: m(h)ä en voi ees kuvailla miten pahalta m(h)usta [t(h)untuu,      .hhh]
       I(h)  can't even describe  how   bad   I(h)     [f(h)eel,        .hhh]
   Liz:                                                 [m(h)ä en tajuu.  Mul]
                                                        [I(h) don't get it. I]


2 Liz: ei   tuu  mitään £toll[asta£,
       never have anything £l[ike that£,
   Clo:                       [se o iha hirveetä. Mä vaa oikeesti istun puoli
                              [It's so horrible. I'm just sitting in this half
```
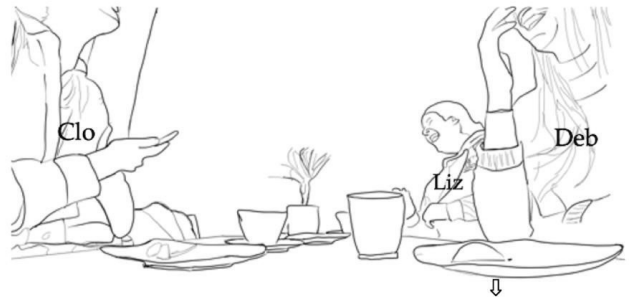


```
3
   Clo: istu[vas    asennossa  mun  [sängyssä ja tärise ja mä oo iha sillee- (0.1)^HF-
        lyi[ng-down posture in my   [bed  and am  shaking and I'm  all like- (0.1)^HF-
   Deb:    [hah ha ha
   Liz:                              [HA Ha ha ha
```



```
4
Deb: .hh .hhh^CBH
```

Throughout segments 1–3 Clo is telling a story while holding her phone in the Hand-Face (HF) position. At the end of the turn, while uttering *"shaking and I'm all like-,"* she produces a corporal description of her past shaky state. The cut off last vowel (*"like-"*) guides others to seek the completion of her turn from the semiotic field of her body rather than that of the verbal modality (cf. Goodwin 2000). The extreme case formulation "all like-" (Pomerantz 1986) and the enacted shaking hint to this possibly being the climax of the story (cf. Mandelbaum 2003). A mere 0.1 s later Clo begins a HandFace (HF)–BothHands (BH) move, making both her hands available to interaction with the smartphone. Similarly to how withdrawing the gaze away from one's interlocuters may participate in forming an end to a course of action (cf. Rossano 2012), Clo's HandFace (HF)–BothHands (BH) move shifts her multimodal participatory ensemble towards less engagement in face-to-face interaction, and at a moment of possible storytelling completion, reflexively constructs her face-to-face activity of drunkenness-describing as finished. The move therefore contributes to the construction of the very same activity completion it partly derives its meaning from. With the HandFace (HF)–BothHands (BH) move in this particular sequential environment, Clo leaves behind the status and any claim to the position of principal speaker, releasing it to be available to others without the risk of being seen to interrupt.

3.2. Smartphone Move as a Turn-Holding Device

The next extract takes place 43 s after the previous one. Clo has been in the BothHands (BH) position the whole time. Liz has been telling about a humorous encounter with her neighbor. When Liz finishes, Clo starts a story of a ride home from a high-school party.

Extract 2

```
1 Clo: mää muistan joskus ku iskä    haki    mut (0.3)  ((anonymized)) bileisᴮᴴ-tä?ᴴᶠ
       I remember once when dad picked me up from (0.3) the ((anonymized))parᴮᴴ-ty?ᴴᶠ

2      ja sit mää muistan ku tota noin nii just- ne oli semmosia (.) oli  just
       and  I remember     just like  when- they were    like  (.) I had like drank
```
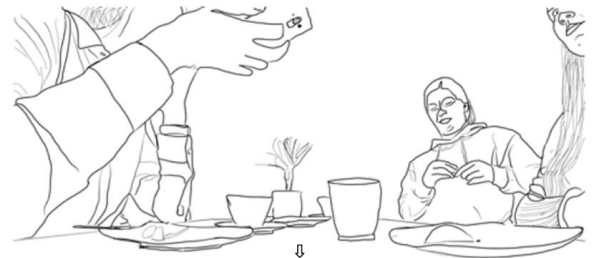


```
3
Clo: niinku sillee () juonu (jostai/just j'tai) siiderᵗiä ja tälleᵗe [ nᵗäi
     like () drank (from-somewhere/s'm'thing like) cidᵗer and  sucᵗh [thᵗat
deb:                                                ᵗnod        ᵗnod ᵗnod
Liz:                                                            [tsk
```



```
4
                          236 Hz
              151 Hz
Liz: [= @ J  o  o :    @  ]
     [= @ Y  e :  a h @ ]
Clo: [>ᴮᴴ-ja  sit meni  sinn]e autoo< ja isᶜᴴkä kysy no mite meni ja yrittää
     [>ᴮᴴ-and then went into] the car< and dᶜᴴad asked well how did it go and you try to
```

At segment 1, Clo begins a storytelling sequence with a typical story initiator: *"I remember."* She assumes the role of the principal speaker also by decreasing her smartphone engagement with a BothHands (BH)–HandFace (HF) move at the end of her story preface (*"the ((anonymized)) parᴮᴴ-ty?ᴴᶠ"*). The move releases some of her interactive resources, namely, one of her hands, from being assigned available for face-to-screen engagement to being assigned available for face-to-face interaction. Liz and Deb take positions as the story recipients by silently gazing at Clo and letting her speak.

Clo tells about the alcohol she drank before being picked up from the party, setting the scene for the encounter with her father. Deb provides typical minimal input with repeated nodding nearing the TRP at segment 3. Liz acts differently. Previously in the encounter she had produced long overlapping turns on top of Clo and Deb, making the speech already projected by them left unproduced. Now Liz produces a snapping sound with her mouth (segment 3), followed by an animated *"@Ye:ah@"* at segment 4. This differs from Deb's nodding or other alternatives Liz would have had, like "Yeah?" or "Mhm?" Liz's *"@Ye:ah@"* is highly animated. It is accompanied by her eyes gazing up and performing a roll from right to left, her facial muscles tensing into a mouth-open smile, and her head moving

rapidly from side to side. Her back and neck straighten to a more alert posture. Her utterance is also vocally striking. Though lasting only 0.3 s, it sounds long in comparison to the surrounding speech. The pitch starts at 221 hertz, drops rapidly after 0.04 s to a relatively long 0.14 s "oo" (in the original Finnish), steadily descends from 173 Hz to 151 Hz, rises back to 200 Hz for 0.03 s, and finishes as a steadily arced 0.09-s "o" at around 236 Hz.

Clo's *"from-somewhere"* (*jostai* in the original Finnish) at segment 3 sounded much like *"s'm'thing like"* (*just j'tai*). It is possible that Liz misheard it. As response to *"s'm'thing like"* (*just j'tai*), Liz's *"@Ye:ah@"* would verify the specialness of the describable hinted by Clo's usage of the term *just* (the colloquial version of the Finnish *juuri*, which translates to "just", "right", "exactly", or "very" in English). Whatever the reason, Liz's *"@Ye:ah@"* treats the setting of the scene as having already introduced an element of interest inviting commentary from the story recipients—a treatment starkly different from that of Deb's.

Clo begins a HandFace (HF)–Chest (CH) move overlapping Liz's *"@Ye:ah@"* and rapidly rushes through the words "*>and then went into] the car<*" to continue the story. Quickly initiating the turn constructional unit with an "and" connector marks the just-preceding TRP as an unsuitable moment for a speaker change. This is made evident also by the speed of Clo's utterance. She spent 1.3 s on the eight syllables of "*from-somewhere like cider and such*" before Liz's animated "*@Ye:ah@*," but compresses the following eight (in the original Finnish) syllables of "*and then went into the car*" to a mere 0.5 s. Concurrent with the rush through (Walker 2010) the HandFace (HF)–Chest (CH) move, which reduces the allocation of interactive resources available to user–smartphone involvement, constitutes a multimodal turn-holding device intensifying Clo's engagement in face-to-face interaction, thus helping to hold on to speakership. In the HandFace (HF) position the screen of the device is pointed towards Clo's head, making the visual modality clearly available as a resource in the smartphone involvement. In the Chest (CH) position the screen is hidden in her chest. The interactive resources available for face-to-screen interaction are thus diminished by the HandFace (HF)–Chest (CH) move. Simultaneously, the move achieves an increase in the interactive resources available exclusively in the face-to-face involvement. Disengagement from the smartphone is, however, not total. It need not to be in order to be sequentially significant. A smartphone in the Chest (CH) position still remains in a closer relationship with its user than a smartphone in the TableDown (TD) position would, let alone a smartphone in the Pocket (PC) or Bag (BG) positions. Smartphone engagement is thus adjusted by the move, but not completely transformed.

Through Clo's rushed speech a space is created wherein Liz, were she to continue to vocalize, would do so in overlap to Clo's turn. This would take place far from a TRP and could in a storytelling context be easily seen as an interruption. The smartphone move, for its part, participated in the construction of Clo as the current speaker due to the accountability and intelligibility of the decrease in the interactive involvement with one's personal device in such a sequential environment. The position of a hearer, rather than a speaker, is manifestly proffered to Liz, who, directly following the enactment of Clo's turn-holding device, assumes it with silence, fixes her gaze towards Clo, and takes on a facial expression of focused seriousness (cf. Schegloff 1987; Walker 2010).

3.3. Smartphone Moves and Organizing the Conversational State

The next extract takes place soon after the previous one. Clo has just finished her story about the ride home from the high-school party. Liz now comments on the story.

Extract 3

```
1 Liz: jos lähtökohtasesti alkaa valehtele[e    sit   se] tietää että (.) ja sit se myöntää
       If  you   start  off   by    lyin[g and then he] knows  that (.) and then you admit
  Deb:                                  [↑ä    l     ä]
                                        [↑so       true]

2 Liz: =ni sit sä tiedät et se on juonu kyllä vähä enemmä [@ku          maistanu,@]
       =then you know that they've drank a bit more  than [@just tasted something,@]
  Clo:                                                    [    >nimeonomaa<     ] ja
                                                          [     >exactly<       ] and
```



```
3
  Clo: sit vielä se ku tota noi nii toi- (0.8)ᴮᴴ⁻(0.2) .mtᴴᶠ (0.2) öö
       then also that the thing that my- (0.8)ᴮᴴ⁻(0.2) .mtᴴᶠ (0.2) umm
☺clo: >>-sssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss
☺deb: ccccccccccccccccccccccccccccccccccccc.........................
```
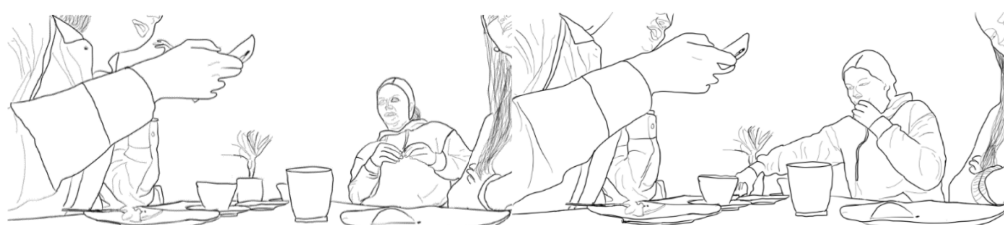


```
4
  Clo: iskä >oli sillee< [@↑nii joo mä muistan ku Sara tota noi nii (.) oli alaikäsenä juomassa
       dad >was like<    [@↑so yeah I remember when Sara was in fact (.) out when still underage
☺clo: sssssssssssssssssss......................,,,,dddddddddddd...........,,,,,,,,,,lllllllllllll
  Liz:                   [→°mä   katon ton-°       ᵀᴰ⁻                                    ᴴᶠ
                         [→°I'll check the-°       ᵀᴰ⁻                                    ᴴᶠ
```

At segments 1–2, Liz abstracts a generalized lesson from Clo's story and Deb voices her agreement ("*so true,*" segment 1). Clo then affirms Liz's interpretation at segment 2 ("*[>exactly<] and*") by overlapping Liz at the earliest opportunity, just before the end of Liz's turn. By adding "*and,*" she projects to continue speaking, which she then does with "*then also that the thing that my-*" in moment 3, producing indexical expressions pointing to referrals yet to come. This projects further continuation of her turn. Considering the prevailing sequential environment, i.e., telling stories, Clo seems to be embarking on a spinoff story to her previous one, suggesting a conversational organization giving her the right to hold the floor through multiple TRPs. If affirmed by others, they will normatively be restricted to positions of story recipients, expected to give Clo their attention, but to produce little speech themselves (Mandelbaum 2003; Stivers 2008). Gaining a right to tell a story and have others position themselves as story recipients also includes an expectation to tell it. A story prefaced, gaining an audience but then not told, would go against the preferred sequential unfolding of the situation (Mandelbaum 2003). However, the progression of Clo's vocal conduct is much less nimble than projected by her rapid and overlapping turn beginning. It includes hesitations, a cut-off phrase, a long pause, filler words, and a smacking of the mouth and a hesitating "*umm*" sound in the middle of the turn, in places not forming TRPs (segment 3).

3.3.1. Sticky Media Device and Lack of Teller Engagement

These delays in progressivity in Clo's turn share characteristics common with dispreferred turns, but nothing in the turn's sequential placement or content suggests it to be so (Pillet-Shore 2017). Rather than relating to the verbal environment, these elements seem to form a case of sticky media device (Mantere and Raudaskoski 2017), i.e., dispreferred turn signs connected to advancing interactive projects in two simultaneous but separate participation frameworks: (1) the face-to-face interaction with Liz and Deb, and (2) the face-to-screen interaction with her smartphone (cf. Hampton et al. 2010). The stickiness may manifest her work in getting the private face-to-screen interaction to a sequential place where it more readily proffers an opportunity to re-allocate interactive resources to face-to-face interaction (cf. Figeac and Chaulet 2018; Licoppe and Figeac 2018; Mantere and Raudaskoski 2017). Engagement in two concurrent but separate participation frameworks may challenge the temporal organizing of interactive conduct, as one may find it difficult to (1) read their smartphone screen, (2) decide on how to relate to what they are reading, and (3) tell an unrelated story to one's face-to-face interlocutors all at the same time, without at least some of these activities being hindered (cf. Wu and Liu 2008).

However, unlike in a solitary multiactivity situation where others' interpretation of one's conduct does not play a role in enactment of the activities engaged in, here, engaging with one's co-participants includes within this activity a witnessing of Clo's distributed engagement. This forms a reflexive context for others to understand her conduct, including the delayed progressivity in her turn. Clo's hearers see her maintaining the BothHands (BH) position throughout the rushed turn beginning (segment 2) and the majority of her turn's delayed proceedings (segment 3). They see that only after a cutoff and a pause at segment 3 (*"my- (0.8)"*) does Clo finally decrease her smartphone engagement with a BothHands (BH)–HandFace (HF) move. Even then, she maintains engagement with her phone in the HandFace (HF) position, in which the phone's screen points towards her face and one of her hands remains dedicated to be available for user–smartphone interaction. Her continuing smartphone engagement also manifests in her head remaining oriented towards the device. The cut off *"my-"* could, in another context, be a Goodwinian (Goodwin 1980, pp. 55–94) device for achieving mutual gaze at the turn beginning. Here, however, Clo already has the gazes of both her recipients. She herself is the only one not orienting to the face-to-face framework as her primary engagement, neither with head orientation nor embodied user–smartphone configuration. Clo's delayed progressivity therefore suggests face-to-face engagement at this point to be subordinate to her face-to-screen engagement. Contrary to acquiring hearers' gazes, the cut off *"my-"* in this context seems rather to repel them. Deb and Liz respond to Clo's conduct as a proposed re-organization of situated priorities and enact a symmetrical retrieval from face-to-face involvement on their own part. Their means of disengagement, however, differ.

3.3.2. Differing Disengagements

Deb is the first to disengage, torquing her head away from Clo in segment 3 before Clo's BothHands (BH)–HandFace (HF) move and just after the cut off *"my-"*. At this time, Liz continues to keep her head torqued towards Clo, silently smiling with her mouth frozen open, as if waiting to react to a humorous spinoff story soon to follow. However, when Clo, regardless of her partially disengaging BothHands (BH)–HandFace (HF) move, continues to keep her head oriented towards the screen of her smartphone, and her storytelling simultaneously includes pauses, smacking of the lips (".mt"), and an "umm" sound, delaying its advancement, Liz finds herself in a peculiar situation. Though Clo lessened her phone engagement, her HandFace (HF) position still affords the smartphone screen to be her primary focus of attention. Her head direction and the delayed story production also suggests this to be so. Hence, neither the person with the floor to speak and therefore responsible for producing the object of joint attention (Clo) nor Liz's fellow story recipient (Deb) are orienting to the story as the primary involvement in the situation. This represents an emerging shift in the co-operatively constructed hierarchy of involvements in the

encounter: a downgrade in the primacy of joint social projects, giving space and opportunity for individual pursuits like personal projects with one's smartphone. At segment 4, Liz also disengages, ironically starting to reach for her phone exactly at the same moment Clo finally disengages from hers.

When Liz starts to move her body in order to make the TableDown (TD)–HandFace (HF) move, she produces an explanation (*"I'll check the-"*). This echoes explanations often given to dispreferred actions (cf. Pomerantz 1985). Even though Liz's utterance ended with a cut off *"the-"* and the explaining object was never produced, the turn still marked the accompanying TableDown (TD)–HandFace (HF) move as something to be explained. Previously in the encounter, participants had occasionally checked their phones for time or notifications, e.g., quickly moved in and out of the TableManipulate (TM) position, while never accounting for these moves. Those checks, which can be done without unlocking the phone's lock screen, are so quick that accounting for them would take more time than doing them. Accompanying an activity-occupied disengagement (cf. Goodwin 1981, 1987) with an explanation projects an activity long enough to merit such an account.

3.3.3. Smartphone Engagement as Conversational Solidarity

Liz's TableDown (TD)–HandFace (HF) move retroactively reframes Clo's prior stumbling by further developing the emergent shift of the conversational state towards a format of lesser gravity for Clo's interactive responsibilities. The TableDown (TD)–HandFace (HF) move participates in transforming the setting into such, where the story recipients may also engage in other activities, not just listening to the story. Similarly to how performing in a karaoke bar, where people also engage in conversation and drinking, is not the same as performing in a concert hall, Liz's co-occurring activity reframes Clo's storytelling. In telling a story, one is given special right to continue through several TRPs, and others are expected to listen until the end, similar to an audience at a concert. This entitlement is supposed to be taken responsibly by investing oneself in the storytelling and producing the story parts with contiguity. When Clo visibly engages in another activity and observably struggles with storytelling at the same time, it speaks to her assigned priorities of the storytelling activity in relation to that other activity. Liz's TableDown (TD)–HandFace (HF) move then invites others to take the perspective that Clo's stumbling would already have taken place in an environment in which the audience was also free to do other things as well, not just listen to the story. Just like in a karaoke bar one might start to pay more attention to talking with their friends when the singer is in trouble, in a way, by avoiding attention to a struggling performance and decreasing publicly assigned importance to it (cf. Goffman 1955), Liz diverted focus from Clo's lack of disengagement from her phone and the retardant storytelling accompanying it with her TableDown (TD)–HandFace (HF) move.

3.3.4. Harmonizing Engagements

Liz's TableDown (TD)–HandFace (HF) move also portrays her understanding of her diminished interactive obligations in the situation. She treats Clo's continued gaze towards her phone, coupled with the lack of progressivity in the storytelling, as an opening for her also to engage in her own individual smartphone activities. Liz's TableDown (TD)–HandFace (HF) move this way also harmonizes the conversational engagements of the situation by making them more symmetrical by recognizing and aligning with the implicated reorganizing of shared situated priorities of the moment (cf. Stivers 2008; Tiilikainen and Arminen 2017). As people generally conduct themselves by principles of solidarity in interaction (Pomerantz and Heritage 2012), maintaining symmetry between levels of engagement follows the norm of aligning with another's projected line (Goffman 1955, p. 5) unless there is a "'*visibly-rational-and-reportable-for-all-practical-purposes*,' i.e., '*accountable*'" reason not to (Garfinkel 1967, p. vii). Clo's storytelling might be seen to have faltered when she did not orient to the storytelling as the main involvement of the moment, while Deb and Liz were clearly doing so. However, Liz's TableDown (TD)–HandFace (HF) move shifts the shared reality towards a situation where a face-to-face framework, and

therefore also the storytelling taking place in it, is not necessarily the participants' main involvement. This harmonizes the engagements in the situation.

3.3.5. Possibilities for Retracting Smartphone Engagement during Storytelling

Due to holding her phone in the same general direction as her interlocutors, both Deb's disengagement by turning away and Liz's continued engagement until segment 4 were observable to Clo in her peripheral field of vision. Clo's turn having started with a continuation (*"[>exactly<] and")* overlapping Liz's turn and Deb's disengagement at segment 3 makes Liz the expected primary recipient to Clo's story. When Liz then relinquishes her smartphone engagement by torquing her head at segment 4, after a fleeting glance at a table-staring Deb, she continues to torque her head towards Liz. Ironically, she now finds Liz already engaging with her smartphone, as Liz has just started to move her body in order to begin the TableDown (TD)–HandFace (HF) move exactly at the moment Clo began to disengage from her smartphone.

Liz's smartphone-engaging TableDown (TD)–HandFace (HF) move utilized the opportunity of lessened conversational obligation and an emerging shift in the shared situated priorities. Prioritizing an individual smartphone project over the shared project of the face-to-face interaction (cf. Tiilikainen and Arminen 2017) had become normatively a more viable option by Clo's continued smartphone engagement and its accompanied non-progressing storytelling. However, Clo has now disengaged with her phone and is suddenly progressing with the storytelling and is directing the telling directly to Liz. However, if Liz were to end her just-begun smartphone activity immediately after Clo's lack of progressivity ended, it would inevitably suggest causality (cf. Hume 1739) between the two. Having just explained the engagement with her phone by checking something on the device, it would be contradictory to the line of action established for her (cf. Goffman 1955, p. 213) to immediately retract engaging with the phone. The just-produced explanation would become questionable and the real reason for Liz's smartphone engagement might very much look like it was connected to the way Clo was performing her storytelling. Liz's continued smartphone engagement, even after Clo's conversational engagement, therefore in a way retroactively protects Clo's "face" (Goffman 1955) in relation to the lack of progressivity in her storytelling, and also protects the consistency of Liz's own account-accompanied smartphone engagement.

3.3.6. Two Perspectives

Two perspectives to Excerpt 3 have emerged. Clo's smartphone engagement and lack of progressivity in storytelling might be considered a shortcoming in conversation. Her story was prefaced and initiated, but the story recipients were left hanging. One might think that engaging with her smartphone caused her to underperform as a storyteller. Previous research on multitasking and the psychological refractory period (Wu and Liu 2008) might support this view. A cognitive bottleneck might be posited to have made the conversation spiral towards diminishing intersubjectivity and a degradation in conversing due to distributed attention.

However, the conversationalists themselves did not orient to the goings-on of the episode as something explicitly problematic. This points towards another possibility: The participants reflexively enacted, in concert, a shift in the shared priorities of the situation. The relative ranking of face-to-face interaction was lowered and individual smartphone use moved up (cf. Tiilikainen and Arminen 2017). This nudges the conversational state towards a continuing state of incipient talk (Berger et al. 2016; Goodwin 1981, p. 23; Schegloff and Sacks 1973, pp. 324–25) where the primary involvements of participants may be individual activities, with face-to-face interaction being subordinate to them. Furthermore, even if a cognitive bottleneck (Wu and Liu 2008) were hypothesized to be impacting Clo's lack of progressivity in storytelling at segment 3, the unfolding of the events could still be seen as a co-operative construction of an incremental shift in the conversational state (cf. Ergul

2016; Goffman 1963, pp. 58–59). Until segment 3, participants' orientations structured the "working consensus" (Goffman 1963, p. 96) of the hierarchy of the involvements as:

Main involvement: Face-to-face interaction serving collective projects;
Side involvement: Face-to-screen interaction serving private individual projects.

When Clo prioritized her private face-to-screen interaction over shared face-to-face interaction, it implied a suggested shift in this order. Liz's smartphone engagement took up this suggestion. However contradictory these perspectives seem prima vista, it is also possible that the reality lies in between and in both. Meaning should not be ascribed to interactive phenomena without evidence of the interactants themselves orienting to them accordingly, but it also should not be assumed that every interactive event must achieve a completely unambiguous shared meaning between the participants in order to be sequentially relevant.

4. Discussion

The article introduced a new system for transcribing and analyzing smartphone use in face-to-face social situations. Adjusting one's smartphone engagement with a smartphone move may alter one's interactive footing in conversation. Smartphone moves or the lack of them may also participate in a co-operative move toward a change in conversational state (cf. Henriksen et al. 2020). Smartphone moves do not occur randomly. They have recognizable implications for conversation. They adjust the degree of engagements between face-to-face and face-to-screen interactions. Simply talking about "smartphone use," without paying attention to the plurality and nuances of smartphone engagement, would lead to important aspects of common contemporary interactions being missed. The affordances, and consequently the social practices constructed with them, differ in smartphones and traditional mobile phones (Mantere et al. 2021). This must be considered when analyzing smartphone use in social situations. Engaging with a smartphone is engaging in an activity whose meaning is typically hidden from others. This makes accounting for the activity more relevant than is the case with traditional mobile phones.

The article proposed improvements in transcription. Replacing lines with multimodal segments may have benefits. Numbered lines emerged early in EMCA's history, when the field was still heavily focused on speech and used mainly phone calls as data. Traditional transcripts served as written representations of speech. Organizing them into "lines", as is typical with text, made sense. Face-to-face interaction is a multimodal enterprise. Numbered lines of speech are less optimal when needed to be supplemented with representations of the visual aspects of the situation like gaze, posture, and other embodied conduct. Organizing transcripts into segments that gather each interlocutors' relevant verbal and corporal activity into one numbered temporal chunk, a multimodal segment, is more suitable with multimodal data than the use of numbered lines. It eliminates some redundancy that takes place in referring to talk and occasionally adds heuristic value (when referring to talk by two individuals at the same segment number, the reader immediately knows their turns to be at least partly in overlap). Transcription for smartphone moves, like for any embodied conduct, is better organized in multimodal segments than lines.

4.1. Generalizability

The 13 smartphone positions classified here manifest different levels of engagement, but to what degree is the embodiment of engagement in smartphone positions objective and generalizable? Conceptualizing engagement as an allocation of the availability of interactive resources to an interactive involvement offers some insight. A TableDown (TD) position has fewer interactive resources dedicated to being available for an involvement with one's smartphone than a BothHands (BH) position does. It is therefore considered a position of lesser engagement with the smartphone. This principle was clearly seen in the data as a whole, as well as in the extracts analyzed in this article. The conceptualization does not, however, reveal the kind of adjustments of engagement each of the possible 156 smartphone moves, resulting from the 13 smartphone positions, would represent in

each of their naturally occurring contexts. These types of questions on generalizability are, however, common to the field of CA in general.

4.2. Smartphone Moves and Schegloff's Body Torque

This study yields a new possible definition for the infamously ambiguous concept of the continuing state of incipient talk (Berger et al. 2016; Schegloff and Sacks 1973, pp. 324–25). The continuing state of incipient talk could be categorized as a social situation where face-to-face talk is collectively produced as secondary to some other involvement and may be oriented as a passing subordinate engagement (cf. Berger et al. 2016; Didomenico and Boase 2013). This subordination may typically be marked by embodied manifestations of engagement, like body torque or smartphone positions.

Body torque manifests engagement in multiple concurrent involvements. Smartphone engagement may be one of the involvements towards which one's body is torqued. However, smartphones are typically engaged with by positioning the smartphone to align with the position the body already occupies. This follows Schegloff's principle of minimizing unnecessary torque, and also makes smartphone engagement in social situations to corporally manifest more like, for instance, cigarette smoking (Goodwin 1981, pp. 104–6) than cross-talk (cf. Ictech 2019).

Schegloff (1998) referred to Fox's (1993) data, where Grace (Figure 3, on the right) engaged in interaction with the research assistant Marjorie, who was standing on the doorway (out of the picture). Grace's shoulders and hands remained positioned towards the assignment soon to begin with the notebook on the table in front of her. It was unfeasible for Grace to change Marjorie's position in the doorway or of the table in front of her. Her body torque manifested this physical reality.

Smartphone engagement is different. Smartphone moves can typically be easily enacted without body torque, though a slight head torque is common in some, and a slight shoulder torque in other positions. The adjustment of engagement through smartphone use would not be revealed by mere analysis of body torque. The same is true with gazing at the smartphone and manipulating the smartphone screen. They are part of engaging with the device but are not enough without the inclusion of smartphone positions. Smartphones require their own system of representing engagement. Smartphone moves may reveal, akin to body torque, the projected duration and priority of smartphone engagement in relation to face-to-face involvement.

People have countless ways to continue and extend sequences basically indefinitely. They must therefore also have ways to arrive to mutual understanding on when sequences end. Schegloff and Sacks (1973) described the use of vocal conduct in the production of sequences ending a phone call, Schegloff (1998) described the use of body torque in regulating sequence length, and Rossano (2012) described how gaze shifts away from a conversational partner to contribute to constructing the end of an activity sequence in face-to-face conversation. Smartphone moves describe a new and, in today's world, virtually ubiquitous method for enacting endings for activities. However, like other resources of interaction, smartphone moves are not significant in and of themselves, but through the recognizable events in interaction they participate in constituting them (cf. Schegloff 2010). Although smartphone moves may adjust engagement in face-to-face talk, it is not the moves themselves that connect or disconnect people (cf. Steiner-Adair and Barker 2014; cf. Turkle 2015). The moves function in their local contexts, participating in the construction of specific recognizable series of events. Through a smartphone-engaging TableUp (TU)–HandFace (HF) move the aims of face-to-face conversation may also be advanced (Raclaw et al. 2016). The shared project of the face-to-face interaction may, for instance, be contributed to by looking up relevant information online. However, due to bystander inaccessibility (Mantere et al. 2021), it can be hard for bystanders to know what is being done with the phone. Because the context of the action itself is determined and renewed by the action that takes place in the situation (Clayman 2015; Garfinkel 1967; Heritage 1984), smartphone moves also get their meaning partly from what is being done

with the phone. Engaging in interaction with a non-present other, looking up information to benefit the ongoing face-to-face conversation, or engaging in a private smartphone project are far from interchangeable activities (Mantere et al. 2021).

Figure 3. An interlocutor in body torque in Fox (1993), referred to by Schegloff (1998).

4.3. Limitations of the Study

The format of the data posed some limitations. Occasionally the eyes of some participants were out of frame. Spherical cameras like GoPro Fusion could be used in the future. The study is also partly limited in generalizability. The type of encounter may impact how smartphone engagement emerges and is interpreted by other participants (cf. Humphreys and Hardeman 2021). For instance, people in cafés, work meetings, and at home may behave differently in relation to smartphones. A collection-based study should be done to extract the most general aspects of different smartphone moves across varied contexts.

4.4. Further Research

Some smartphones' sizes make them difficult to be used with one hand. The impact of this on smartphone moves, like the use of smartphone wallets, should be studied. Future research has much to cover in addressing the role of smartphone moves in constructing social realities. For instance, none of the participants in this study accounted for checking their phone for the time or notifications. Further research might also try to find generalities in how smartphone moves function in turn-initial, mid-turn, and turn-final positions in different sequences. Smartphone moves at activity borders should also be studied more widely, similar to Rossano's (2012) study on gaze behavior. The spread of emerging technology like augmented reality goggles will soon introduce even more unknowns. Smartphones and future forms of ICT, though forming interactive relationships with their users, also work as technological extension of the user's agency. Smartphones might be the most important feature of the human cyborg today (cf. Gray et al. 2020). An object described both as an extension of agency and an agent itself is surely worth studying more.

5. Conclusions

The article introduced a vocabulary and classification of 13 forms of embodied smartphone involvement based on the smartphone's location (pocket, table, hands, etc.), its relation to its user's hands, and the screen direction in relation to its user's head or the surface the device is resting on. Smartphones can be engaged and disengaged with in different degrees through moves from one smartphone position to another. When individual smartphone engagement is not connected to advancement of the face-to-face social project, engaging smartphone moves are seen as disengagement from face-to-face interaction, and vice versa. Engaging and disengaging moves may be used to end conversational activities and relinquish speakership, to work as a turn-holding device to hold onto speakership, and to suggest and enact changes in conversational state. Multiple other interactive functions of smartphone moves should be explored by future research, both in general and more context-specific settings.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and ethical review and approval were waived for this study because according to the standards of the Ethics Committee of the Tampere Region and the Finnish National Board on Research Integrity for Human Sciences, ethical review is not obligatory if participation is based on consent and if the research does not involve strong stimuli or cause harm to participants. All the participants in our study were voluntary and gave their consent for participation. The study design did not include strong stimuli.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Anonymized transcripts of the data are available upon reasonable request.

Conflicts of Interest: The author declares no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Appendix A

Transcription of vocal conduct based on Jefferson (Jefferson 2004).

word	Vocal conduct transcribed in the original language
word	English translation of vocal conduct
wo::rd	Stretching of a word, more colons mean more stretch
[wo]rd	Overlapping talk
<word>	Slower pace than in surrounding talk
>word<	Faster pace than in surrounding talk
word	Emphasized talk, with the number of letters bolded relating to the strength of the emphasis
word	Quieter than surrounding talk
( )	Inaudible speech
(word)	Uncertain transcription of speech difficult to hear from the recording
wo-	Cut-off word
(.)	Silence less than 0.2 s
(2.3)	Duration of a silence
hh	Audible outbreath
.hh	Audible inbreath
=	Latched utterances
,	Continuing intonation, relatively steady final intonation
.	Turn-final intonation, lowering final intonation
?	Rising intonation at the end of a prosodic entity

The transcription of smartphone positions follows the system developed in this article.

TD-HF	Capitalized initials of smartphone positions in superscript among the transcribed vocal conduct mark the timing of smartphone moves. The smartphone is here moved from lying on the table screen downwards, i.e., the TableDown (TD) position, to being held with one hand with the screen pointing towards user's head, i.e., the HandFace (HF) position.
→	Marks the beginning of the movements necessary to begin a smartphone move.
TD-	Marks the beginning of a smartphone move when there is transcribed conduct between the move's beginning and end.
HF	Marks the end of a smartphone move.
CTD-	When transcription of a smartphone position has three letters instead of two, the move is done by someone other than the person talking on this line. The first letter indicates the person doing the smartphone move. Here Clo begins a smartphone move from the TD position during someone else's talk. When possible, smartphone moves are always transcribed among the talk of the person doing the move. In cases of overlapping speech, the moves are only transcribed among the talk of the person doing the smartphone move.
-CHF	Marks the end of a smartphone move when the speech transcribed on the line is not from the person doing the move. Here Clo finishes a smartphone move to the HandFace position during someone else's talk.

Transcription of body torque adapted from Goodwin's (Goodwin 1981) transcription of gaze.

☺ clo	The line transcribes the orientation of Clo's head.
„„„„	Moving corporal orientation towards its eventual direction
....	Moving corporal orientation away from its previous direction
ccccc	Corporal orientation directed at Clo
llllllll	Corporal orientation directed at Liz
dddd	Corporal orientation directed at Deb
sssss	Corporal orientation directed at one's smartphone

Transcription of other multimodal conduct partly adapted from Mondada (Mondada 2007).

⇓	Indicates the exact moment of the screen capture above it
deb:	The participant doing the action is identified in small characters.
+	The participant's actions are indicated by the same symbol on each line.
>>-	The action described began before the excerpt's start.

Appendix B

The sum of possible smartphone moves is calculated from the number of smartphone positions. Because having the position remain the same is not a move, each of the 13 smartphone positions may form moves with the 12 other positions, making the sum of possible smartphone moves:

$$13 \times 12 = 156 \tag{A1}$$

The sum of possible smartphone moves is also high when inverse moves are excluded from the calculation. In this case, the TableDown (TD)–HandFace (HF) and HandFace (HF)–TableDown (TD) moves, for instance, would not be calculated separately. The sum of possible pairs of smartphone positions is an arithmetic sequence from 1 to 12, with 1 as the common difference:

$$\sum_{n=1}^{12} n = 1 + 2 + \cdots + 12 = \frac{1 + 12}{2} \times 12 = 78 \tag{A2}$$

Schegloff's body torque classification has five embodied configurations (see Table 1), adding up to 20 possible moves between them:

$$5 \times 4 = 20 \tag{A3}$$

If inverse moves are excluded body torque classification, the sum is an arithmetic sequence:

$$\sum_{n=1}^{4} n = 1 + 2 + 3 + 4 = 10 \tag{A4}$$

Notes

1. It is clear from the context that by "conversation-like activity", Goffman (1971, p. 25) here meant a kind of human interaction not exactly constituting a conversation, but is similar to it. He did not mean interaction between a human and an object, which only shares some similarities with human interaction.
2. The segments here do not refer to linguistic segments, but rather numbered segments of transcribed multimodal conduct replacing the numbering of lines of transcription.
3. The photos are of the author's personal friend who offered to re-enact the smartphone positions found in the data for demonstrative use. For more smartphone positions appearing in the data per se, the reader is directed to a poster presented at the 17th International Pragmatics Conference in 2021 in Winterthur, Switzerland (Mantere 2021).
4. Other parameters for smartphone positions, like a state of a smartphone wallet, are occasionally relevant in the data. They were excluded from the standard classification due to not being ubiquitous like the three parameters chosen.

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