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# Exploring Autistic Coping through Participatory Design

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Autistic adults find themselves embedded within digital environments that are largely designed by and for neurotypical people. These environments are often unsuitable and challenging for the neurodivergent. As a result, autistic people are exposed to high levels of stress when using digital technologies, and must invest extraordinary effort in coping with it. In this participatory design study, we partnered with 20 autistic adults to investigate how they handle the stress caused by social media use. Their ways of coping and their design work point at the most problematic aspects of the design of social media, and suggest alternative directions for these digital platforms. We conclude that participatory design grounded on autistic coping provides an opportunity for the neuro-diversification of technology design.

CCS Concepts: • **Human-centered computing** → **Empirical studies in collaborative and social computing**.

Additional Key Words and Phrases: coping strategies, ways of coping, autistic adults, social media, participatory design

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## 1 Introduction

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental condition that affects about 1% of the world population [67]. It is medically characterised by difficulties in social communication and interaction, restricted or repetitive patterns of behaviour or interests [32], and sensory particularities [3, 16, 41]. We include this definition of autism for completeness and reference purposes, however we do not subscribe to a medicalised understanding of ASD. Our work is instead inspired by and aligned with the neurodiversity paradigm [65], which understands autism as difference. According to the neurodiversity perspective, autism is a reflection of human neurological diversity [56] and represents a different cognitive style [15].

In this paper, we report on participatory design activities conducted with 20 autistic collaborators about their social media experiences. Our collaborative design inquiry led us into an exploration of autistic coping in the context of social media use. Coping is the process by which we adapt to our

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environment in order to keep well [53], and comprises the actions we use to deal with stressful situations [57]. Autistic adults find themselves embedded within environments, both physical and digital, that are largely designed by and for neurotypical people. These environments are often challenging and unsuitable for the neurodivergent. As a result, autistic people are exposed to high levels of stress in their daily lives [46, 47], and must invest extraordinary effort in their coping processes. In spite of this, research on how autistic people cope with stress is still limited and has mostly focused on children [47].

Our work contributes to the understanding of autistic coping in digital environments. It is positioned at the intersection of autism in adulthood and social media. Coping has been studied for both separately, but not together, with the only study at the intersection of coping, social media and autism involving adolescents and focusing exclusively on the coping strategy known as camouflaging [29]. Meanwhile, prior studies about how autistic adults engage with social media have mostly identified the stressors that autistic adults experience as a result of social media use, without exploring the attendant coping behaviour. The authors of these studies proceeded by, as expert designers, suggesting “*opportunities for interventions*” [11] and inclusive design recommendations [49]. In committing to a participatory design approach, our research took a different path. Our participatory methods helped us uncover how autistic adults are coping with their own stressors when using social media, and how they envision (re)designed digital environments assisting them in doing so in the future. Our participants’ design work speaks to what design aspects of social media are most urgent to address, and suggests alternative design directions.

This work thus tackles two research questions and makes two contributions to knowledge. Our research questions are:

- (1) How do autistic adults cope with the stressors derived from social media use?
- (2) How do autistic adults envision design supporting their coping processes in the context of social media?

Through inquiring into these questions, this paper contributes an expanded understanding of autistic coping in digital contexts, and provides an example of how identification and classification of coping behaviour can assist design work. Specifically, our paper highlights problematic areas in the design of social media platforms, such as the absence of tools for collaborative meaning-making and self-management in use, as well as the lack of user control over algorithmic content feeds and the sensory aspects of the social media experience.

## 2 Related work

### 2.1 Theories and classifications of coping

Scholars have identified two theoretical positions in the study of coping, which have been termed the “personality framework” and “coping as a process” [7]. In earlier research, coping was understood as primarily determined by personality attributes and individual traits, i.e. as a “*psychological construct*” [38, p. 10]. Gradually a recognition developed of the central role played by the environment, which has resulted in an understanding of coping as a process and a product of a specific contextual situation [38]. As a process and a product of environmental factors, coping has been defined as encompassing “*the myriad actions individuals use to deal with stressful experiences*” [57, p. 217], or more broadly as the process by which we “*adapt to the environment and maintain well-being*” [53, p. 1].

Coping behaviour has proven extremely difficult to classify [57]. Common classification categories such as problem-focused vs. emotion-focused coping, or approach vs. avoidance coping [57], have been criticised for reducing complex human behaviour to opposing binaries, and for being unable to accommodate complementary or supportive interactions between different coping behaviours

[47, 57]. A thorough attempt to develop a taxonomy of coping is provided in [57], which suggests a hierarchical structure of four levels, listed here from the bottom-up: 1) coping instances; 2) ways of coping or coping strategies; 3) families of coping; and 4) adaptive processes. Coping instances are the actual, real-time, individual responses to specific stressful situations. Ways of coping or coping strategies are lower order categories that group coping instances, which in turn are classified into 12 higher order categories named “families of coping”. Following this hierarchical taxonomy of coping, our study deployed an inductive, bottom-up approach [57] to group autistic instances of coping into lower order ways of coping in the context of social media stressors. As per existing literature conventions, in this paper we use both “ways of coping” and “coping strategies” to refer to our lower order coping categories.

## 2.2 Coping and autism in adulthood

Autistic adults’ coping practices have been studied in general, by examining commonly used strategies across a variety of situations (dispositional studies); or as deployed to handle specific situations and stressors (situational studies) [47]. Dispositional research has studied the associations between coping strategies and mental health outcomes, comparing results across autistic and non-autistic samples [47]. Findings suggest more frequent use of disengagement coping (i.e. directed away from the stressor) in autistic participants, and that engagement coping (i.e. directed towards the stressor) was associated with better well-being [47].

Between the situational studies, coping strategies have been explored in the context of sensory stimuli and social stigma. Up to 94% of autistic adults experience sensory differences [41], which include hyperreactivity (more intense reactions), hyporeactivity (no or delayed reaction) and sensory seeking (engaging with sensory input repeatedly) [41]. Autistic adults cope with their sensory differences through avoidance (i.e. escaping the overwhelming stimuli); through the use of tools for environmental control (e.g. sunglasses, earplugs); through physical reactions (e.g. covering one’s eyes or ears); by seeking soothing sensory input (e.g. music, soft materials); by leveraging single-channel processing, i.e. the ability to stop processing information from certain senses by becoming highly focused on others; and through engaging with other people, either by making sense of personal sensory experiences through comparison with those of others, or by seeking direct support from trusted people [30, 41, 52].

In relation to coping with social stigma, particular attention has been paid to camouflaging [14]. Autistic camouflaging has been defined as the conscious or unconscious employment of certain behavioural and cognitive strategies to better cope with the normative, non-autistic social world [14, 35]. Camouflaging-related coping behaviours include learning social skills through watching others and / or from media (TV, films, books, etc); researching the rules of social interactions; using scripts in social situations; copying others’ body language and facial expressions; monitoring and adjusting one’s body and face to appear relaxed and / or interested in others; performing a non-autistic persona; avoiding interacting with others; and seeking support to socialise [27]. A recent literature review concludes that autistic camouflaging may constitute a response to experiences of stigma, and that it is associated with higher self-reported autistic traits and mental health difficulties [14].

When it comes to autistic coping in the context of technology use, existing literature appears more focused on identifying stressors than ways of coping (e.g. [11, 49]). Exceptions are [68], [69] and [29]. [68] work on video calling use amongst autistic people found that coping strategies were deployed before, after and during calls. These strategies included: controlling sensory experiences to improve focus (e.g. sourcing comfortable sitting, adjusting audio settings); strategies to retain relevant information (e.g. writing notes); and developing a clear mental model of conversation partner’s affect and cognitive style. When lacking appropriate strategies, autistic participants reported

148 becoming more stressed, less able to interpret social-emotional cues, and less effective in their role  
149 for the meeting. Later research on autism-related conversations on Twitter describes behaviours  
150 that may be interpreted as coping strategies, such as abandoning Twitter altogether, using the  
151 blocking feature, taking advantage of structured communication options such as polls and ‘likes’,  
152 posting supportive and positive responses, and explicitly stating meaning and intent (e.g. when  
153 being sarcastic) [69]. [29] examined and compared the camouflaging practices of autistic adolescents  
154 offline and on social media. The authors concluded that autistic adolescents camouflage less on  
155 social media than in offline contexts, perhaps because social media interactions are experienced  
156 as more straightforward and comfortable than offline ones. This work connects the scholarship  
157 on autistic coping with a broader HCI and CSCW body of research about coping in the context of  
158 social media.

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### 2.3 Coping and social media

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Coping-related literature on social media does not take a dispositional approach, in the sense that there is no overarching collection of coping strategies commonly used on social media across a variety of stressors. Instead, studies adopt a narrow situational scope. Some have focused on how certain technical features such as lists [17] or friends-only profiles [61] are incorporated into ways of coping. Other studies have investigated a single coping strategy, such as creating multiple profiles within a single social media site (e.g. [60]); audience management (e.g. [19]); withdrawal and discontinued use (e.g. [5, 42]); or distraction [62]. Prior research has also explored coping strategies for specific stressors, such as the presence of multiple audiences within a single digital space or “context collapse” (e.g. [37, 43]), information overload (e.g. [33]), or maintaining privacy (e.g. [12, 13, 36, 66]).

Several of these studies attempt to classify ways of coping. A basic distinction is between technology-supported coping strategies, such as configuration of privacy settings or untagging photos; and behaviours beyond the bounds of interface features, such as providing false information or creating multiple profiles [13, 61, 66]. [13] suggests three broad categories of social media coping: 1) problem-focused strategies, such as active coping, information control, and privacy settings use; 2) emotion-focused strategies, for instance acceptance, avoidance and disengagement; and 3) communication strategies, such as negative word-of-mouth, instrumental support / information seeking, complaining and venting. Research on dealing with information overload classifies coping strategies into passive (requiring little effort), active (requiring user involvement) and advanced (based on exercising control) [33]. Passive strategies included cognitive heuristics (i.e. applying simple criteria to identify relevant information), omission, and failed action; active strategies included hiding, deleting, and account deactivation; and advanced strategies exerted control over the composition of one’s network or one’s behaviour. An additional classification attempt is provided by [36], who organised privacy-related coping strategies along three dimensions: behavioural vs. mental, preventive vs. corrective, and individual vs. collaborative. All three axes are applied to a single coping strategy. For instance, segmenting one’s audience within or across social media platforms can be classified as a behavioural, preventive, and individual strategy, since it involves taking action (behavioural) individually in order to avoid potential undesirable outcomes (preventive). Meanwhile, asking someone else to remove an unwanted photograph of oneself would be behavioural, but also corrective (seeking to minimise the negative effects of an event that has already taken place) and collaborative (involving negotiation with others) [36]. An example of a mental coping strategy would be adopting a responsible mindset towards the privacy of others, and trusting those others to correspond [36].

Our work differs from the above literature on social media-related coping strategies in two ways: rather than focusing on specific coping strategies, we address overall coping behaviour on social

197 media; and instead of relying on surveys [12, 13, 61], interviews [33, 36, 66], or focus groups [12, 36],  
198 we explore coping strategies through participatory design methods and design work undertaken  
199 by autistic adults themselves.

## 200 2.4 Participatory design with autistic adults

202 Existing participatory design work with autistic people has mostly involved children, adolescents  
203 and students [21, 44, 51]. There are substantially fewer examples of participatory design work with  
204 autistic adults. For instance, a recent literature review on the subject identified only 7 relevant  
205 papers [44].

206 In addition, much of this work has focused on developing assistive technologies that address the  
207 difficulties, challenges and deficits typically associated with ASD [58]. These have included gamified  
208 mobile applications to boost physical activity [31]; assistive robots [2]; technologies for emotional  
209 expression [23]; identification of sensory-appropriate locations [51]; and anxiety management  
210 tools [55]. Outside assistive technologies, the ASCmeI.T. project deployed a mobile application to  
211 collect ideas from the autistic community about what technologies they would like to see developed  
212 [22, 50].

213 As can be observed from the examples above, participatory design with autistic adults has been  
214 mostly concerned with the production of new technologies. There is a remarkable gap in assessing  
215 the suitability of existing, mainstream digital tools for this population. This applies to systems and  
216 platforms that have become essential for everyday life, such as financial technologies, government  
217 services, and social media. Regarding the latter, the first participatory design project with autistic  
218 adults was reported on in 2023 [4]. Our paper builds upon recent CSCW and HCI scholarship on  
219 autistic people and social media (e.g. [49, 63]), and progresses incipient participatory work on how  
220 the design of existing social media platforms interacts with autistic sensitivities and preferences.

## 221 3 Methods

223 In collaboration with Autistica, a UK autism charity, we recruited 20 adults with an autism diag-  
224 nosis, no history of intellectual difficulties, and experience using different social media platforms  
225 such as Facebook, Twitter<sup>1</sup>, Instagram, LinkedIn, Discord and reddit. Although participants' life  
226 circumstances varied, none of them reported complex needs. Ages ranged between 20 and 60  
227 years old. 9 participants identified as female, 4 identified as male, and 6 identified as non-binary  
228 or agender, with 1 participant choosing not to disclose their gender. The study received ethical  
229 approval from the lead authors' institution. Informed consent was obtained from all participants,  
230 who were compensated at the public involvement rate recommended by the NIHR Centre for  
231 Engagement and Dissemination [20].

232 Following Milton's recommendations [45], our research team included an autistic scholar, and we  
233 partnered with autistic collaborators through participatory design methods. Our autistic colleague  
234 was a standard member of the research team, and was core to all aspects of the research work,  
235 including liaising with participants, identifying required accommodations, facilitating participatory  
236 activities, data analysis and writing of results. Her contribution was particularly valuable in the  
237 preparation of the design activities and materials.

238 We organised 4 participatory design workshops broken down into 3 sessions. The 20 participants  
239 were split into 4 groups of 5 people which, as far as possible, remained unchanged across all 3  
240 sessions. Overall, we ran a total of 12 2-hour sessions with participants (3 sessions per group).  
241 Due to cancellations and schedule changes, each session had between 3 and 6 attendees plus  
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243 <sup>1</sup>Since our research took place, Twitter has been renamed and is now called "X". In this paper, we still use "Twitter" to refer  
244 to the social media platform to better reflect the wording and experiences of our participants.

246 3 facilitators, including the autistic scholar. Sessions took place remotely, since this was our  
247 participants' preferred mode of interaction. Autistic people can experience anxiety and sensory  
248 discomfort in social situations and unfamiliar physical environments [51]. Doing research remotely  
249 allowed them to engage in the activities from the safety and comfort of a familiar location. To  
250 facilitate the process, we used a video conference platform (Zoom) in combination with a web-based  
251 digital whiteboard (Miro). Participants were invited to express themselves by talking or writing via  
252 the chat, whichever felt most comfortable. They were also free to switch on / off their webcams at  
253 will.

254 The researchers developed custom materials for each of the sessions with both a digital and a  
255 physical instantiation. The digital version of the materials was displayed on the digital whiteboard.  
256 The physical version of the materials was printed on cardboard and posted to participants ahead  
257 of each session. Participants were invited to use whichever version of the materials (physical or  
258 digital) worked best for them. They were also encouraged to display the physical materials within  
259 their own space, and to keep them until the end of the third session.

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### 3.1 Participatory design sessions

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The workshops followed a process that moved participants from a descriptive mindset (session 1), into a reflective one (session 2), and finally into a making phase (session 3). Session 1 encouraged participants to describe their personal social media experiences through a data immersion activity based on the “evidence safari”, a groupwork method for engaging, interrogating and discussing curated research data [18]. The researchers selected a subset of data about autistic adults' social media use from a prior phase of the [Autistic Adults Online](#) research project. Starting from the existing analysis of this data, the research team selected and adapted 5 themes, choosing 4 representative examples per theme from the data corpus. These data examples were developed into evidence cards consisting of an image and a brief explanatory statement. Each theme included 4 evidence cards, followed by a questions card with 4 prompts to guide the theme review. To accommodate session time constraints, we assigned 2 of the 5 themes to each group for review, making sure that each theme was reviewed by at least one group.

Session 2 invited participants to reflect on their social media practices. It did so through a set of 6 “questionable concepts”, provocative design proposals purposefully assembled to motivate creative critique [64]. The autistic author's contribution was essential in the development of these concepts, where we had to strike a fine balance between humour, ridicule, outrage and inspiration. Each questionable concept consisted of an explanatory card, and an interactive prototype developed with a design tool (Figma). All 6 explanatory cards are available in a public Git repository<sup>2</sup>. Ahead of session 2, participants were asked to choose a personal anecdote about their own social media use; then review the “questionable concepts” and consider whether any of them applied to their anecdote. During the session, each participant narrated their personal anecdote, identified their selected questionable concept and explained the rationale behind their choice. Each participant's contribution was followed by questions and a brief discussion.

Session 3 asked participants to imagine features for a brand-new social media platform, using a design card-based activity [39] to support the creative process. We chose design cards because they have been successfully used in the past for participatory design purposes with autistic adults [2, 21]. The design cards were loosely based on the inspiration cards workshop [24]. They included 3 colour-coded types of cards: action cards (blue), entity cards (orange) and blank cards (white). Action cards represented things users can do on social media (e.g. send or delete). Entity cards represented objects users can manipulate on social media (e.g. posts, friends). There were 17 action

<sup>2</sup>[https://github.com/autisticadultsonline/autisticadultsonline/tree/main/workshop2\\_questionable\\_concepts](https://github.com/autisticadultsonline/autisticadultsonline/tree/main/workshop2_questionable_concepts)

295 cards and 17 entity cards. The list of actions and entities was a combination of existing items from  
296 social media platforms (e.g. send, search, emojis, hashtags), and items that surfaced during prior  
297 sessions (e.g. preview, read aloud, rudeness, different views). We also provided blank cards that  
298 allowed participants to add their own actions and entities. The design cards are available in a public  
299 Git repository<sup>3</sup>. During the session, participants engaged in 3 rounds of feature-making. Rounds  
300 started with 10 minutes of individual work, during which participants envisioned and composed  
301 their features using the design cards. After the 10 minutes, each participant explained their feature  
302 and answered questions from the group. Each round of feature-making was followed by a short  
303 break. Of the 16 participants who attended session 3, all but 2 (P9 and P10) used the design cards as  
304 intended by the researchers. P9 and P10 did create features as well, albeit more abstract and less  
305 formed than the features developed by the other participants. These differences were substantial  
306 enough to consider them outliers, so the researchers decided to exclude them from analysis. Overall,  
307 14 participants designed a total of 38 social media features.

### 309 3.2 Data analysis

310 All 12 sessions were audio recorded and transcribed. The data corpus also included all comments  
311 on the digital whiteboards and the chat logs from all sessions. We carried out reflexive thematic  
312 analysis [8–10] on this material. The first author engaged in a first round of inductive coding and  
313 discussed the outcome with all authors. We generated two initial themes at that early stage: one  
314 about stressors participants had to contend with while using social media; and a second one about  
315 coping strategies participants deployed to handle those stressors. Using those initial themes as a  
316 guide, the first author carried out a second round of inductive coding. During that second round, the  
317 first author aimed to identify a more exhaustive and granular list of stressors and coping strategies.  
318 The second round of coding also paid particular attention to 1) how existing features in social media  
319 platforms interacted with stressors and coping strategies; 2) how challenges and coping strategies  
320 connected to each other; and 3) how the participants' features created during session 3 related to  
321 those stressors and coping strategies. The outcome of the second round of coding was once more  
322 discussed and reviewed by all authors. The process culminated with mapping each designed feature  
323 to the relevant stressors and coping strategies, with most features linked to one or more stressors  
324 and coping strategies (see table 1 in Appendix A).

## 326 4 Findings

327 To handle the stressors experienced when using social media, our participants deployed several ways  
328 of coping: 1) withdrawal, 2) economising energy, 3) audience management, 4) conflict avoidance,  
329 5) explicitation, 6) learning from / with others, and 7) self-management. We explain each of these  
330 ways of coping in the sections below, with examples of how our participants' social media features  
331 supported their coping strategies.

332 During the presentation of our findings, we refer to participants and features through a unique  
333 identifier (P# and F# respectively). For each participant quote, we also indicate the source material  
334 ('Chat' for the chat logs, 'DW' for the digital whiteboard, and no source for the design session  
335 transcripts); the session number (S1, S2 or S3); and the participant group (G1, G2, G3 or G4). Partic-  
336 ipants were not required to identify themselves when adding comments to the digital whiteboards,  
337 although some of them did so voluntarily. We have respected participants' preferences, therefore  
338 some whiteboard quotes do not include a participant ID.

341  
342 <sup>3</sup>[https://github.com/autisticadultsonline/autisticadultsonline/tree/main/workshop3\\_design\\_cards](https://github.com/autisticadultsonline/autisticadultsonline/tree/main/workshop3_design_cards)

#### 4.1 Withdrawal

The withdrawal coping strategy consisted on removing oneself either from a social media platform entirely (e.g. P19 stopping to use Facebook), or from specific interactions within it (e.g. P2 no longer following autism-related content on Twitter). Withdrawal was often partial and temporary, with participants returning for specific purposes (e.g. for professional reasons in the case of P8), or alternating phases of withdrawal and engagement (e.g. P5).

Withdrawal was a strategy to manage the negative impact of irrelevant and / or hateful social media content. For instance, P16 would deal with “*really outrageous*” content on Twitter by putting their “*phone down and go[ing] for a walk*” (P16, S1-G4). Withdrawal was also a way to cope with the sensory overload derived from excessive amounts of content, as exemplified by P5: “*I used to be part of some autistic women’s groups on Facebook, which I did find valuable for sort of shared experience and things. But I did leave them or unfollow them in the end, because there’d be quite a lot of posts, and it could get a bit overwhelming*” (P5, S1-G1). Finally, P8 illustrated how withdrawal could help tackle the compulsion to use and engage on social media. She found herself enjoying TikTok a tad too much, so she decided it would be prudent to stay away from it altogether:

TikTok, I know for a fact is going to be dangerous for me. (...) I love the fast-form nature of it. But because it’s all video: whoa, boom! Two hours of your life gone. And so I’ve made a choice to stop engaging with it, because I recognise the hallmarks of getting addicted to social media again, and I don’t ever want to be back in that place. (P8, S2-G2)

Three of our participants’ imagined features attempted to enhance the withdrawal strategy: F6, F13 and F29. F13 by P7 supported withdrawal as a means to tackle sensory overload. It provided the ability to remove certain types of content from one’s social media feed for a user-specified period of time. Examples of content to filter out included “*different views*”, “*particular hashtags*”, “*tense arguments*” and “*everything from strangers*” (P7, S3-G2). While discussing the feature, P8 explained she would use it to avoid “*people’s food pictures*” (P8, S3-G2), which gave her nausea and made her feel sick.

F29 by P17 supported withdrawal as a means to tackle the compulsion to use and engage on social media. The feature suggested an ‘out of office’ setting similar to the one available in email clients:

it’s like an out of office feature (...) I’ll post something or I respond to somebody, and I’m not in the right mental frame straight off to receive all the replies. Then it would be quite nice to put a delay on it. Let’s say, okay, I’ll go away and meditate for half an hour and maybe I’d be better off and I can deal with it all [when I] come back. (P17, S3-G4)

This functionality was not only a means to ringfence time in order to prepare oneself for the upcoming content. It was also a way to escape the compulsion to continuously check for reactions and replies: “*otherwise it’s like it keeps nagging me: oh, has somebody replied? Shall I check? If I know I’ve got a two-hour window [when] I’m definitely not going to see anything, then I can walk away probably calmer*” (P17, S3-G4). Fundamental to this feature was its public-facing nature, which created awareness and gave visibility to temporary, voluntary withdrawal: “*I would like other people to see that I actually can’t see the response at the moment ... Sort of like this: I am not available at the moment but I will reply on my return*” (P17, S3-G4).

#### 4.2 Economising energy

Our participants showed preference for social media interactions that required low amounts of effort. This included pre-packaged interactions [11] such as ‘likes’, Facebook ‘reactions’, and tagging

393 other users: *“my friends and I, we are really efficient. We don’t send texts with lots of intro. We just*  
 394 *tag people in a comment, no other action required”* (P8, S1-G2). Low-effort interactions also included  
 395 less laborious forms of user-generated content, such as sharing other people’s posts on Facebook,  
 396 retweeting and quote-tweeting on Twitter, as well as replying or commenting on existing threads.  
 397 As one of our participants wrote: *“Replying is an easier way to engage in conversation”* (DW-G4).

398 Our participants described a spectrum of effort in social media interactions, with canned responses  
 399 such as emojis on the effortless side of the spectrum, starting brand new threads on the effort-full  
 400 side of the spectrum, and commenting somewhere in between. Commenting required more effort  
 401 than liking, reacting and other forms of canned responses. Posting original content required more  
 402 effort than commenting. P7 explained: *“I actually find it quite difficult (...) starting a thread myself*  
 403 *(...) I find it much easier to engage in threads that are already out there on topics related to my special*  
 404 *interests and then comment on those”* (P7, S2-G2).

405 Low-effort interactions appeared as a coping strategy to reduce sensory overload and the effort of  
 406 conveying and interpreting meaning. Our participants worked hard to ensure they communicated  
 407 what they wanted to say in order to avoid misunderstandings. This intense effort resulted in draining  
 408 and tiresome social media engagements. Low-effort interactions were a way of economising and  
 409 managing the limited amounts of personal energy our participants could afford to spend on social  
 410 media.

411 However, this way of economising energy was not without problems. Although pre-packaged  
 412 interactions were certainly useful and appreciated, participants raised the issue of debased commu-  
 413 nication quality. There was a perception that the lower effort required undermined the value of  
 414 the communicative act. This was mentioned in relation to emojis, which P4 called *“lazy language”*  
 415 (P4, S1-G1): *“sometimes if someone sends me just an emoji (...) I feel a bit almost kind of fobbed off.*  
 416 *Like: well, you can’t be bothered to respond to me properly. So when I send one I feel like it’s a bit*  
 417 *rude”* (P4, S1-G1). The issue of debased communication quality was also raised by P5 about the  
 418 ‘like’ interaction.

419 Four participant features addressed the economising energy strategy: F2, F15, F20 and F33. All  
 420 four moved away from pre-packaged interactions, proposing instead supportive tools that did not  
 421 impact communication quality. F2 by P1 consisted of an audio preview, an utility that would read  
 422 aloud your own social media content before posting it: *“it might be a good idea to have a feature*  
 423 *that reads back your own posts to you if you want it read, so that you can actually hear how it sounds*  
 424 *when it’s spoken”* (P1, S3-G1). Listening to her own content would help P1 verify that she is actually  
 425 saying what she wants to say:

426  
 427 [W]ith a lot of autistic people, (...) sometimes we’re trying to communicate one  
 428 thing, but that’s not quite how it sounds when it’s said aloud, and sometimes just  
 429 having it said aloud to you may change your mind about what you want to post or  
 430 how it comes across (...) it might get us to, you know, rethink (...) what we’re going  
 431 to put and change it if we see fit. (P1, S3-G1)

432  
 433 The audio preview would reduce the effort required to convey meaning, while increasing P1’s  
 434 confidence in her communications: *“also not have to worry about how it (...) comes across, because*  
 435 *if (...) you hear it and then it sounds fine then you know. You know you’re all good and you can post*  
 436 *confidently without worrying that you’re not communicating what you want to communicate”* (P1,  
 437 S3-G1).

438 F15, F20 and F33 proposed the automation of posting. For instance, F33 by P19 suggested the  
 439 ability to create a *“reservoir”* (P19, S3-G4) of content and schedule publication from it at certain  
 440 intervals:

441

I can't always be bothered (...) to make a post every single day. So this made me think that it would be quite handy if I could define a folder that would have nothing but content (...) that would be appropriate for my Instagram. So then it would just keep posting stuff from this little reservoir. (P19, S3-G4)

The ability to store excess content and arrange its automated publication would reduce the effort involved in engaging with social media regularly and frequently, thus better accommodating the sensory sensibilities of autistic people and helping address sensory overload.

### 4.3 Audience management

Participants deployed different approaches to manage the ambiguity surrounding their social media audience. We have grouped those approaches under the umbrella term of "audience management", which includes four distinct ways of coping: 1) interacting within closed and moderated groups (management through segmentation); 2) carefully scoping and delimiting platform use (management through constrained use per platform); 3) researching potential connections (management through vetting); and 4) taking advantage of impermanent content features (management through ephemerality).

Social media groups have been found to support autistic adults' interest-based approach to sociality (e.g. [49]), which refers to autistic adults seeking contact with those who share their interests, hobbies and experiences. Thematic groups in social media platforms help autistic adults find and join those communities of interest. Our participants made extensive use of Facebook groups and subject-structured platforms such as reddit, Discord and Quora. Groups also helped with exercising control over one's social media audience by segmenting it, enclosing it or reducing its size. Our participants often engaged with closed, moderated groups, which to them felt safer: *"I can be in a music group, and it's really well moderated. Then yes, I will let a bit more of that into my life, and I'm really enjoying it because I know the privacy's there and I know the control is there"* (P2, S2-G1). Participants also gravitated towards messaging platforms such as WhatsApp and Messenger, as well as Discord, in order to create and interact with closed groups: *"my (...) main friend group they also seem to be autistic. And we use predominantly Facebook Messenger, but more over the last couple years Discord as well"* (P13, S1-G4).

A second approach to tackle audience uncertainty was scoping and delimiting use per platform. Each social media platform would be assigned to a specific set of connections, often belonging to different spheres of participants' lives. For example, P7 kept *"Twitter separate from"* their *"real social circles"* (P7, DW-G2). P9 explained that there are things he would not post on Facebook *"because my older family will get upset about it"*. He reserved Facebook to interact with family members, while communicating with friends *"through a different platform (...) or even using private chat groups"* (P9, S2-G3). Others, like P20 and P6, set rules where certain audiences were combined with specific principles for engagement.

A third way of managing one's social media audience was researching potential new connections or followers. This practice was deployed by P5, P12 and P14. P5 kept a rather popular Instagram account that she used to promote her design and craft work. She had gotten into the habit of reviewing new followers to verify they were genuine, and had developed a good sense of what are the indicators of dubious users. P12 vetted those who wanted to join the painting Facebook group she moderated: *"I make sure I look at all their profiles. (...) I look to see whether they've been banned from any of the groups. And also what sort of images they've got so that I can look through all their art, what they posted, to see whether it's actually appropriate or not."* (P12, S2-G3).

491 Finally, some participants took advantage of ephemeral content to alleviate audience-related  
 492 anxieties about privacy and the permanence of digital records. For example, P8 appreciated Club-  
 493 house because she did not need to “worry about people capturing your comments”, and for what she  
 494 perceived as the absence of a “perm[ament] record of everything you say” (P8, S1-G2). P4 and P5  
 495 used Instagram and Facebook stories because they felt “a bit less scarily permanent, because they’re  
 496 up for a bit and then they disappear” (P5, S3-G1).

497 Ten of our participants’ features related to audience management: F1, F5, F7, F9, F19, F23, F26,  
 498 F27, F28 and F30. For instance, F19 proposed an interest-based people search, as a way of connecting  
 499 with others on the basis of common interests, rather than personal relationships. F5 requested the  
 500 ability to “delete my posts, reactions or replies to other people after a set time interval” (P5, S3-G1).  
 501 Ephemeral content helped address concerns about privacy, and about unexpected consequences of  
 502 old posts, “making it easier to manage that feeling that I’ve basically got years and years of social  
 503 media history all over the internet” (P5, S3-G1).

504 Meanwhile, F7, F23, F28 and F30 facilitated the assessment of new connections, in response to  
 505 spurious or fraudulent contact requests, and potentially unsavoury interactions with unknown  
 506 social media users. These features would help participants learn more about prospective connections,  
 507 enabling a carefully curated and more informed expansion of their networks. The focus on these  
 508 features was not on finding out personal information, but mostly on people’s views about particular  
 509 subjects as expressed in the content they posted. For instance, in F28, P16 wanted to search for  
 510 keywords or themes people had posted about or reacted to in their social media timelines, “to kind  
 511 of get the measure of them and (...) what their values are (...) whether they seemed like a fairly decent  
 512 person but actually they’ve said something a few months ago that I missed that was really horrible”  
 513 (P16, S3-G4).

514

515

#### 4.4 Conflict avoidance

516 Most participants avoided getting embroiled in any kind of controversy or argument on social media.  
 517 Exposure to content perceived as confrontational, hateful, extreme or toxic had strong negative  
 518 effects on participants’ well-being. For instance, P4 tried “not to get involved in any arguments”  
 519 because she found them “too stressful” (P4, S1-G1). P11 was never “openly confrontational” (P11,  
 520 DW-G3) because he found it “too exhausting” (P11, S1-G3). P19 avoided “a lot of conflict sort of  
 521 stuff on all social media things” because “[i]t can be very upsetting. Sometimes it depresses me” (P19,  
 522 S1-G3). Conflict avoidance encompasses three distinct ways of coping: 1) avoidance through not  
 523 posting, 2) avoidance through positive content, and 3) avoidance through platform features.

524 The number one approach to avoid conflict was refraining from posting and commenting  
 525 altogether. For instance, P9 wrote: “tend not to post to avoid conflict or misunderstanding” (P9,  
 526 DW-G2). P4 opted for holding back: “sometimes I see (...) political viewpoints or to do with autism  
 527 and I think well, that’s annoying and I don’t agree with that. Or yes, I agree with that. But I hold  
 528 back on commenting sometimes, because it’s just too tiring” (P4, S1-G1). P19 explained: “sometimes  
 529 I want to make a comment but I will avoid it because I’m scared of adding more confusion into the  
 530 mix, or getting caught up in the controversy myself” (P19, S1-G3). P20 was also put off by polarised  
 531 positions.

532 A second way of avoiding conflict was generating only positive content. P12 adopted this  
 533 approach in the Facebook group she moderated: “I run a Facebook art group, so always try to  
 534 comment positively to engage with the group and encourage them. If I can’t say something positive,  
 535 then I might just do ‘like’” (P12, DW-G3). This participant “never put anything negative at all”  
 536 (P12, S1-G3). P19 did a similar thing with his comments on reddit. He limited himself to “positive  
 537 affirmations, congratulations and admiration” (P19, DW-G3). P6 liked everything on Instagram; P11  
 538 replied “to send supportive comments” (P11, DW-G3); and P20 always commented “in affirmation”  
 539

539

540 on Facebook: “like ‘that’s nice’, or ‘glad you enjoyed that’ or ‘that looks really good’” (P20, S1-G4).  
 541 Finally, participants such as P11, P4, P6, P19, P2, and P4 made good use of platform features that  
 542 supported their conflict avoidance strategy, such as muting, blocking, downvoting and reporting  
 543 content.

544 Seven participant features related to the conflict avoidance way of coping: F2, F8, F10, F16, F28,  
 545 F35 and F37. Several of them (e.g. F8, F10 and F28) relied on muting, blocking or removing offending  
 546 posts. For example, F8 would allow users to block inappropriate language and images coming  
 547 from total strangers. The exception was F35 by P19, which tackled the problem of toxic content  
 548 by nurturing positive behaviour. P19 drew inspiration from video game design to come up with a  
 549 scheme that would reward exemplary social media netizens:

550 Let’s say you were doing loads of posts, (...) that you were getting good reactions,  
 551 good replies. That other people were liking the things that you were saying (...), then  
 552 you would earn a special banner around your profile or something. (...) you would be  
 553 a super post model netizen, and that would give you (...) good social standing in the  
 554 social media setting, and this would also encourage people to be nicer, because they  
 555 would be rewarded for their niceties and if they were unpleasant, well, they wouldn’t  
 556 get as much attention, they wouldn’t have the special banners. (P19, S3-G4).

557 P19 conceived of this feature as a way to address the root problem of hostility and aggression in  
 558 social media: “it would just be (...) a fun way to encourage (...) good behaviour” (P19, S3-G4). The  
 559 feature was named collaboratively between P19 and P18 who, after some discussion, settled on  
 560 “Don’t be a dick. Win prizes” (S3-G4).  
 561

#### 562 4.5 Explication

563 Explication [6] is a communication style by which autistic people articulate social etiquette  
 564 and interaction nuances that are usually left unspoken by non-autistics. Following explication  
 565 practices, participants added content and expressions to their social media posts with the sole  
 566 purpose of clarifying or qualifying their tone and intention. They did so as part of their efforts  
 567 to avoid confusion and misunderstandings: “I will state my intent if I’m worried my tone could be  
 568 misinterpreted, or if I’m particularly emotional at the time and so can’t curate my words so carefully”  
 569 (DW-G3). P1, P8, P17 and P20 connected this behaviour with negative communication experiences  
 570 outside social media, either face-to-face or through other digital channels:  
 571

572 I think that on social media, it can be helpful for me sometimes to be able to convey  
 573 what I actually mean. Like I can put a laughing face on something that is supposed  
 574 to be sarcastic so that it’s not taken the wrong way, because I struggle with that  
 575 in real life. I have a real problem with tone, and people understanding my tone (...)  
 576 sometimes (...) I think I’ve come across a bit abrupt. (P1, S1-G1)

577 In fact, participants often qualified and clarified their interventions during the participatory  
 578 design sessions as well, using expressions such as “I don’t know how to phrase this not to sound  
 579 awful” (P20, S1-G4), “I’m gonna totally misquote now because I’ve probably misremembered what was  
 580 said” (P16, S1-G4), “I don’t know if it’s kind of relevant to your question but ...” (P4, S2-G1) or “Sorry I  
 581 was blunt” (P18, S2-G4). This suggests that qualifying and clarifying tone and intention on social  
 582 media may be a direct transposition of a coping strategy used in other spheres of communication.

583 By far the most common way of qualifying and clarifying tone and intentions on social media  
 584 was using emojis which, in spite of their challenges [4], were generally appreciated for this purpose:  
 585 “I use emojis quite a lot. The heart emoji is my friend. Because (...) if in doubt I’ll just put that at the end  
 586 of the sentence to kind of just soften my tone. It just helps indicate that I’m not trying to be edgy (...)  
 587 just makes things a bit more chill.” (P15, S1-G3). Some participants also mentioned complementary  
 588

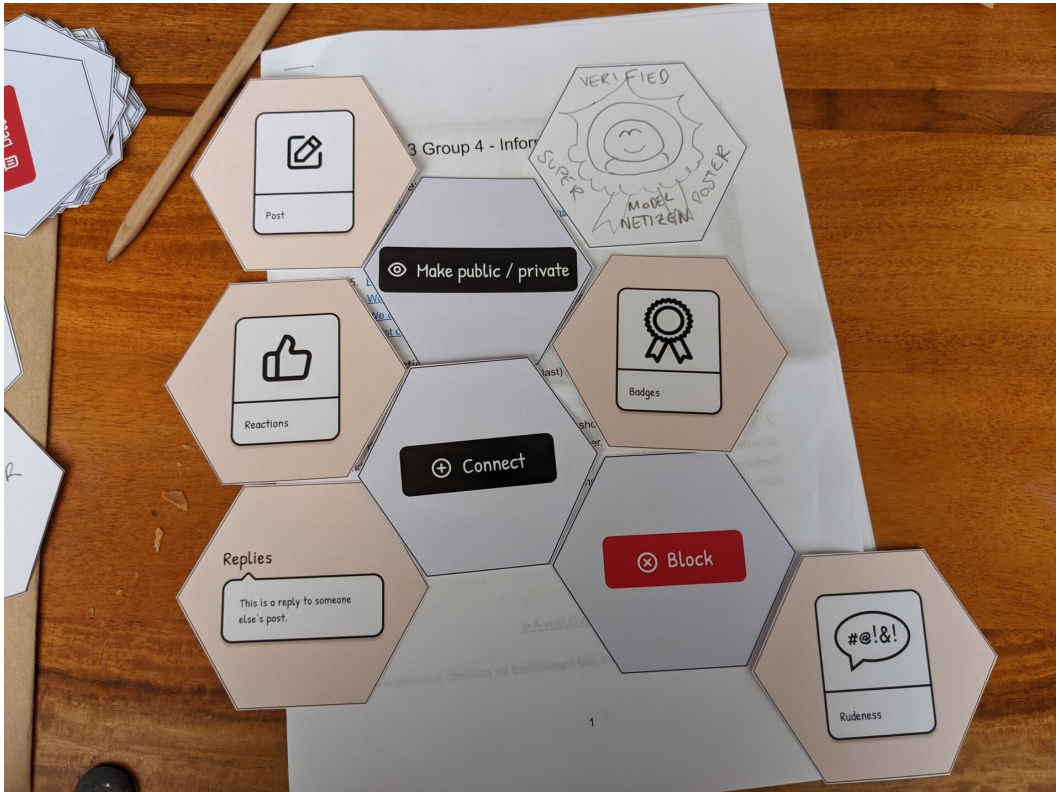


Fig. 1. P19's "Don't be a dick. Win prizes" feature (F35) as composed with the printed design cards.

strategies such as using all capital letters and exclamation marks (P12), writing slash sarcasm in alternating case at the end of a sentence (P15, P19), or expressions like: "I'm joking, by the way" (P20).

Five of our participants' features related to explicitation (F12, F14, F18, F22 and F36), with all five attempting to support the normative, non-autistic use of emojis and hashtags. F12 by P7 was called "What will this mean?". It was a way to explore the different meanings resulting from combining the same text with different emojis and hashtags:

I would like to be able to preview what I'm posting or commenting will mean, particularly with emojis, as they're not (...) always the clearest things, and I think using different ones can change the meaning of your post. (...) I'd (...) like to be able to try out a few different ones, and then (...) get a bit of an explanation (...) back at me saying: (...) this is what it would mean if you used this emoji or this hashtag. This is how other people will interpret it. (P7, S3-G2)

In a similar vein, F14 by P8 enhanced predictive text with emoji suggestions, and F36 by P20 would assist emoji use by explaining their meaning. By using platform-provided features like emojis and hashtags in what was perceived as the normative way (i.e. the non-autistic way), participants would remove the need to more explicitly articulate their meaning and intent, and could engage in implicit communicative practices on an equal footing.

#### 4.6 Learning from / with others

Participants worked with others to convey and interpret meaning, and to express emotional intent on social media. They learnt from others indirectly by observing and reproducing what other people did, which has been called “Learning by Lurking” [26]. But participants also learnt with others directly, by collaborating with people they trusted. Therefore, learning from / with others encompasses three distinct ways of coping: 1) learning from others through observing, 2) learning from others through mimicking, and 3) learning with others.

Observing and reproducing the behaviour of others on social media was a fundamental source of information in terms of discovering and unravelling mainstream interactional norms. This was often done when using specific social media features such as emojis: *“I definitely copy the emojis that people around me use, and also copy the circumstances that they use them in”* (DW-G1); and hashtags: *“I only use hashtags if it’s very clear what types of posts typically use that hashtag. I probably need to see over 100 similar posts with one hashtag before I’ll be able to use it”* (P7, DW-G2).

Participants also collaborated closely with others with whom they felt comfortable experimenting and exploring interactional norms. For example, P9 tended *“to use emojis with close friends in closed groups”*. P7 did a similar thing before incorporating new features or items into more public interactions:

I need to figure out how they work before I use them. So, with emojis and GIFs, I tend to select from a very small group that I know the meaning of, and I know that they (...) won’t be misinterpreted. And I tend to use them with close friends first so that, if I’ve misused them or whatever (...), my friends are pointing them up before I then feel comfortable using them in public spaces. (P7, S1-G2)

In another example, P3 used her partner as a sounding board when striving to convey meaning: *“I normally spend ages and ages obsessing over a reply to send to someone online that other people can see (...) And I go ask my girlfriend multiple times like: ‘is that okay to post?’, even if I know that it is, I think, just for reassurance”* (P3, S2-G1).

One imagined feature (F17), created by P12, sought to support direct collaboration with others. The feature proposed a crowdsourced interpreter, through which one could source opinions and perspectives from trusted others regarding how a post was written. This feedback could then be used to edit the content of the post, or to discard the post altogether. P12 wanted the feature to apply both before and after posting. For the latter, she conceived an option to recall a post. The feature could not only be used for one’s own content, but also to aid interpretation of other people’s content, thus applying to both aspects of sensemaking.

#### 4.7 Self-management

Participants described several initiatives they had undertaken to manage their own behaviour on social media, and to rein in personal patterns of use they found unsettling. These self-management strategies comprised three ways of coping: 1) self-management through caution; 2) self-management through reflection and self-awareness; and 3) self-management through taking action.

Participants spoke about exercising extreme caution when using social media, as a way to manage potential misunderstandings or confrontation:

I’m not always understanding what I’m doing so I have to be really, really careful (...) because I think I’m coming over wrong or saying the wrong thing in the wrong way, because other people are interpreting it like I’m angry or like I’m shouting at them (...) and I’m not, seriously not, it’s just how I would do it. (P12, S1-G3)

Similarly, P1 spoke about *“being very very careful about what I do say and how I say it, especially if I’m communicating with people who aren’t autistic, because I almost assume that they’re not going*

687 *to understand me*" (P1, S1-G1). P19 identified himself as a "lurker", which in his case was also an  
 688 expression of caution: *"I would more classify myself (...) as a lurker. So I prefer to just be an observer.*  
 689 *Very rarely do I actually make a comment. I'm very cautious like that"* (P19, S1-G3).

690 Meanwhile, reflection and self-awareness were a strategy to ameliorate the compulsion to use  
 691 social media. P9 had decided to *"step back"* (P9, S1-G2) from these platforms, to *"re-evaluate"* how  
 692 social media could work for him. P16 made a conscious effort to remind herself that people on  
 693 social media *"aren't my friends, because sometimes I can sort of overshare a bit, or say things that*  
 694 *perhaps I should only be saying to friends, and forget that there's these other people that I don't really*  
 695 *know"* (P16, S2-G4).

696 Other participants described taking action to reduce the time they spent on their mobile phones  
 697 in general, and on social media in particular. P2 had decided to stop picking up her phone after  
 698 17:00h, and was trying to limit her time on Facebook to 10 minutes per day. P18 had blocked certain  
 699 websites and disabled all mobile apps at 22:00h in the evening. Most interestingly, as part of her  
 700 participation in our study, P17 had decided to run a self-awareness experiment. She started logging  
 701 the time she spent on social media, and wrote about it in the chat:

702 P17: it really works, like mindfulness. The reason I think it works is because you  
 703 start thinking about it carefully, what am I doing here, what is the purpose I logged  
 704 on today ...

705 Researcher: Do you do this regularly P17?

706 P17: I did it for the purpose of this study

707 Researcher: That's interesting! Were you surprised at all by your log?

708 P17: Went from 2 hours a day to 5-10 minutes a day.

709 (Chat, S2-G4)

710 These reflective and self-management practices contrast sharply with social media platforms'  
 711 drive to maximise time spent and engagement by users. Eleven participant features contributed  
 712 towards self-management in social media use: F3, F4, F10, F11, F15, F20, F24, F25, F31, F33 and F38.  
 713 For instance, F4 tackled the compulsion to spend time on social media through self-awareness and  
 714 by subverting existing platforms' priorities and policies. Created by P4, this feature was named  
 715 "Mental health protector / Self-care timer". It targeted a behaviour the participant called "doom  
 716 scrolling", i.e. the act of spending excessive amounts of time on social media feeds. The feature  
 717 consisted of a prompt that would suggest an alternative activity and act as an invitation to abandon  
 718 the social media application:

719 [S]ometimes (...) if you're in a bad way, you can end up (...) doom scrolling. Maybe  
 720 might be good to sort of have a 'set your own time' and say: you've been on this  
 721 platform now for like an hour and a half. Are you okay? [Laugh] Do you want to go  
 722 for a walk, or go and bake a cake? (P4, S3-G1)

723 This represented a subversion of platforms' existing practices, which seek to maximise time  
 724 spent and user engagement. It was accompanied by an inversion of their algorithms. Rather than  
 725 serving more content of the same kind, the platform would serve the opposite type of content after  
 726 a while: *"as well a way of kind of changing the algorithms. So that the algorithm could see if you were*  
 727 *looking at lots of negative stuff, and instead of giving you more negative stuff, because you're looking*  
 728 *at lots of negative stuff, maybe giving you some bunny rabbits (...) To kind of counteract."* (P4, S3-G1).

729 F3, also by P4, used content filtering to address sensory overload. The feature, called "Activate  
 730 stillness", consisted of an alternative viewing mode for social media feeds that one could turn on  
 731 at will. This mode would remove all sound and moving images, leaving only static images and  
 732 text, thus providing a calmer social media experience. Filtering also appeared in F10, F25 and F38.  
 733 Filters would be applied to avoid uninteresting content, rudeness and posts from complete strangers.  
 734

735

736 Through these features, participants demanded control over the content presented to them by the  
 737 social media platforms, which they could use to support their self-management ways of coping.

738

## 739 5 Discussion

740 Our design collaboration with autistic adults yielded numerous examples of coping instances  
 741 deployed in response to specific stressors associated with social media use. We have classified  
 742 those instances into a set of coping strategies that demonstrate the rich, varied and nuanced nature  
 743 of our participants' coping behaviour. That behaviour displays commonalities with previously  
 744 identified coping strategies in the context of social media. For instance, like participants from earlier  
 745 studies, our own deployed a cautious attitude when posting [36]; they segmented their audience  
 746 across platforms [60]; and deleted or reported offensive and harmful content [36]. However, our  
 747 participants' coping strategies also include singular approaches and responses to stressors. In what  
 748 follows, we examine the unique aspects of autistic coping in the context of social media, we identify  
 749 areas where they challenge prior conclusions about the nature of autistic coping, and we advocate  
 750 the value of coping behaviour as design material.

751

### 752 5.1 Particularities of autistic coping

753 The coping strategies presented in our findings include unique approaches and responses to stressors.  
 754 Explicitation and economising energy seem particular to our autistic participants. Explicitation  
 755 refers to the autistic practice of articulating elements of communication that are often left implicit by  
 756 non-autistic interlocutors [6]. In non-autistic communication, desires and intentions often remain  
 757 unspoken, expressed instead through other means (e.g. via tone, gestures and facial expressions in  
 758 real life, or emojis in digital platforms). This generates ambiguities that are usually disentangled  
 759 through command of social rules, etiquette and conventions [6]. Our autistic participants reported  
 760 to struggle with both interpreting and expressing those implicit meanings. To work around this  
 761 challenge, they explicitly stated their intention when posting on social media, mostly through using  
 762 emojis. This introduced additional problems, since it required understanding the conventional  
 763 meaning of specific emoji symbols. Our participants' features addressed this latter challenge, by  
 764 envisioning tools that would support the "correct" (i.e. non-autistic) use of emojis, in order to  
 765 guarantee that their stated intent accurately conveyed their actual intent. Through features that  
 766 suggested appropriate emojis (F14), explained their meaning (F36), or enabled experimentation to  
 767 find the most suitable one (F12), participants envisioned technology helping them better express  
 768 their intent in ways that match non-autistic social media expression. Stress around the need for  
 769 explicitation was often connected with negative past experience, both communicating through  
 770 social media and in real life. The explicitation coping strategy in the context of social media  
 771 thus reflects the profound impact that non-autistic intolerance towards unfamiliarity with social  
 772 etiquette has on autistic people [6].

773

774 Economising energy refers to strategies and actions that aim to minimise the effort required to  
 775 engage on social media. Economising energy manifested in the use of pre-packaged interactions  
 776 such as reactions or tagging, as well as in a preference for commenting on existing threads, rather  
 777 than starting new ones. Autistic adults being partial to these low-effort interactions has been  
 778 identified in previous studies (e.g [11, 34, 69]). In [34], the number of Twitter replies was twice  
 779 the number of original Twitter posts. According to [11, p. 429], pre-packaged social interactions  
 780 "were helpful in overcoming the hurdles to initiating contact". In our study, pre-packaged interactions  
 781 provided a means to manage sensory overload and the effort of expressing meaning.

782 The need to economise energy may derive from the high levels of stress autistic people experience  
 783 in day-to-day life [46, 47], but also from the acute impact of common social media stressors on  
 784 autistic people, such as the exposure to negative and harmful content, the need to convey and

784

785 interpret meaning, and never-ending content feeds [4]. The combined effect of these stressors  
786 pushes autistic people to carefully regulate the amount of time and energy they dedicate to social  
787 media. Features like the automation of posting (F15, F20, F33) assisted effort management, by  
788 allowing participants to evenly distribute their own content, rather than having to post it at  
789 creation time. Economising energy was also enhanced through features that supported content  
790 creation and expression (F2).

791 Other strategies, such as avoiding conflict and learning from / with others, present differences  
792 in scale and nature. Lampinen et al.'s participants, like ours, refrained from posting as a way of  
793 avoiding conflict [36]. To implement this strategy effectively, they relied upon shared conventions  
794 or rules of thumb. Yet it is precisely those implicit, shared conventions that our autistic participants  
795 found hard to unravel. As a result, a popular coping strategy amongst social media users requires  
796 additional effort for autistic people. This additional effort in turn contributes to the need for the  
797 economising energy strategy, as a way to manage exceedingly strenuous and taxing social media  
798 interactions.

799 Finally, although all social media users are likely to observe and adopt common practices, and  
800 to seek the opinion of others in relation to social media interactions, our participants seemed  
801 remarkably aware of such behaviour. They precisely recalled specific purposes (e.g. using emojis,  
802 applying hashtags) and situations when they learnt from others, both directly and indirectly. This  
803 acute self-awareness may be related to the fact that autistic camouflaging involves similar strategies,  
804 such as acquiring social skills from others and popular media, copying body language and facial  
805 expressions, and seeking support to socialise [27]. When learning from / with others in the context  
806 of social media, our autistic participants were simply deploying their existing skills and practices  
807 to serve them in a different context.

## 808 5.2 Challenging prior conclusions about autistic coping

810 Literature on autistic coping has reported a preference for “disengagement”, “escape” or “avoidance”  
811 strategies [47], which involve attempts to draw away from the stressful situation [57]. Disengage-  
812 ment coping is often portrayed as “maladaptive” and connected to poor mental health outcomes,  
813 such as higher levels of depression and anxiety, and reduced well-being [47]. However, it is also  
814 possible that disengagement coping strategies have distinct advantages for autistic people, by  
815 allowing them to temporarily retreat and recover, and by blocking further sensory stimulation  
816 and thus helping avoid overload. Studies with autistic children and adolescents have associated  
817 avoidant coping strategies with fewer depressive symptoms [46]; and the positive role of avoidance  
818 coping mechanisms has also been highlighted in dealing with hyperreactivity to sensory stimuli  
819 [41]. Our participants provide a further example, since their social media withdrawal strategies did  
820 appear to be “good news” ways of coping [57]. Their withdrawal was mostly partial, practised as  
821 a form of self-protection, and as a tool to manage sensory overwhelm. These examples question  
822 blanket notions of disengagement coping as negative or counterproductive, and contribute to an  
823 alternative explanation to autistic adults’ preference for this style of coping.

824 Literature on autistic coping has also suggested that autistic traits may restrict autistic adults’  
825 willingness to seek assistance and support from others [25]. However, our participants often reached  
826 out as a way of coping with social media stressors, both indirectly through observation and adoption  
827 of others’ behaviour, and directly by asking for help from trusted others. The former, what we  
828 have called learning from others through observing and mimicking, has been identified as a way of  
829 making sense of sensory differences [41], but also as a common approach in camouflaging [28],  
830 a behaviour with potentially negative implications for autistic people [54]. Autistic people place  
831 high value in understanding social interactions [54]. Camouflaging is perceived as alienating and  
832 coercive precisely because it does not require comprehending the meanings embedded in those  
833

834 interactions [54]. This emphasis on understanding contributes to explain the stress our participants  
835 experienced in relation to conveying and interpreting meaning when using social media; and  
836 the importance they gave to accurately expressing what they wanted to say, and understanding  
837 precisely what was meant. Meanwhile, coping by learning with others challenges stereotypes  
838 about autistic people's unwillingness to request help from others. This coping strategy provides an  
839 example of "reframing" [54], where the ambivalence of social situations is dealt with by autistic  
840 people through approaching others for clarification. This reframing is the opposite of camouflaging,  
841 because it exposes the autistic person's needs and understandings to the non-autistic interlocutor.  
842 According to Schneid and Raz, "reframing" makes autistic perceptions public and therefore has  
843 a legitimising effect [54]. From a "reframing" perspective, when our participants involve trusted  
844 others in the process of making sense of their social media interactions, and when they propose  
845 features to formalise and enable such involvement (F17), they are making a stand for the validity  
846 and genuineness of autistic sensitivities and styles of sociality.

847 These findings underscore the significance of interrelatedness and mutual enabling. These concepts  
848 are central to emerging autism studies literature, as can be appreciated in, for instance,  
849 Anna Stenning's work [59], which emphasises the relational constitution of autistic experience.  
850 The contrast between camouflaging—a socially coerced adaptation that forecloses mutual understanding—  
851 and reframing—wherein autistic individuals explicitly seek clarification and invite  
852 co-construction of meaning—exemplifies a shift toward more dialogical and ethically responsive  
853 modes of interaction. Such acts of reframing constitute a form of mutual enabling, where both  
854 autistic and non-autistic interlocutors participate in shaping communicative environments that  
855 affirm neurodivergent forms of perception and expression. María Lugones' notion of "loving perception"  
856 [40] becomes relevant in this context. It entails an attitude of openness, attentiveness, and  
857 epistemic humility in encountering others' worlds. Lugones' concept of "World-travelling" [40]  
858—the practice of moving across social worlds with a disposition of care—offers a critical lens through  
859 which to interpret our participants' efforts to involve trusted others in navigating the ambivalence  
860 of social media interactions. Rather than interpreting these actions as compensatory, they may  
861 be understood as a form of resistance: as a demand for recognition and shared responsibility in  
862 meaning-making.

### 863 5.3 Ways of coping as a design material

864 The social media features created through this study reveal how our autistic collaborators envision  
865 design supporting and enhancing their existing coping mechanisms. They also illustrate how coping  
866 can serve as inspiration for innovative design work. Coping scholarship has focused on studying  
867 the effectiveness of coping strategies in terms of mental health, life outcomes and overall well-being.  
868 It has also highlighted the importance of uncovering and understanding coping strategies in order  
869 to develop tailored stress management interventions (e.g. [46–48]). We, however, are interested in  
870 the potential of coping strategies as a design material. In addition to expanding our knowledge  
871 on autistic coping, our work demonstrates how the study of coping behaviour can contribute to  
872 technology design. Coping strategies are useful for designers because, like workarounds, they can  
873 be a "source of change" [1, p. 1049] and of "future improvements" [1, p. 1052]. Coping processes  
874 surface existing behaviours and practices that can point to problematic areas (i.e. sources of stress)  
875 for technology users. As with workarounds, coping processes and actions are candidates to be  
876 supported, enhanced, and sometimes discouraged through design [1]. Autistic adults' heightened  
877 need to respond to and manage stress suggests autistic coping as an ideal starting point for  
878 explorations about coping as a design material.

879 We follow on the path of other HCI and CSCW scholars, who have highlighted the usefulness  
880 of studying coping for design purposes (e.g. [13, 66]). For instance, [66] suggested that coping  
881

882

883 mechanisms can pinpoint areas for improvement in social media interfaces, and inform design  
884 guidelines. Our participants' coping strategies and their social media features indeed identify  
885 problematic aspects of the design of social media platforms for autistic people. These include the  
886 lack of control over algorithmic content feeds; the lack of control over the sensory aspects of the  
887 social media experience; the ambiguity, uncertainty and poor visibility surrounding audiences; the  
888 exposure to toxic and confrontational content; and the lack of support and tools for self-management  
889 in use. These areas should be prioritised if social media platforms are to accommodate autistic  
890 people's attention strategies and approach to sociality.

891 Particular attention should be paid to enabling collaborative behaviours in content production.  
892 Prior work has stressed the importance of collaborative, preventive coping strategies in social media  
893 use, and lamented the lack of support for them in existing platforms [12, 36]. The absence of tools  
894 for collaboration erects barriers to explicit negotiation of behavioural boundaries, and pushes users  
895 towards mental coping strategies instead, forcing them to rely on implicit rules of thumb about  
896 what constitutes appropriate behaviour. This push towards relying on implicit social rules may be  
897 particularly damaging for autistic people, for whom neurotypical social conventions may not be  
898 immediately obvious. Features that enable collaborative and explicit negotiation of behaviour, and  
899 therefore support autistic explicitation strategies, are thus critical to better accommodate autistic  
900 users. [36] proposed a "preview space" where content would be posted initially to concerned parties  
901 only, so that boundaries and social etiquette considerations could be negotiated before making  
902 the content visible to a wider audience. The crowdsourced interpreter feature (F17) created by  
903 P12 provides another example of how design could support collaborative and preventive coping  
904 strategies, this one coming from autistic adults themselves. Introducing collaborative tools would  
905 contribute to design that can actively support mutual sense-making, shifting the focus from  
906 individual expression or consumption to co-created understanding between users. Rather than  
907 designing simply for interaction (e.g. commenting, liking), this type of design would foreground the  
908 relational work of meaning-making, i.e. the ways people interpret each other, negotiate ambiguity,  
909 and respond across difference.

910 In prior scholarship, HCI and CSCW researchers, as subject matter experts, have issued design  
911 recommendations based on coping-related findings (e.g. [13, 36]). Our work, however, has taken a  
912 different direction. Here, it is participants themselves who build upon their own coping behaviour  
913 to propose new features for social media platforms. Although coping strategies were not explicitly  
914 presented as such during our design activity, participants distinctively addressed them through  
915 their design work. Their imagined features constitute autistic-led contributions towards design  
916 interventions, hinting at potential new functionality and directions for design. Our participants' de-  
917 sign work thus suggests a new methodological approach that starts by purposefully identifying and  
918 classifying ways of coping, which can then be used as inspiration for subsequent design activities.  
919 We look forward to exploring and applying this approach in areas beyond social media. Schneid and  
920 Raz maintain that emancipatory, participatory research provides a unique opportunity to explore  
921 the limitations of our neurotypical-led scholarship, opening paths for the "neuro-diversification"  
922 of academic disciplines [54]. Similarly, participatory design grounded on autistic coping practices  
923 may offer an opportunity for the neuro-diversification of digital design.

## 924 6 Conclusion

925  
926 In this paper, we have described a collaborative design inquiry about autistic ways of coping in the  
927 context of social media. Through an inductive, bottom-up approach [57], we have identified a set  
928 of social media-related stressors and a set of coping instances, which we have grouped into a set of  
929 distinct ways of coping. We have demonstrated how our participants' design work speaks to their  
930 coping strategies, using some of their social media features as examples. We conclude that the study  
931

of autistic coping practices presents an opportunity for neuro-diversifying the design of technology. In the case of social media, this would entail not simply accommodating autistic sensitivities, but privileging mutual sensemaking. Neuro-diversifying social media would require reinventing it as a site of ethical relations across difference, and not just interaction; as a place where understanding is not presumed, but respectfully co-constructed. This would open space for social media platforms to support deeper recognition across neurotypes, cultures, and communicative worlds.

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## 1118 A Participant features table

1119 Table 1. Participant features mapped to coping strategies and social media stressors.

1118 ID	1119 P#	1120 Title	1121 Description	1122 Coping strategy	1123 Stressor
1124 F1	1125 P1	1126 Having full control over what is public and private on your social media	1127 Better and more granular control over what is public and what remains private on your profile and user-generated content. Emphasis on non-disclosure of autism and self-protection.	Audience management	Audience uncertainty

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F2	P1	Preview features	An audio preview that will read aloud your own posts before you send them. That way you can make sure they sound the way you intended. If they don't, you can edit them or delete them. Participant also mentioned a social media spell checker for dyslexia support.	Conflict avoidance Economising energy	Conveying / interpreting meaning
F3	P4	Activate stillness: calm and still viewing	A mode for your feed that allows you to remove all moving images and sound, leaving only static images and text. Would provide calmer viewing, and avoid being startled by unexpected moving images or sounds, particularly when wearing headphones.	Self-management	Sensory overload
F4	P4	Mental health protector/ Self-care timer	A self-care feature activating if you are spending too much time "doom scrolling" or looking at negative content. It would ask you whether you are OK, it would suggest an alternative activity, or would show some nice, fun content. It would include the option for users to set a timer after which the mental health protection would be triggered.	Self-management	Compulsion to use
F5	P5	Auto-delete user-generated content	Set a time interval after which all your user-generated content (posts, comments, replies, reactions, etc) would be deleted.	Audience management	Audience uncertainty
F6	P5	Restore and save a local copy of deleted content	An option to restore deleted content (e.g. enabled through a feature to download one's content), as a way to address the finality of deletion.	Withdrawal	-
F7	P5	Automatically remove non-genuine followers	A feature to weed out followers that do not seem genuinely interested in one's social media account and content. Would address the sense of unease about who's seeing one's content.	Conflict avoidance	Irrelevant / harmful content

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F8	P6	Blocking rudeness from strangers	Block inappropriate language and inappropriate images posted by people you don't know. It is OK to be playfully rude between friends, but participant did not wish to see that kind of content when posted by strangers.	Audience management	Audience uncertainty
F9	P6	Connecting people through common connections	A feature to highlight common connections between unconnected people, both within a platform and across platforms. Participant was dissatisfied with the quality of Facebook's friends recommendations, and observed that other platforms do not have this feature.	Audience management	Irrelevant / harmful content
F10	P6	Auto filter irrelevant and uninteresting content	Through a set of rules and keywords, dump all the uninteresting content into a holding area so that it doesn't clutter one's feed and can be deleted easily without having to block or upset the people posting it. Examples of content to be filtered included political views, and "pictures of people's food, cute kittens, their holidays, their children's first day at school".	Self-management Conflict avoidance	Irrelevant / harmful content
F11	P7	Remind me in ...	Ability to set up a reminder to take action on content (e.g. look at something in more detail or respond to something). Conceived as a way to better manage one's capacity and energy to engage, by deferring as needed.	Self-management	Sensory overload
F12	P7	What will this mean?	A way to assess the meaning of a written post when combined with different emojis and / or hashtags. The feature would help convey the right meaning, as well as supporting people's use of emojis and hashtags.	Explicitation	Conveying / interpreting meaning  Expressing emotional intent

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F13	P7	Mute this type of content for [time period]	Temporarily remove certain types of content for a specified period of time. Examples of content to remove included "different views", "particular hashtags", "argumental" content or "everything from strangers". Aimed to better match content quantity and nature to one's personal capacity to handle it.	Withdrawal	Sensory overload
F14	P8	Improved emoji interpretation and use	An enhancement to predictive text to suggest more emojis. It would help clarify the meaning of emojis used by other people, and support visual communication.	Explicitation	Conveying / interpreting meaning  Expressing emotional intent
F15	P8	Improved personal relationship management	Creating reminders to check-in online with certain individuals, and configuring automated messages to them. Conceived to ensure contacts don't get upset if one does not engage online with them on a regular basis.	Self-management  Economising energy	Sensory overload
F16	P8	Help understanding how others will interpret my words	An interpreter for one's user-generated content. Would indicate how others are likely to understand and interpret one's own words. Intended to avoid "inadvertently offending people".	Conflict avoidance	Conveying / interpreting meaning
F17	P12	Crowdsourced interpreter	A feature to share content drafts with trusted others, to get a second opinion about their meaning and how they may be interpreted. It can be used before or after publishing, and also for content generated by others. It would include a function to recall posts, and to edit and resend them.	Learning from / with others	Conveying / interpreting meaning

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F18	P12	Replacing emojis with personalised images	A function to replace emojis with a personalised, alternative image that better conveys the meaning of the emoji for a particular user. It includes a function to filter out incomprehensible emojis, to avoid viewing content that one cannot interpret.	Explicitation	Expressing emotional intent
F19	P12	Interests-based connection recommendations	A feature that would allow you to search by interest, to find other people who share those interests, and would recommend connections based on common interests. If several people get connected through a common interest, it can provide the option to create a group. It would include a multi-modal search feature that would return not just text, but also sounds and images.	Audience management	Underserved interest-led sociality
F20	P13	Controlled connectivity	A set of 3 features about increasing one's control over social media engagement. 1) A utility to schedule posts and direct messages, so that you can compose them in advance but send them at a later time; 2) An edit and resend function, particularly for hashtags when you have used them inappropriately, but also for spelling mistakes; and 3) A prompt to remind oneself about unread content or content that has not been replied to. These reminders could be turned on and off.	Self-management Economising energy	Sensory overload Conveying / interpreting meaning

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F21	P13	Enhanced accessibility	Some suggestions to improve the accessibility of social media platforms, including: 1) a read-aloud feature and the ability to interact with content visually; 2) a way of connecting users of accessibility features to each other; 3) a way of connecting users of accessibility features to people who would like to support them; 4) an accessibility preview for one's posts to ensure they are accessible.	-	Sensory overload  Underserved interest-led sociality
F22	P13	Customisable emojis and badges	A utility to design and create your own badges and emojis, which could then be shared and repurposed by other people. Includes a way to create personalised collections of emojis and badges. Intended to enable a more personalised visual self-presentation on social media.	Explicitation	Sensory overload  Expressing emotional intent
F23	P14	Find out about people before accepting them as a new connection	Ability to learn more about the sender of a connection request (e.g. provide a summary of their political views and their position on certain subjects determined by the recipient; ability to search their content, even if not public; information about their geographic location and mutual connections).	Audience management	Audience uncertainty
F24	P14	Remind me: my to-do list	Configure reminders for certain content and actions, in order to generate a to-do list one can tackle when time allows (e.g. "remind me to look at this friend request, or this post, or reply to this direct message, or look at this visual content or this video when actually there's time to do it"). A way to manage the speed at which content flows on social media, and the implied need to react immediately.	Self-management	Sensory overload

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F25	P14	Personalised feed	Ability to override the platform algorithm and create a personalised feed that excludes content one is not interested in (e.g. advertisements, videos or content from strangers). Sort one's feed by relevance. Also, provide a finite feed, rather than an infinite one.	Self-management	Irrelevant / harmful content  Sensory overload
F26	P16	Interest-based people search	Ability to search for and connect with people one doesn't know but who share the same interests.	Audience management	Underserved interest-led sociality
F27	P16	Choose who sees what I post easily	Ability to determine who sees the content one posts really easily: "I know Facebook provides this feature, but I can't work it. It's too wordy and has too many options".	Audience management	Audience uncertainty
F28	P16	Views checked prior to connection	Ability to find out people's views on certain topics before connecting with or following them, using the content they have posted in the past. A way to minimise the amount of hateful content in one's feed; and to ensure one doesn't amplify the voices of toxic users.	Audience management  Conflict avoidance	Audience uncertainty  Irrelevant/harmful content
F29	P17	Out of office for social media	Ability to see people's replies to one's posts at a time that is convenient, rather than whenever they happen to arrive. "Say (...) I'll post something or I respond to somebody, and I'm not in the right mental frame straight off to receive all the replies. Then it would be quite nice to put a delay on it." The feature should notify others that one has set a delay, like an "out of office" message for social media. A way to manage one's ability to engage with social media, and the nagging feeling that drives one to check it constantly.	Withdrawal	Compulsion to use

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F30	P17	Latest content from strangers	Ability to view someone's latest posts (e.g. their 10 latest ones), reactions and comments they received, as a way to assess whether one should engage with them on social media.	Audience management	Audience uncertainty
F31	P18	Set social media goals and objectives	Ability to set goals for social media use and to be reminded about them with a frequency one configures. Sparked by the goal of spending as little time as possible on social media. Other goal examples could be, "if you are engaging in arguments / debates, delaying the replies to give yourself more time"; muting certain types of information or topics after a certain amount of time.	Self-management	Compulsion to use
F32	P18	Increased transparency and meaningful user involvement	A set of 3 features to improve transparency and accountability of social media platforms. 1) Clear and multimodal explanations of all platform changes, including a point of contact for questions; 2) Real opportunities for users to provide feedback and get involved in the design of the platform; and 3) Clear and honest information about data ownership and profitability from it.	-	-
F33	P19	Autoposting	A "reservoir" of content to be posted automatically at regular intervals. The goal is to minimise the effort involved in posting regularly.	Self-management Economising energy	Sensory overload
F34	P19	"Ramlight": The random spotlight	Flash and serendipitous promotion of interest-based content. Would come up as part of results when searching for a specific topic or subject.	-	Underserved interest-led sociality
F35	P19	Don't be a dick - Win prizes	Gamifying good behaviour on social media.	Conflict avoidance	Irrelevant / harmful content

Table 1. (Continued) Participant features mapped to coping strategies and social media stressors.

ID	P#	Title	Description	Coping strategy	Stressor
F36	P20	Assistance with emoji use	A set of 3 features to provide help with using emojis. 1) Explain their meaning; 2) Create simplified, custom lists of emojis; 3) Hide emojis in posts.	Explicitation	Expressing emotional intent  Conveying / interpreting meaning
F37	P20	Viewpoint explainer	A translator or interpreter that would clarify whether someone is being rude or purely expressing an alternative viewpoint. To be used before posting a reply.	Conflict avoidance	Conveying / interpreting meaning
F38	P20	Repost / retweet filter	A feature to keep one's timeline free from content created by strangers. It works by filtering out reposts and boosts from one's connections.	Self-management	Irrelevant / harmful content

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