

Designing Sharing Economy Platforms through a ‘Solidarity HCI’ lens

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Despite sharing economy’s promise of a novel, inclusive and community building socio-techno-economic system, sharing economy has been indicted, among others for profiteering from previously private and occasionally non-monetized activities, for turning the activity of sharing into an individualistic and impersonal one, for reproducing stereotypes and creating precarious jobs. In the epicenter of such critiques are the ‘big’ and ‘limelight-ed’ platform-firms, like AirBnB and Uber and the digital infrastructures they employ. To the best of our knowledge, the majority of related research focuses on SE platforms of this ilk. In response, acknowledging that the problem is not the agency of the digital in the activity of sharing per se, but that the wrong people set the terms, design and benefit from this mediation, we find it timely to explore the existence of community-driven sharing economy initiatives and explore how they use the digital to support their sharing ends. As a result, in this paper we report from our engagement with a ride-sharing initiative, called ‘Share the ride ;)’ which operates within a Facebook group since 2009 and is the most popular ride-sharing ‘platform’ in Greece. Extrapolating from our findings and while adopting a ‘Solidarity HCI’ approach, a call to design for ‘human’ rather than market needs, we participate in the ‘sharing discourse’ by providing design implications for the development of sharing economy platforms which can favor community building, participation, self-organization and the nurturing of a generative sharing ideology. To this end, we suggest the development of malleable sharing economy platforms and of mechanisms which can support the development of relational trust(s) and enduring social relations. Finally, we underscore that in order to favor the establishment of such relations, those platforms should employ architectures which esteem pluralism and self-affirmation.

CCS Concepts: • **Human-centered computing** → *Collaborative and social computing systems and tools*.

Additional Key Words and Phrases: sharing economy, ride-sharing, solidarity HCI, malleability, relational trust, self-affirmation

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1 INTRODUCTION

Except those described as infinite resources (e.g. the air we breathe, the sun) which are shared among ‘humans’ and all other earthlings, sharing of finite resources has been described as an a priori condition for ‘humans’ coexistence, the foundation of community organization [4] and a routine activity of which values every child learns at an early stage of their life [75]. M. Felson and Joe L.Spaeth in 1978 [27] referred to the sharing of such resources by the term

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53 ‘collaborative consumption’ which they used to describe events during which people consume finite goods through
54 joint activities.

55 Y. Benkler describes two characteristics of goods and resources which determine their shareability [11]. They are
56 shareable if (i) lumpy: they are purchased as is -thus are indivisible- and they are more powerful than the need they were
57 obtained for (e.g. the power of computers that have processors and storage disks beyond what most users will require
58 [82] and if (ii) they possess medium granularity: are small enough for an individual to justify buying for their own use.
59 An example of such mid-grained goods which as also lumpy cannot be used to their full capacity are private cars that
60 are not driven 24 hours a day and of which seats are not used constantly. If goods/resources have those two attributes,
61 they can be considered underused, thus ‘shareable’. This circumstance, ‘shareability’, opens up new possibilities for
62 their management.
63
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65 Within Web 2.0 which has changed the ways people connect to each other and share information, those management
66 possibilities have been considerably enhanced. In this light, information exchange about the above-described as
67 ‘shareable’, brings us closer to what today is marked as the sharing economy (SE). In SE, digital systems, usually called
68 SE platforms (SEPs) or peer-to-peer exchange platforms/markets, are developed to mediate the exchange of all kinds of
69 resources. SEPs range from for-profit and transactional platforms which support markets like Airbnb and Uber within
70 which sharing coincides with renting and hiring, to non-transactional platforms like Couchsurfing, to less statutory
71 and informal, occasionally more self-organized SE schemes which operate on top of existing ICTs (e.g. on social media).
72 Due to this breadth of SEPs and because of the "semantic confusion" [10] around the term ‘sharing’, L. Richardson [72]
73 describes the SE as a "paradox" that encompasses both a capitalist, business as usual, economy and its alternatives; a
74 space for ‘constructing’ opportunity while ‘deconstructing’ the dominant capitalocentric practices.
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78 Researchers in HCI and elsewhere, have shown extended interest in the SE; inter alia in discussing what can be put
79 under the SE umbrella and what should not [32, 76], in offering policy proposals[50, 71], in exploring how the SE is
80 affecting architecture and urban planning [20], in discussing SE’s impact on mobility and transportation [12, 42, 85]
81 housing [8, 44, 47], labor [21, 75, 77], social relations [22, 32, 39, 66]. Despite this gamut of SE related works, to the best
82 of our knowledge, the majority of research centres on the ‘big’ and ‘limelight-ed’ SEPs which with very few exceptions
83 have been highly criticized as ‘sharewashing’, extractive and exploitative neoliberal projects [18, 75, 76] -embodied
84 in digital designs- which create precarious jobs [75, 78] reproduce inequalities and discrimination [17, 26, 86], spread
85 market relations to our lives, monitor and profiteer from previously private and occasionally non-monetized activities
86 [75].
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89 While acknowledging that similarly to all types of markets and other infrastructures, SEPs do not arise as natural
90 phenomena but are deliberately designed "social product[s]" [24, 73] materialized in certain technologies, we believe
91 that there is a lack of understanding on how the digital is being used by SE initiatives to support the sharing of resources
92 (outside the framework of SE as described above) as a community-driven, caring-based, [52, 53], participatory and more
93 democratic [75] activity. In this regard, responding to P. Allen’s design-centred call for further research on SE that
94 explore "what difference does it make if mediation takes one form vs. another?" [1], in this paper we report on our
95 work with a community-driven ride-sharing initiative which operates within a Facebook (FB) group called “Share the
96 ride :)” (StR). StR, despite the fact that -similarly to all FB groups- has not been designed to mediate sharing of physical
97 resources per se, has evolved into a ride-sharing ‘platform’ that is designed and managed as such, internally by its
98 members.
99
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101 To explore how the activity of ride-sharing is performed within StR’s sociotechnical SE environment, we took as
102 a starting point A.Sundarajan’s [82] understanding of SEPs, as a set of technologies and practices (the majority of
103

105 which are enforced by these technologies) that enable the sharing of ‘latent’ resources through ‘facilitating’ their search
106 and discovery, organizing the logistics and the creation of trust. In specific, we focused on how those phases manifest
107 among StR members and which sociotechnical designs support them. Accordingly, we have been interested to explore
108 how StR emerged in FB and how it has evolved into a community-driven SE ‘platform’.
109

110 In order to explore the abovementioned, we undertook a series of semi-structured interviews from members of StR
111 which hold different roles in the group.
112

113 We found (as we present in our findings and discussion sections), that StR members have been harnessing FB’s
114 flexible (in the context of ride-sharing) architecture to develop sociotechnical processes in order to better support
115 ride-sharing as a service and to better support the group’s inclusive and participatory character. Moreover, we found that
116 StR members build relations and trust(s) in plural ways due to the negotiations that manifest both among individuals as
117 riders when setting up the logistics of a ride-share and among StR users as members of a broader community.
118

119 Departing from those insights which come in contrast to the relatively fixed, impersonal and non-participatory
120 ways that SE is performed in mainstream SEPs [52, 75, 76], in our discussion section, while adopting a ‘Solidarity
121 HCI’ approach -a call to design for ‘human’ rather than market needs [87], we contribute design implications for the
122 development of SEPs as infrastructures which can favor the incubation of a generative sharing culture and which can
123 become the basis for the emergence of multiple SE schemes and initiatives. Initiatives that can be more self-organized
124 as to what can be shared, to the digital designs used to support the sharing activity, to building trust(s) and identities.
125 To this end, we propose malleability as a design quality, the development of tools and processes that can favor relational
126 trust evidenced in repeated interactions among sharers and the employment of designs that can foster pluralism and
127 self-affirmation.
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131 2 RELATED WORK

132 The 21st century SE, broadly refers to an economy based on the use of digital platforms via which users can exchange
133 all kinds of resources and assets that are considered to be idle. Such can be one’s tools (e.g. a driller), a few empty seats
134 of one’s vehicle and also one’s spare time which can be made available via those platforms; it can be offered without a
135 monetary compensation to help a stranger, say, to learn how to play the violin or it can be sold as labour while driving
136 around strangers in a city with a private car.
137

138 Thus, under the "big tent" of SE [76] one may find various technological systems -with varying affordances- which
139 underpin different SE business models. As those different SE models are embodied by different value-driven technologies,
140 their architectures play a central role [51]. For example, Airbnb is supported by a digital system that serves the platform’s
141 for-profit needs and supports the commercialization of sharing while Couchsurfing -for-profit but non-transactional-
142 employs another system that also differs from the one used by the platform Freecycle.org.
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145 Except for a digital system that holds the potential to create a new decentralized market [82] and the ‘idling’ capacity
146 of assets and resources, according to R. Botsman and R. Rogers [14] a SEP in order to function needs a critical mass
147 of users who despite being strangers can trust each other. Extending this, Lampinen and Brown [51] use the term
148 ‘thickness’ to note that SEPs do not only need a critical mass of participants but also the ‘right’ kind of participants
149 who can find among each other suitable exchange partners.
150

151 Along critical mass and ‘thickness’, search and discovery, trusting each other and organizing the logistics are the
152 three core and interrelated phases which A.Sundarajan identifies as central to a SEP’s operation [82]. Search and
153 discovery refers to the process a SEP user has to go through in order to find the available/‘shareable’ resources that they
154 are interested in (e.g. a room, a tool, a seat in a vehicle). The majority of SEPs offer their users the ability to ‘upload’
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157 information about the resources they want to share; either resources they own or want to have access to. Trusting each
158 other refers to the phase during which the parties (the one that offers and the one in need) have to trust each other
159 in order to agree on participating in a sharing activity. Within this phase, reviewing and rating systems are usually
160 employed. Those systems can work as traces of the past activity of a user within a SEP and are employed in order to
161 mitigate possible risks within a strangers' sharing. As a last phase, when, say, two peers decide that they can 'trust'
162 each other and have agreed on a sharing activity, they have to organize the logistics of this activity. For example, if
163 two parties have agreed to participate in a ride-share they also have to agree on things like a meetup location, the
164 possible cost of the trip, the route etc. In most SEPs when a 'sharing' activity has occurred, the participating parties
165 have the option to review each other on the SEP. If so, those reviews will become available to future sharers. Further
166 to the above-mentioned, how those phases are digitally supported [48] (e.g. what users can 'upload' as information
167 about themselves and their shareable assets and in which form, what mechanisms are used to build trust(s), via which
168 mechanisms can users communicate among each other and the platform managers) affects how the sharing activity is
169 mediated and performed.
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174 2.1 HCI and the SE

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176 2.1.1 *SE's lost promise.* One of the most publicized hallmarks of the SE has been its capacity to support community
177 building, to favor inclusion and access -as ownership of assets is reconsidered [13] - and to contribute towards the
178 mitigation of the nowadays' environmental crisis [14, 76, 82]. However, this promising narrative has been proven
179 problematic, as studies have shown that major SE companies have failed to enact social tying [28], while also widespread
180 access to occasionally cheaper services can increase mobility and accordingly emissions [76]. For example, a large-scale
181 measurement study [47] found that most listings on Airbnb among many countries are entire homes and depicts Airbnb
182 as a rental marketplace rather than a spare-room sharing platform that can foster community building. In the same
183 vein, a 2017 EU report on the SE concludes that "sharing rarely fulfills the promise of generating social capital" and that
184 "sharing in Europe is, above all, a business" [2].
185
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187 Being critical towards SE [79, 82], suggest that within this modality, the lines between the personal and the professional
188 are blurring and new forms of precarious labour are emerging. Cockayne [18] while focusing on those new forms
189 of labour mediated by for-profit and transactional SEPs within which the 'shared' is one's labour (e.g. Uber, Lyft,
190 TaskRabbit) underscores that those, of neoliberal ilk platforms promote labour as something that is 'shared', not sold
191 and purchased. Thus, labour becomes "metonymic" [18] with cheap, always-available information. T. Sholz describes
192 big for-profit SE as an on-demand service economy that "is spreading market relations deeper into our lives", that
193 monetizes -through secondary markets- previously unmonetized interactions (e.g. hosting a friend, giving a ride to
194 someone) from which it also "sucks value" and which by virtue of the systems in use, keeps track (in the form of digital
195 data) of those previously private interactions[75].
196
197

198 According to P. Romer because of this type of a 'sharewashing' economy[45], in which sharing is exploited due to its
199 affectionality and positive symbolic meaning, we may be losing a good verb [76]. However, J.Schor in a less annihilating
200 tone, remarks the potential for truly decentralized forms of "genuine sharing" and cooperation stating the need for
201 democratizing the ownership and governance of those platforms [76, 77].
202
203

204 2.1.2 *'Reclaiming' the SE.* A.Lambinen and B.Brown [51] underscore the centrality of the digital in today's peer-to-peer
205 exchanging platforms and thus they call HCI researchers to have an active role in designing and intervening when such
206 platforms are not effective or do not operate on a fair basis.
207
208

209 M. Heidaripour and L. Forlano [56] based on accounts which indicate that SEPs are oftentimes contributing to the
210 reproduction of structural inequalities with regards to gender, race, class[9, 26, 74] argue that Feminist Science and
211 Technology theories, practices and critics can contribute towards the development of a more inclusive and equity-based
212 SE.
213

214 Additionally, G.Avrar et al [5], but for their strong criticism against mainstream SE’s impersonal and exploitative
215 nature, suggest HCI researchers who are interested in reshaping SE “to think beyond the current dominant narratives
216 of sharing and move towards care as a notion and a social practice”.
217

218 Care is also central to A. Light’s accounts [52, 53] which accordingly underscore that big for-profit SE networks,
219 as highly technologized, occasionally sideline the social aspect of sharing by removing “the personal element out of
220 negotiations” and by limiting physical interaction among sharers [52]. In response, departing from their neighbourhood-
221 scaled research, A. Light argues in favour of an ‘infrastructuring’ of local SE [53]; a situated social and technical process
222 that meshes the digital with the physical and holds the potential to promote a generative culture of cooperation and
223 sharing as a caring-based practice. Overall, A. Light argues that within digitally mediated sharing, technology should
224 be used to help, not to replace interpersonal face-to-face activities and negotiating trust with others[52].
225

226 In a similar vein, Vlachokyriakos et al. [87] based on their research within solidarity movements discuss the
227 implications of transferring the observed solidarity practices and values in HCI. Their research findings, suggest that
228 solidarity movements are situated communities that build economies within which self-organization, agonism, pluralism,
229 collaboration and sharing practices are central. In accordance with A. Light’s accounts that describe a generative culture
230 of cooperation within caring-based SE, a fundamental part of solidarity movements and economies is their “pedagogic
231 and political awakening character” [87].
232
233

234 Solidarity is accordingly central to T.Scholz’s concept of Platform Cooperativism [75] who recognizes that the
235 problem is not the agency of the digital in the activity of sharing per se but that the wrong people design, set the terms
236 and benefit from this mediation. In this regard, the concept of Platform Cooperativism offers design proposals that aim
237 at changing ownership of SEPs, establishing democratic governance and revitalizing solidarity. Among others, within
238 Platform Cooperativism, Scholz proposes a collective type of ownership of SEPs, argues in favour of transparent data
239 (e.g. how user’s data are treated), underscores that SEPs’ users should be able to directly communicate among each
240 other and be involved in the design process of the platform; one that rejects constant surveillance which currently
241 occurs via data storing mechanisms and review/rating systems.
242
243

244 Scholz, alike [52, 76, 87, 88], conceives of SEPs as socio-technical infrastructures of which architectures are informed
245 by political decisions and calls the designers to understand the sociology and anthropology of their creations and the
246 possible ramifications that those designs might have.
247

248 While embracing that call, as HCI researchers who acknowledge SE’s lost promise and who stand with those who
249 want to “reclaim” the SE, in this paper we built upon those accounts and we participate in the ‘sharing discourse’
250 by presenting our findings from engaging with a community-driven ride-sharing scheme and by providing design
251 implications for the development of SEPs through a ‘Solidarity HCI’ lens.
252

253 **2.2 Ride-sharing**

254 Ride-sharing, also known as carpooling includes hitchhiking and refers to the joint travel of two or more people in a
255 single vehicle [34]. Ride-sharing is considered a practice “as old as the car itself” [84] which proliferated during World
256 War II and the 1970’s energy crisis [29] and during the Civil Rights Movement of the 1950s in the racially segregated
257 communities of USA’s south [31]. It can also be found in the form of the ‘employer vanpool programs’ [65] and as
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‘slugging’ in the USA [16]. Ride-sharing has historically been a non-profit driven practice, performed in a self-regulated fashion which refers to the sharing of the space in a vehicle and usually to the equal (per occupant) split-up of the total involved costs (i.e. fuel, tolls, parking costs) [11].

Nowadays, ride-sharing is one of the basic activities that is mediated by digital platforms. Agile or real-time ride-sharing is supported by platforms like Uber and Lyft, while long-distance ride-sharing, by platforms like BlaBlaCar. Ride-sharing schemes, except when supported by bespoke systems (e.g. those used by Uber, Lyft, BlaBlaCar), they oftentimes operate on top of various ICTs -from phone calls to social media networks; tools which are not designed to support ride-sharing per se [83]. For example, Telegram service, due to the fact that its users do not need to link their accounts to a phone number, has been recently appropriated for ‘safe and emergency carpooling’ during the Hong Kong protests [36]. Similarly, on FB, one can find dozens of groups used to mediate ride-sharing, both long-distance and real-time. Among others, the FB group Arcade City ¹ that operates in Austin (USA), the FB group Tyson’s Lifts4Friends ² which operates in Canberra (Australia), and a similar FB group used in Bournemouth, Dorset (UK) [58]. Those three groups use FB to mediate real-time ride-sharing and bear a resemblance to Uber or Lyft as its members participate in on-demand short distance taxi-like services. Accordingly, there also exist groups which harness FB networking possibilities to mediate long-distance ride-sharing like Skjutsgruppen ³ that operates in Sweden and StR ⁴; the group we engaged with during this research.

2.2.1 Context: Ride-sharing in Greece. According to a 2017 report on consumer issues in peer-to-peer platform markets [40], in Greece two digital platforms ⁵ used to mediate ride-sharing were identified; supported by the then Ministry of Environment, Energy and Climate Change through its “Sustainable Mobility Aims”[63]. None of these two platforms are functional at this time and other ride-sharing platforms that have been used in the recent past are also not accessible ⁶. Moreover, BlaBlaCar or similar ride-sharing firms do not operate in Greece and Uber suspended its services in April of 2018 after the ratification of the legislation 4093/2012 ⁷.

We also find it relevant to point out that since 2008 Greece has gone through a long socioeconomic crisis. This crisis affected the transportation and mobility sector accordingly [59]. The use of private vehicles declined [60, 61, 81] while the public transport’s funding, maintenance and quality of services were seriously affected [67] despite a recorded shift to the use of public transportation and of other more economic, environmentally friendly and socially alternative modes [35]. During those years and as a response to the austerity measures, new solidarity initiatives have been formed (e.g. time banks, no-middlemen goods distribution networks, soup kitchens, work cooperatives, social clinics and pharmacies, solidarity schools, alternative currencies, self-managed factories and artist collectives) [3, 70, 87]. Similarly, transport-related mobilisations and movements also emerged. For example, an informal ticket sharing movement among the users of public means of transportation, and ride-sharing initiatives like StR which was created in 2009. StR is to this moment, the most popular ride-sharing scheme in Greece ⁸. We do not argue that this context per se incited

¹Arcade City Austin Fb group can be accessed in this link: <https://www.facebook.com/groups/ArcadeCityAustin/>

²Tyson’s Lifts4Friends Fb group can be accessed in this link: <https://www.facebook.com/groups/1438415459765446/>

³Skjutsgruppen FB group can be accessed in this link: https://www.facebook.com/skjutsgruppen/?tn-str=k*F

⁴StR FB group is accessible in this link: <https://www.facebook.com/groups/sharetheride/>

⁵carpooling.gr and hopinside.com

⁶i.e. pamemazi.gr, carshare.gr

⁷According to 4093/2012 a private car and a driver can be leased for a duration not less than 6 hours and the two parties (driver and passengers) have to sign a contract in which the terms of the agreement are explicitly demonstrated

⁸Except for StR there also exist other FB ride-sharing groups which are used to cover the transportation needs of people travelling in geographically specific areas e.g. Share the ride Patras, Share the ride Crete, Volos Carpooling etc

313 StR to appear, however we find it relevant to place, present and accordingly research StR within the above described
314 genealogy.
315

316 2.2.2 *Share the ride ;)* (StR). StR is a FB group which was created in October 2009 in order to facilitate long-distance
317 ride-sharing mostly in mainland Greece. StR is the most popular ride-sharing scheme in Greece and has approximately
318 39.500 members (by March 2020). From August 2018 until August 2019, members posted 17.143 times and commented
319 30.988 with around 100.000 reactions (likes etc)⁹.
320

321 StR originated due to its creator’s personal need to share rides. According to them

322 *[...] I have been trying through my own FB profile to find friends from FB to share a route, a specific route I’*
323 *ve been doing a lot back in 2009. Then I thought, why shouldn’t I expand somehow this attempt by making*
324 *a group where friends can add their friends and possibly be able to find co-riders. [...] this is how StR was*
325 *created. Bit by bit with friends and friends of friends [...] there was no advertising or anything similar. Only*
326 *via world of mouth. I named the group Share the Ride ;), as carpooling is not a popular term among Greeks.*
327 *Then I also decided to put this emoticon, the winking one, to make it more cute and maybe less emphatic¹⁰*
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331 Since its very beginning in 2009 and until 2015 the group had only one admin, its creator. One more admin was later
332 added in 2015 who was a personal friend of the creator. This second admin was added while StR’s creator *[...] wanted*
333 *to clock out from FB for a while, so someone should keep the group alive*.
334

335 Since 2019, the admin team is growing bigger and more StR members have been added due to the upsurge in members
336 and the increased needs for the group’s daily operation.

337 StR was initially created as an open group (non-members could access the group and the circulating content) but in
338 July 2019, the admin team made it a closed one; only members can see the shared content.

339 The group is described as one for people willing to co-travel by sharing a vehicle and the related expenses. The rules
340 (visible on the group’s about page) are: “Kindness”; “No hate speech/bullying”; “No promotions or spam”; “Diligence
341 (when setting up a ride)”; “Relevance of the posts”; “Uniformity of the posts: Accepted would only be the posts that use
342 the #hashtags system.”
343

344 By this last rule that was introduced by the admin team in Spring 2019, StR members when doing a ride-related post
345 are asked to use either “#looking-for” or “#offering” depending on their status and hashtag (#) the destinations they are
346 starting, heading to, intent to stop in order to leave or pick co-riders and to accordingly hashtag (#) the date they plan
347 to travel. The rest of the post can have the format (i.e text, photo, video) and the content that the person doing the post
348 decides.
349

350 A typical post offering a ride-share on StR looks like the following

351 *#offering #Thessaloniki #Larissa #Farsala #Friday11102019 afternoon-ish. 1-2 seats available depending on*
352 *the amount of luggage (FB post made by Maria Theokopoulou, 22/09/2019)¹¹*
353

354 Via this system, StR members are prompted to utilize the search button to ‘filter’ their search each time they are
355 looking for co-riders.
356

357 The admin team has also proposed the use of the hashtags system for ‘reviewing’ members, however as of the time
358 of writing, this method has only been used by very few members of the group.
359
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361 ⁹Those figures were provided by the admin team of the group, and were collected via the ‘group insights’ FB tool

362 ¹⁰Those quotes derive from the interview we took during this research from the creator of the group to who we refer to as P3 in our Findings section

363 ¹¹The names of the cities/towns and the name of the person that did the post are aliases
364

3 METHODOLOGY

The lead author of this paper has a longitudinal affiliation with StR prior to the undertaking of research within it. They have been a member of StR since 2015 and have participated (by December 2020) in more than 20 rides organized via the group, both as a driver and a passenger. As all StR members are FB users, the lead author participates in the group with their FB identity which in their case is a pseudonym.

The first author's previous experience with the group, played a significant role in our motivation to work with StR (as opposed to other similar groups), in the formation of an interview guide which was used to perform semi-structured interviewees and in the analysis of the collected data.

Our method of engaging with the group and data collection entailed the following stages:

(i) In early 2019, the lead author made a post on the group's wall in order to publicly communicate to StR members their research intentions. This post was made via the first author's FB profile, while also citing the 'real' (rather than the FB pseudonym) name of the researcher. This post raised 395 reactions (either thumbs up or hearts) and 122 comments, the majority of which by StR members expressing their willingness to contribute to this research.

(ii) Few days later, the first author, via another FB post, shared on the group's wall an anonymous questionnaire for members to complete. This questionnaire was used in order to collect socio-demographic data (e.g. age, gender, location, occupation, tenure in StR, affiliation with the group), gain insights from StR members about the group's use and operation and eventually recruit members for further data collection via interviews. 172 StR members completed the questionnaire out of which 42 stated their availability to be interviewed. From them, 35 participants provided adequate contact information while the rest either provided wrong contact details or no details at all.

These 35 comprised of: 10 members-passengers; 11 members-drivers; 3 members that use StR as both passengers and drivers; 11 members of StR who have not been in a ride yet.

As in the questionnaire there was not an option for participants to indicate their identity as members of the admin team nor (due to the participants anonymity) could we have found out if any of the admin team's members have filled in this questionnaire, we also contacted in person (via FB) all admin team members at that time; their FB profiles are displayed in the about page of the group. From them, four persons agreed to participate in our research.

iii) We then started taking semi-structured interviews. Conducting semi-structured interviews was chosen as a method of collecting data in order to support open-ended and reciprocal discussions between the interviewer and an heterogeneous sample of participants [46].

In relation to the order in which the interviews would be held, we chose to mix people with different affiliations and roles in the group (i.e. members of the admin team, drivers, non-drivers, members that have not been in a ride yet) in order to obtain a diverse perspective of the group's operation early on in the interviewing process.

After we have interviewed 3 drivers, 3 passengers, 2 members of the admin team and 2 members who have not yet been in a ride organized via StR we decided to stop collecting more data as we reached saturation (i.e. we kept hearing similar answers and comments) and as we have already gained insights into the sociotechnical processes that manifest within StR which were not evident to us at the beginning of this work and which within our research framework and aims could contribute to interesting implications for design to CSCW and SE research in general.

For the semi-structured interviews we created an interview guide that was used to support and direct conversations with our participants towards the different activities and processes that manifest within StR which we have been interested in exploring. The interview guide was also designed as a participant-oriented one, as we engaged with an heterogeneous sample of StR members which have different roles and experiences in the group.

As one of our aims was to explore how different aspects of ride-sharing in particular are performed via StR, part of the guide has been informed by A. Sundarajan understanding of SE [82] (see Related Work). As such, during the interviews we posed questions and attempted to initiate conversations that focused on how StR members look for and post rides, on how StR members build trust, on how they organize the logistics of ride-sharing and how (if) offering reviews works.

In addition to the SE phases listed by [82], the works and accounts presented in our Related Work section [i.e. Solidarity HCI [87], Sharing Cultures [52, 53], Platform Cooperativism [75] also informed the interview guide we created and used. In particular, extrapolating from those accounts we attempted during the interviews to brew up conversations about the activity of sharing in general -beyond ride-sharing as such, the group’s sharing norms, the design and management procedures of the group, the future of StR and the role of other institutions (e.g. FB, state) in shaping it.

Our previous experience as active members of StR has been also central throughout the interviewing process and the data analysis accordingly. In particular, it informed the language we have used during the interviews; one contextualized within StR which has to an extent its own ‘vocabulary’ with which we have been well acquainted. It also affected our stance during the interviews as we occasionally pointed to some well known among StR members events or incidents or internal debates while discussing around different aspects of StR’s operation. Similarly, our experience as members and users of StR affected the ways we have interpreted the participants’ sayings while performing the Thematic Analysis of which results are presented in the following section.

4 FINDINGS

The interviews were held by the first author, either face to face or via VoIP as some of the interviewees were in different locations to the interviewer. Each interview was recorded and lasted between 40 and 70 minutes. In total, the collected data were 510 minutes in duration. They were analysed using Thematic Analysis; a method for identifying, analysing, and interpreting patterns of meaning (‘themes’) within qualitative data [15]. The collected data were initially coded, a process which led to the creation of the following themes:

‘Negotiating ride-sharing’, ‘Building trust(s)’, and ‘Appropriating FB to develop a community and a sharing culture’.

4.1 Negotiating ride-sharing

In StR, posts ‘looking-for’ or ‘offering’ a ride follow the hashtags system we presented in 2.2.2 via which a member indicates the place of departure, the final destination, the ride-share’s date or a period of dates when a trip is not date-specified. However, in most occasions, the ride-related posts do not mention the exact time of departure, the amount of monetary contribution, nor a specific route to be followed. Our findings indicate that all those details, as not predefined, are negotiated among members of StR who organize to participate in a ride-share. As our participants reported, those negotiations and agreements occur in a private manner either via personal FB messages or phone calls.

P1 (driver) described the process of setting up the logistics of a ride as a collective process and not a predefined one by those offering the ride and P10, also a driver, mentioned that when they organize a ride-share they usually create a group chat to e-meet each other and discuss the logistics of a ride. Another participant (P9) a non-smoker said that puts no rules in their car beforehand but

“[...] smoking in the vehicle depends on how this is negotiated and what the other persons in the vehicle might want”.

469 The same person, while discussing the costing of a ride mentioned that divides

470 *“[...] the cost by the number of riders. Except if the car is not full, say, there is only one other person in the car.*
471 *I will not ask them pay half of the cost. I ’ll propose, if they agree, to pay a bit more of what they would if the*
472 *car was full”.*
473

474 Another participant (P3) mentioned that in the group, occasionally there are some ride offers that do not ask for a
475 monetary contribution and commented
476

477 *“As no matter what, I’ ll do that route, then you are welcome to join. Just be my company. That’s really nice,*
478 *right? That’s the general idea, to help each other ”.*
479

480 P6, currently a passenger, described a ride they participated in which the driver did not ask for any monetary contribution
481 and while talking about the near future when they will have their own car and offer rides via StR commented
482

483 *“I wouldn’t have any problem if someone would tell me that I cannot contribute that much, I can give you less*
484 *money or nothing at all”.*

485 In the same vein, P2 mentioned that participates in StR to offer a ride not to

486 *“ [...] cut costs [...] sometimes I can take somebody that cannot ‘chip-in’[...] they can offer me a coffee, roll*
487 *some cigarettes or just be a good company”*
488

489 and also commented

491 *“I don’t want to insult someone [...] I do not predefine prices [...] I am not a taxi driver so I leave it on one’s*
492 *hands to decide how much to contribute”.*
493

494 Moreover, our findings indicate that StR members occasionally make posts via which they ask for the transfer of
495 pets or things. In particular, a member driver (P1) narrated a ride-share story, when they transferred a motorbike that
496 belongs to another StR member. Similarly, other participants referred to rides they have participated in where the driver
497 or another passenger were transferring someone else’s stuff or pets.
498

499 Finally, all participants similarly to P6 underscored that

500 *“Whichever monetary transaction occurs, when occurs, it takes place offline and only in cash at the end of a*
501 *ride”.*
502

503 Most interviewees did not comment on FB’s for-profit nature but described FB as a communication medium that
504 does not make any profit from StR’s operation. However, all participants speculated that sooner or later a for-profit
505 ride-sharing company would appear in Greece as well and towards such, while expressing their concerns P1 noted:
506

507 *“Such a company will change how ride-sharing works as it will impose its very own rules”.*
508

509 Other interviewees (P3, P8) while comparing StR to a for-profit company expressed their content that

510 *“ [...] there does not exist an app that would make things more ‘rational’ and impersonal. [...] I like this type of*
511 *freedom and self-organization [within StR] [...] if a company appears it’s going to set its very own for-profit*
512 *agenda”.*
513

514 In this light, member passenger (P4) while discussing the process of organizing a ride among StR members described it
515 as one that

516 *“[...] is set up by peers, one to one [...] without the need of any verification from the admin team or somebody*
517 *else. I have my FB profile, your own and we agree privately as individuals about a ride’s logistics. It feels that*
518 *no one else has a say on this process”.*
519

520 Manuscript submitted to ACM

Another member driver (P7) described ride-sharing within StR both as a self-organized and solidarity-driven practice in the sense that

“[...] people do not want to use public transportation which is a monopoly [in Greece] so they, themselves, have found another way to act and react where they can also sometimes offer a free ride to someone that is not able to chip-in”.

In this theme, we presented the interviewees’ concerns and thoughts about a scenario in which a for-profit ride-sharing company would appear which they described as one that would enforce new rules on how ride-sharing is mediated and performed. On the contrary, we presented our findings which depict organizing the logistics of a ride-share among StR members as a process independent from third parties and as a highly negotiable activity. Moreover, we saw that ride-sharing among StR members is performed as a not-for-profit activity and occasionally solidarity-driven, out of which FB, as the supporting medium is considered to make no direct profit. Finally, as the reviewing system which is suggested by the admin team is not adopted and while extrapolating from our participants narrations via which they described that setting up a ride occurs in private and any monetary transaction is in cash, we observed that organizing ride-shares via StR is a non directly monitored practice.

4.2 Building trust(s)

Alongside organizing the logistics of a ride-share, our research participants were prompted to discuss about and reflect on the process/processes of trusting another member to share a ride.

Participants, referred to trusting each other not as fixed, one-off, process but as a “*subjective*” and contextualized one that traverses different phases. According to P4 (a member of the group who participates as a passenger)

“because of the way StR is structured, everyone decides for himself and with their very own criteria to trust another member of StR or not for a ride-share”

and as reported by another interviewee (P3, the creator and a member of the admin team)

“In StR, everyone has its very own experiences, values and principles. Thus the way I, myself, ‘evaluate’ and decide might differ from someone else’s way”.

As already described, the admin team in order to ‘facilitate’ trust among members of StR has proposed the use of hashtags for the exchange of reviews among StR members. However, as such a more systematized process has not yet been adopted by the group’s members, there does not exist one universal reviewing system in place which StR members typically use.

The interviewed drivers and passengers reported that only on very few occasions a potential co-rider asks about the driving skills of a person online; before co-riders meet in person in/on a vehicle. However, P10 (a driver) mentioned that usually their co-riders (passengers) ask them at the very beginning of a ride

“[...] how many years of driving experience I got, what routes I’ve driven so far [...] I reckon in order to find out if I am an experienced driver or not”.

Along the same lines, P7 (driver) mentioned that during a ride, it is typical to be asked “*[...] if you’ve offered many rides via StR*” and also mentioned that

“In order to make my co-riders feel comfortable, I occasionally narrate driving stories which I hope that depict my driving past experience”.

P9, a driver and a member of the admin team while talking about someone's driving skills and reviewing drivers within StR, interestingly underscored that

"When someone has a driving licence, this implies that the state is trusting them to exist on a greek road. I hope that the state knows what it's doing whilst I do not believe so".

While talking about reviewing each other, P10 and P7, both drivers, referred to some occasions when underneath a post offering a ride that they have made, some other members of StR which have traveled with them in the past wrote *"on the fly something like a review"* in the form of a FB comment which however did not directly refer to their driving skills but to the ride-share in general. Some participants argued that reviewing each other could help the group's operation in the future while P7 presented *"good reviews with the use of hashtags"* as *"clutter"* for the group's operation and mentioned that *"Bad reviews can be useful, not a 'ton' of good ones"*. Likewise, members passengers (P4,P5) told us that they most probably wouldn't write a *"good review"* on StR's page for someone they travelled with but that they would

" [...] definitely report publicly to the rest of the group incidents where drivers might have had a 'weird' behavior towards them".

Moreover, our findings indicate that trust among StR members does not only refer to the driving skills of a person and that someone's good driving skills might not be enough for a StR member to join a ride-share. For example, a member passenger (P4) referred to an occasion where they decided to reject an offer from *"a possibly professional driver as they were offering empty seats in a freight car"*. On this incident they mentioned:

" [...] the thought of a girl in the same vehicle with a man that drives a truck, stereotypically caused a sense of insecurity. So, I decided to thank him and let him know that I found another ride".

Similarly, another participant (P8) while talking about why they have decided not to participate in a ride reported:

" [...] something that prevented me from using StR was that the drivers were always men [...] it might be my very personal prejudice but I would feel more comfortable if I was travelling with a driver that was a stranger woman rather than a stranger man"

While talking about the process of trusting each other to organize a ride-share, all participants mentioned that 'scanning' the FB profile of a potential co-rider is a process they tend to go through before agreeing or not to co-travel. This includes visiting a co-rider's FB profile, browsing their uploaded photos, recent posts, videos, pages and groups liked and sometimes checking someone's past activity on StR. P4 (passenger), P1 and P2 (drivers) referred to occasions when they rejected somebody offering a ride due to their FB profile assets which included nationalist symbols. Another participant (P3) referred to FB profiles that they wouldn't contact for a ride-share

" [...] if there was [in a FB profile] any kind of sexist-like posts or information".

Most participants also stated that the way someone writes a post, writes a personal message or talks on the phone are important factors that affect building trust.

Our interviewees also referred to 'blurry' profiles (those that offer limited personal information), by expressing their concerns while also suggesting potential work-arounds. P3 expressed their anxiety on trusting someone that *"do not have any photos on FB or has only few FB friends"* and P9 narrated an occasion when they hosted a co-rider

" [...] who had a FB profile with a pseudonym, not a 'real' name and a random photo [...] I explained to them that I cannot travel with someone that I don't know anything about. We chatted and it was [name] who

625 *studies in [university] and loves to read books. Thus, I told them that there is no problem and I understand*
626 *that someone wants to stay anonymous online. [...] that everything seems OK and we can travel together”.*
627

628 P1 while referring to such occasions suggested that co-riders can make a video call to “*tame this sense of insecurity*”.

629 Having mutual friends was a factor which was given importance by the majority of participants (P1,P2,P3,P6,P8) in
630 order to both cope with the occasion of trusting someone with a ‘blurry’ profile and to trust somebody in general. P1
631 (driver) referred to an incident when
632

633 *“[...] a girl who had a photo of 5 cats, sent a message about a ride. We had three mutual friends which live in*
634 *[name of city]. I then sent a message to one of them and asked about her. [...] later on, when I was informed*
635 *from this mutual friend that she is OK, I wrote her that we could do the ride together”.*
636
637

638 Some members drivers (P8, P6) when discussing trust among co-riders underscored that knowing who else is going
639 to be in the vehicle except from the driver can be an important factor that would make them feel more “*comfortable*”
640 and “*relaxed*” and P10 (a driver) mentioned that when they organize a ride-share they usually create a group chat.
641

642 *“I do so in order to let the other passengers know who else is going to be in the car [...] to be able to know via*
643 *FB who will be the future co-riders and start discussing altogether where we are going, what we want and*
644 *what we don’t want”.*
645

646 In this theme, we presented our findings which indicate that among StR members trusting each other to share a
647 ride is a versatile process, as trust does not only refer to the driving skills of the person who offers a ride, which on
648 some occasions is not seen as the primary factor to join a ride-share. In this regard, we described that building trust
649 among future riders and ‘evaluating’ a potential co-rider is not a standardized process but is a varying, multilateral and
650 situated operation that takes place in both the digital (i.e. before exchanging personal messages and while organizing
651 the logistics of a ride) and in the physical realm (i.e. while in a ride). This operation is informed by subjective, personal
652 criteria and is affected by factors like the role a member has (i.e. driver, passenger), their gender, the information a
653 potential co-rider offers on their FB profile and a member’s digital activity in general, the existence of mutual FB friends,
654 the existence of other people in a vehicle, the ride-share as such. In this theme we also depicted that as primarily FB
655 users, StR members participate in the group with their FB identities (‘rich’ or ‘blurry’) which do not always have to
656 coincide their ‘real’ ones.
657
658
659
660

661 **4.3 Appropriating FB to develop a community and a sharing culture**

662
663 As also presented in 2.2.2, since 2019, the admin team -except for the admin and creator of the group (P3)- is not always
664 consisted of the same members, as regularly new persons are added and others leave.

665 In particular, when in 2019, the hashtags system was introduced, the creator of the group and its only admin by that
666 time, asked for help in managing the group’s new needs through a video that was posted on the group’s wall.

667 When discussing about this incident, P3 mentioned

668
669 *“I think that not a lot of members watched that video but I was lucky, as some of those that came across it,*
670 *expressed their willingness to help. I was also lucky cause those persons were aware of what it should be done*
671 *and what they need to do and also were motivated to contribute. One of them [name] was already really*
672 *active before this call and had been sharing with me ideas about the group, thus we already had some online*
673 *StR-related conversations”*
674
675
676

677 Since then, other similar calls have been announced in the group's page by members of the admin team and new
678 members have joined while others have left. The members of the admin team we interviewed (P3,P9) reported that they
679 are in charge of managing the group's basic needs. They maintain the group's digital assets (e.g. refresh cover photos,
680 post suggestions in the form of videos for the use and role of the group), they accept new members and moderate the
681 posts made in the group. If a post is not using the hashtags system correctly, the admin team suggests changes. If a post
682 is written in another language, the moderators translate the post also in Greek. If a post is against the ethics/values
683 of the group, it is thus not accepted. Similarly they intervene if a post (despite accepted initially) or a comment are
684 considered to violate the group's rules (i.e. hate speech, bullying speech).
685

686
687 On the later, P3 referred to occasions when members reached them via personal messages to report that "[...] *this*
688 *person did wrote this or that which is sexist or fascist etc*". Accordingly, StR members also use the report option to
689 denounce a post or a comment and "[...] *if something is reported 4-5 times then someone from the admin team will most*
690 *probably intervene*" (P3,P9).
691

692 Except deleting posts, the admin team participants also referred to occasions when members have been expelled by
693 the group. In specific, P3 described incidents which can lead to such a decision when for example some persons
694

695 *"repetitively or aggressively [...] don't show respect to some other members and are offensive or impolite or*
696 *just want to 'import' their doom and gloom or their hatred."*
697

698 From our interviewees we have been informed that the admin team members do not contribute the same amount of
699 time and effort, as for example there is not something like a shifts' timetable which they decide to follow. Similarly, we
700 were informed and observed that not all admin team members hold the same agency levels. On the latter, P9 told us
701

702 *"[...] meetings and conversations take place to discuss how we can make StR better, more flexible, more efficient.*
703 *This 'how-to' is the result of a conversation among the members [of the admin team] that do offer their ideas*
704 *but at the very end, it is [name of P3] who decides what is going to happen".*
705
706
707

708
709 While reflecting upon the hashtags system P3 and P9 commented that StR, boldly started to grow in members in 2017.
710 The growing number of participants led to more posts made in the group, thus *"to an incremental offer and demand of*
711 *seats"*. This meant that more people could find a ride but to do so *"they should be able to browse the relevant information"*
712 (P3). The increasing number of posts along with FB's 'reality' where on top appear the most popular posts -the ones
713 that have more reactions- and not the most recent ones made more difficult the search and discovery of available rides.
714 This was described as *"the main and the 'only' problem"* (P3) of the group's performance.
715

716 In this regard, during the spring of 2019 and in order to facilitate search and discovery of available seats and overcome
717 *"grinding scroll-downs"* (P5), a system that makes use of the hashtags was introduced. P3 mentioned that the basic idea
718 of this system was suggested to them by non-members of the admin team. This concept was then firmly designed and
719 introduced gradually to the rest of the group. P9 while commenting on this impromptu search and discovery hashtags
720 system noted:
721

722 *"[...] if such a codification was made by a professional software engineer that builds a ride-sharing app, the*
723 *system that they would make, would mandate its users to choose "offering" or "looking-for" from a drop*
724 *down list, to choose a city from a list, to pick a date from a calendar box [...] but this system was created by*
725 *amateurs"*.
726
727

729 The majority of the interviewees have described the hashtags system as useful and more convenient. However, a
730 member driver (P1) who we interviewed before this system became mandatory, underscored the *“fixation of the admin*
731 *team to use this system”* which was articulated in the form of instructive comments made underneath ride-related posts.
732 Similarly, participant passenger (P4) informed us that they are not yet accustomed with that system and that they prefer
733

734 *“[...] the old ‘folksy’ way of scrolling down to find a ride. In this way I can also get a glimpse of what has been*
735 *going on in the group lately”.*
736

737 Participant P9, interestingly highlighted that

738 *“[...] the hashtags system has made the search and discovery of available rides easier without however*
739 *restricting a group of people like StR to communicate about things other than a ride”.*
740

741 Those *“things other than a ride”* that P9 referred to, occur on some occasions in the comments underneath a ride-
742 related post and mainly in non ride-related posts. The later, can be posts via which somebody asks for information
743 about a route or a road trip, posts that raise debates around the operation and the character of the group (e.g. about
744 the costing of rides, about the use of hashtags, about the group’s operation during the coronavirus lockdowns), posts
745 made to publicize someone’s bad experience in a ride and miscellaneous others (e.g. referring to missing items, offering
746 items like train or plain tickets for free or on a low price), posts like ours which refer to transportation or ride-sharing
747 related research. When asked about those less ride-related posts, the majority of the interviewees reported that since
748 the hashtags system was introduced such posts are not *“noisy”* and thus they should be allowed but in a moderate
749 way. However, the majority of interviewees suggested that the admin team should intervene by deleting offensive and
750 racist posts or comments. Interestingly, member passenger (P6) while talking about *“provocative comments and posts”*
751 mentioned
752

753 *“[...] even when the situation gets out of control it can be ‘good’ in a way. Through such posts, you can*
754 *understand few things for the people that are in the group [...] if someone is homophobic, fascist, sexist [...]*
755 *thus who you should trust or not”*
756

757 connoting that in this way members of the group that have such views are ‘publicly’ exposed.

758 Except for such, many to many online conversations that might occur among StR members, the admin team has
759 twice so far organized offline events in the form of gatherings/parties. During our research, some members of the admin
760 team have been organizing a 10-year party -one we attended- which took place in order to

761 *“[...] bring closer StR members and fans, the community. Even some who might not meet each other on a ride*
762 *because they most probably have different destinations” (P3).*
763

764 P2 described StR as a *“an experimental and possibly ‘educative’ process”* which can lead to

765 *“[...] the nurturing of a new ideology, another way of life [...] but I’m not sure that this can happen as more*
766 *and more people of different backgrounds join the group”.*
767

768 Similarly, P3,P5 and P9, stated that StR has been already and holds the potential to be a good basis for the propagation
769 of other sharing activities. To this day, a group used for accommodation sharing (“Share the couch”) and other local or
770 guild-like ride-sharing (e.g. used by university staff) groups have been created from StR members.
771

772 Finally, some interviewees also mentioned that in some occasions in order to set up a ride-share they have completely
773 bypassed StR; they did not make an ‘offering’ or ‘looking-for’ public post but directly contacted some StR members
774 with which they have shared a ride in the past.
775

781 In this theme, we stated how the admin team of StR is an internal body -in the sense that its members use themselves
782 StR and participate in ride-shares- composed of different persons who help in the management, sustainment and
783 evolution of the group -which however do not hold the same levels of agency. We also presented how the scaling up of
784 StR complicated the search and discovery of available ride-shares, a condition which led to the ‘design’ and development
785 of an impromptu system, one that did not ask for professional programming skills. We also reported that among StR
786 members new sharing initiatives have been developed. Finally, we presented how building relations, which undoubtedly
787 affects building trust(s) among StR members, are facilitated by offline meetings and collective online discussions which
788 do not always refer to the activity of ride-sharing per se.
789
790

791 5 DISCUSSION

792
793
794 In our Findings section, we brought to the surface the plural ways that StR members build trust(s), the negotiations that
795 occur among individuals when setting-up a ride-share and the many-to-many discussions that take place among StR
796 users as members of a broader community of sharers. We also described how the medium (FB) has been appropriated by
797 StR members to first and foremost initiate a ride-sharing ‘platform’ on top of a medium that has not been designed for
798 the sharing of physical goods/resources per se, to facilitate ride-sharing as a service among individuals and to enhance
799 the performance of StR as an internally managed, community-driven and participatory SE initiative.
800

801
802 We believe that the sociotechnical processes as described above that manifest in StR that stand in contrast to
803 the operation of the ‘big’ platform-firms, which are developed in ways that occasionally design out participation
804 and self-organization [52, 75, 76], can be informative in our ‘Solidarity HCI-driven’ inquiry for the development of
805 community-driven SEPs outside FB or platforms of a similar ilk.
806

807 Arguably however, someone could ask why we need and suggest the development of other infrastructures, if groups
808 like StR can operate -and to an extent successfully- on already existing social media platforms. We believe T.Scholz’s
809 concept of Platform Cooperativism is key to answering such a practical query. Within Platform Cooperativism, T.Scholz’s
810 [75] proposes a collective type of ownership of SEPs, argues in favour of transparent data and suggests that SEPs’ users
811 should participate in the design decisions.
812

813 Grounding T.Scholz’s suggestions in StR and the need for the development of other infrastructures, we need to
814 underscore that FB (in contrast to some of our participants’ views) is a for-profit platform -while not directly profiting
815 from ride-shares organized via StR (yet)- where users’ data become the product that is sold to third-parties which use
816 them for different, mainly for-profit, reasons[33].
817

818 In addition, we need to boldly state the manifold and precarious dependence of StR on FB in spite of the fact that so
819 far it has favored to an extent its operation. This manifold and precarious dependence can be exemplified and illustrated
820 in various situations. For example, in the scenario that access to FB is blocked [7] then also StR as all FB groups will
821 have to pause their operation as such. Or in the expected scenario that FB deploys their bespoke designed ride-sharing
822 app [23] which could arguably affect StR or even lead to its permanent close-down. Among other occasions, we can
823 speculate that future changes in the affordances of FB groups could make StR’s impromptu search and discovery system
824 idle, something that could possibly heavily affect the group’s operation.
825
826

827 In this regard, while on the one hand we acknowledge the novelty of StR as a community-driven SE ‘platform’ on
828 the other hand and for the reasons we mentioned above, we believe that such initiatives could be better ‘nested’ in
829 other, more autonomous and independent, infrastructures which are more transparent and better designed to support
830 community building and self-organization.
831

833 As a result, we suggest malleability as a design quality of the SEPs we are hereby discussing. We see malleability
834 evidenced in design affordances which can better support agency over a sharing activity, as to what can be shared, to
835 the digital designs used to support sharing activities, to building trust(s) and identities. We also see malleability as a
836 design quality that can favor the development of a generative sharing culture. In addition, we propose the employment
837 of trust building mechanisms which aim at building relational trust that is evidenced in enduring and resilient relations.
838 Finally, we suggest that within the aim of developing familiarity and authentic relations, SEPs should employ designs
839 that as non-normalizing avoid the reproduction of stereotypes and thus favor users’ self-determination.
840
841

842 843 **5.1 Malleability as a design attribute of SEPs**

845 Malleability (or alternatively referred to as tailorability and appropriability) as a design quality of IT artefacts have been
846 intensively investigated by HCI and CSCW research [54, 69] especially within the field of End-User Development(EUD).
847 EUD refers to a set of methods, techniques and tools to create, modify or extend an IT artefact without always having
848 professional programming skills [68]. Among EUD researchers it has been predicted [30] that HCI design goals, if aimed
849 at empowering end users, will evolve from easy-to-use to easy-to-adapt and develop. Grounding this in the design
850 of platforms to support the SE, user and community empowerment has always been articulated as a main point of
851 departure and a key design goal [75–77].
852

853 Grounding malleability in our findings from researching StR, we observed that FB, as a ‘malleable’, i.e. adaptable and
854 flexible (in the context we have been exploring it, i.e. ride-sharing) communication and social media infrastructure,
855 played a key role in StR’s emergence and its development eventually into a widely used and community-driven
856 ride-sharing ‘platform’.
857

858 More specifically, as we previously described, despite the fact that FB groups are not designed to support sharing
859 of physical resources/goods per se, FB afforded the initial plan of a user (the creator of StR) to set up a rudimentary
860 ride-sharing group where they, some of their friends and some friends of friends could exchange information in order
861 to ultimately organize ride-shares. In addition, we saw that when the group got congested as more and more people
862 have started using it and members were not able to review relevant options in a timely manner [51] some members of
863 StR ‘designed’ a process to facilitate search and discovery of available rides which was materialized as a ‘bricolage of
864 hashtags’.
865

866 Similarly, we saw that a similar hashtags’ system has been proposed as a means of giving feedback aiming at
867 supporting trust-building among StR members. Both of these impromptu designs were contributed and developed by
868 members of the community itself. Developments which as we presented did not ask for professional programming
869 skills and most importantly they were afforded by FB.
870

871 Moreover, we found that the introduction and application of hashtags -which we interpret as a hint of malleability in
872 the FB context we have been researching- has been a key factor for the sustainment of StR as a participatory scheme
873 where except traditional peer-to-peer ride-sharing evidenced in posts of ‘offering’ or ‘looking for’ rides, its members
874 exchange other information (e.g. about road trips, about routes, train or plain ticket giveouts), discuss about StR’s
875 character and performance (e.g. posts about the costing of rides, posts introducing designs suggestions/ideas), engage
876 with the group’s management (i.e. posts explaining the hashtags system, asking for volunteers) and future (e.g. during
877 the recent lockdown) etc. Such many-to-many discussions have made StR except for a peer-to-peer platform also an
878 open ‘forum’ space. One of which operation, we believe is favouring participation, community building, the development
879 of a collective identity and the propagation of sharing in general. As we found, the latter, is evidenced in the scaling out
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885 [55] of StR as some of its members have created new sharing initiatives within FB groups that operate in similar ways
886 (e.g. an accommodation-sharing group, local-ride sharing groups).

887 Departing from the above interpretations and the works that have shaped our HCI lens[52, 75, 87], we suggest
888 malleability as a design feature of the SEPs we have been interested in discussing.

889 To the best of our knowledge there have not (yet) been developed SEPs that employ malleability as a design feature.
890 We think however, that social media infrastructures, as infrastructures adaptable to SE contexts (i.e. in cases like
891 ride-sharing as in StR and in freecycling groups [62]) can be informative towards that design approach.

892 Similarly, we can see elements of malleability in the so-called project management apps despite them being designed
893 to support mainly cooperation and the management of projects among co-workers. In such apps, users can create
894 multiple groups/projects, allocate tasks, make wall-posts and participate in many-to-many discussions and they can
895 to an extend customize some of the apps' features. While such are not designed to mediate processes like the ones
896 typically manifested within SE (i.e. search and discovery of resources, building trust, organizing logistics) we believe
897 that they have affordances which can be instructive for the development of malleable SEPs.

898 To better ground malleability in SE, we envision malleable SEPs as 'bedrock' communication infrastructures on
899 top of which multiple and different SE groups can be developed. As a result, we picture that these communication
900 infrastructures, afford the creation of ride-sharing groups along with room-sharing, food-sharing and tool-sharing
901 ones etc. We also see malleability as the ability of SE groups' users to adjust their sharing activities during crises (e.g.
902 socioeconomical, pandemics, wildfires etc). For example we picture that members of a ride-sharing group, instead of
903 pausing their activity due to a lockdown or a wildfire, can modify the design of the group and transform it to one that
904 can support those in need (e.g. drivers can deliver food to those that are quarantined) or to a group that can be used to
905 organize ride-shares that get people away from the region in danger or bring in volunteers. Such transformations are
906 also in alignment with work on solidarity movements, which as reported in [87] have the capacity to adjust and evolve
907 based on situated human needs and collective priorities.

908 Moreover, our findings which have indicated the key role that StR's 'forum' have played in the evolution of the
909 group as a community, point to the need for malleable SEPs to offer (possibly though a template-like form) a series of
910 tools that end-users of each SE group can use to create forums or smaller chat rooms. Similarly, departing from the
911 case of StR where the supporting medium (FB), afforded the bottom-up creation of a search and discovery system we
912 point to the importance of developing designs that afford customizations by end users that can better support a specific
913 sharing activity.

914 To be more specific, a search and discovery mechanism to support a ride-sharing SE context, where locations and
915 dates are key information, can differ considerably from a context where members of a SE group practice foodsaving
916 and foodsharing or share tools. In the latter, date and location can be important but also important for members, would
917 be to browse and post information on the type of a tool, its availability (i.e. for how long it can be borrowed), its current
918 holder (in the occasion that tools are community owned and change hands in a fast pace), its need to be repaired from a
919 member of the community that has the skills etc. Arguably, the hashtags system as deployed in StR afforded by FB,
920 could be adapted for the search and discovery of a lot of different types of shareable resources. In that, we do not suggest
921 the employment of a hashtags system as such, but that malleable SEPs should offer indexing tools that can be picked
922 out possibly from a tools' library which can serve various purposes across multiple types of resources being shared.

923 However, we note that to favor community building and mutual understanding, such tools should not be designed
924 for the standardization of a sharing activity but should operate to supplement sharing as a social practice where
925 negotiations take place [52]. This view can be better illustrated by the case of StR where we found that the hashtags'

937 system did better organize ride-related posts, as to date of departure, starting and ending destination, and facilitated
938 the matchmaking of ride-sharers without however enforcing a high level of standardization, one that could be
939 materialized for example in the use of formal fields -through which drivers could except date and destination, predefine
940 in-vehicle rules, predefine the route to be followed, the cost per person etc – or in a ‘book-now’ option, which can be
941 found in other SE platforms (i.e. Blablacar). In this regard, we believe that such mechanisms that can turn sharing into a
942 highly technologized processes should not be opted by the platforms we discuss here as removing negotiations can
943 severely affect sharing as a community-driven and potentially caring-based and solidarity-driven activity[52].
944

945 Overall, in this discussion point, we have proposed malleability as design attribute of SE platforms, one which
946 we described as the ability that SE users have to create and participate in multiple SE groups and to adjust those
947 groups’ designs and processes to better support varying sharing activities. With agency, community needs, mutual
948 understanding and solidarity in mind, we similarly stated the need for the deployment of mechanisms that afford the
949 development of sociotechnical processes that can support different types of sharing activities which however do not
950 standardize sharing but aim at favouring negotiations.
951

952 5.2 Relational trust and self-determined identities

953 Trust, as a key element of sharing practices among ‘strangers’, is one of the most researched topics within the HCI
954 community [6, 41, 49, 57]. Building trust has been described as of paramount importance for the operation of SEPs
955 in order to mitigate risk among sharers [14, 82]. To support trust building, rating and reputation systems have been
956 widely adopted as quick fixes, simplifying the peer-to-peer exchange of resources and services. Even though such
957 rating, filtering and reputation schemes are useful, especially when trust-building needs to work in a large scale, they
958 have been widely criticized from multiple fronts, for example in relation to how they affect working conditions for
959 gig economy workers and whether they are actually effective [75, 76]. Similarly, such trust-building and risk-averse
960 schemes have been criticized for standardizing and objectifying the process of getting to know each other and trusting
961 each other, for removing negotiations among sharers [52] and for prompting their users to create ‘generic’ digital
962 identities [26]. Except this one-off and ‘superficial’ type of trust, building relational trust which is of high relevance
963 to our work, has been introduced as a different approach. Relational trust refers to the trust that is built slowly and
964 progressively over repeated interactions among individuals [19]. We believe that such repeated interactions can create
965 new bonds and enduring relations, thus favor community building, and lead to more resilient SE schemes.
966

967 Within the infrastructures described above as malleable ‘bedrock’ platforms which afford that its members can create
968 and participate in multiple SE groups we see the potential for relational trust to manifest. As such, we can picture that
969 members of a ride-sharing group built on top of a malleable SEP, join the platform initially in order to participate in
970 typical ride-sharing while progressively use it to organize other sharing activities; for example, group road-trips which
971 could bring members together for longer periods and in more intimate settings. In a similar scenario, within a group
972 developed to facilitate tools’ sharing we can picture its members building relations thus familiarity, while from typical
973 tool-sharing, they progressively use the platform to organize repair cafes, ‘building and mending parties’ etc. Moreover,
974 within this continuity where a slow proliferation of sharing manifests, we can picture that members already familiar
975 and connected to each other in a context (i.e. ride-sharing, tool-sharing) can segue into other sharing contexts (e.g. from
976 ride-sharing and group-road trips to accommodation-sharing) or create solidarity sharing groups in cases of crises as
977 described before. We argue that relational trust is important as a design goal as it enables people to develop meaningful
978 and potentially more resilient relations and as such engage outside of the confinements of a very specific SE group and
979 a very specific SE activity.
980

989 To better support the development of familiarity, we also suggest that in those SEPs, users should be offered digital
990 tools via which they can delegate trust among each other. In this suggestion we also reflect on our findings from
991 researching StR (as also found in [37]), which indicated how having mutual friends on FB and ‘real world’ acquaintances
992 worked as a referral chain for StR members, with people being able to ask their mutual friends to ‘vouch’ for a future
993 co-rider. In this regard, we suggest that users can join one or another SE group provided that a number of active
994 members support their admission. Such a number cannot be a fixed one but should be adjustable to each SE group
995 depending on the sharing activity that is performed, the size of the group etc. This way of vouching for somebody comes
996 in contrast to the mechanisms that are employed in some SEPs where trust is in tandem with the abovedescribed ‘crisp’
997 reviewing and rating systems [52] supported by some third-party verifications. Such vouching processes promoted
998 as an extra layer of trust to enhance users’ eligibility and trustworthiness appear in various platforms where users
999 are prompted to upload a screenshot of their government-issued ID of which status is checked by the third-party
1000 collaborating firm.
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1004 In this transition from trusting each other based on highly technologized processes and external vouching, to building
1005 familiarity through relational trust as the result of repeated interactions, we similarly see the opportunity and the
1006 requirement for members of SE groups to participate with more self-determined and ‘authentic’ identities rather than
1007 government-issued or ‘real’ ones. We think that such design affordances can favor pluralism and avoid the reproduction
1008 of stereotypes. As we saw in our findings, operating a ride-sharing scheme like StR on a social media platform like FB
1009 allowed users to construct, present and narrate more self-determined identities. More specifically, despite the fact that
1010 as any medium, FB introduces its own sociotechnical limitations for the construction of identities [38, 43, 64], we saw
1011 that StR members participate in the group with identities that are explicit or implicit (in relation to gender, connection
1012 to real identity or name, etc.), something that is known as a common and accepted practice in most social networking
1013 platforms. Such rich identities also materialise the plural trust mechanisms that we have discussed, as they enable users
1014 to reflect on these self-determined and narrated (on FB) identities before making a decision about with whom and what
1015 can be shared. For members of StR the availability of these identities on FB posed dilemmas which are not typically
1016 found on SEPs, their matchmaking and reviewing systems (i.e. would you share a ride with a nationalist or a climate
1017 change denier?) that nonetheless allowed them to make a more informed and personal decision rather than one based
1018 on an aggregation of scores or a voucher offered by a firm.
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1022 Those findings point to the limitations of users’ profiles on existing SEPs that in most occasions reduce peoples’
1023 identities to a name, a picture and a rating. Thus, they inform our suggestion that SEPs as platforms aiming at building
1024 relational trust among its members that is evidenced in authentic and inclusive relations, should employ mechanisms
1025 that can expand the reach of legal identities [25] and favor users self-affirmation instead of prompting users to enhance
1026 their trustworthiness (or marketability) by creating generic profiles that tell a right and safe story [26].
1027

1028
1029 Having said that, we should also note that not all SEPs should (or could) construct FB-like, data and media rich
1030 digital profiles for their users, and there are multiple and important reasons (e.g. privacy) to resist such a development
1031 that might lead to arbitrarily and naively ‘rating’ people based on their online self-constructed or analytics-driven
1032 identities. To mitigate such phenomena, we believe that vouching mechanisms as the ones presented above are towards
1033 the right direction.
1034

1035 From summarizing the above, we argue that SEPs should invest in the development of mechanisms that can support
1036 building relational trust and enduring resilient connections instead of aiming at increasing an ‘impersonal’ and fast
1037 sharing. In addition, we have argued that SEPs designs should avoid reproducing the modernist and normalizing views
1038 of our current society [53] and thus enable openness, plurality and self-determination [80].
1039

6 LIMITATIONS

Reflecting on the process we have followed to engage with StR members, we acknowledge that the individuals who did not provide adequate contact details via our questionnaire, despite their willingness to participate, have been excluded from our research. Moreover, as during this process we perceived and positioned ourselves as both HCI researchers and active members of StR’s community and we thus chose -which was also technically feasible- to directly (on the group’s ‘forum’) express our research intentions and through a public ‘open call’ to look for participants (instead of for example contacting all members of StR in private) we acknowledge the possibility that some StR members never came across our posts (e.g. because at that time they did not check StR’s activity or because they have not been using FB for some time etc) and the possibility that some members saw our first post but not our questionnaire. We finally acknowledge that some individuals -technically still members of StR- which might have stopped using the group due to various reasons (e.g. because they are using ride-sharing alternatives, because they might have been disappointed by StR’s operation or ride-sharing in general) might also have not encountered our research related posts.

Thus, we understand as a limitation that as in any qualitative HCI study of this type, some voices are not or might not be fully represented in this work. However, we believe that the approach we have followed have amply supported our aim to gather insights into the sociotechnical processes that manifest within a community-driven ride-sharing initiative and building upon those insights to provide design implications relevant to CSCW and HCI for the development of SEPs.

7 CONCLUSION

In response to a lack of research on SE that promotes community building, participation and a caring-based sharing in this paper we presented our findings from our engagement with a ride-sharing initiative that emerged in a FB group and has developed into a community-driven SE ‘platform’. Our findings pointed to the multiple ways and mechanisms through which the group members build trusts and social relations and to the negotiations that manifest both among individual riders and among StR users as members of a community. Moreover, we presented how they have appropriated FB to support ride-sharing as a service and the group’s operation in general. Finally, we observed that the researched FB group except for ride-sharing purposes is also used to serve other sharing activities and that new sharing communities have emerged from this group. Departing from our findings from researching StR, in our discussion, we suggested malleability as a design quality of SEPs that can favor self-organization, community building and participation and the development of a generative sharing culture. We also suggested the employment of designs which aim at supporting the establishment of relational trust and we argued for the employment of designs which can foster pluralism and self-affirmation.

We acknowledge that through this work we have engaged with malleable SEPs on their very embryonic form and thus we argue that more work (e.g. research or pilot projects) should be performed in order to explore potentialities (e.g. data ownership models, collaborative designing and tailoring, governance models) and other issues (e.g. managing conflicts, scale, privacy) of which we have not been able to do in this paper. However, we see this work as a small contribution in the ‘sharing discourse’ that points towards reclaiming SE as one that can favor sharing as a community-driven, self-organized and potentially altruistic activity.

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