



# Proposing Body Doubling as a Continuum of Space/Time and Mutuality: An Investigation with Neurodivergent Participants

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## ABSTRACT

Body doubling involves using the presence of others to stay focused on or accomplish tasks. The term has emerged as a community-driven phenomenon employed by neurodivergent individuals and technologically mediated services for body doubling have followed. Yet, no academic exploration exists on the topic. We survey 220 people to investigate how, when, and why they engage in body doubling and how they define it. Most participants acknowledged that they had used this technique long before learning its name. We present the variety of ways people engage in body doubling (e.g., at a café, with YouTube), a diverse range of tasks people utilize it for (e.g., studying, dishes, exercising), and their motivations for doing so (e.g., generating momentum, staying on task). We contribute a two-part model of body doubling as a continuum of space/time and mutuality. We close with implications for future development in this space.

## CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**; **Accessibility theory, concepts and paradigms**; • **Social and professional topics** → **People with disabilities**.

## KEYWORDS

neurodiversity, body doubling, community-driven knowledge, adaptive strategies

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## 1 INTRODUCTION AND RELATED WORK

In this work, we attempt to facilitate a shared definition of body doubling and highlight the motivations of neurodivergent (ND)<sup>1</sup> individuals and communities using this technique. Body doubling

<sup>1</sup>Throughout the paper, we use “ND” interchangeably with “neurodivergent”

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can be roughly described as using the presence of others to accomplish tasks. It is often technologically mediated through video or voice calls, as well as via social media live streams and pre-recorded content. The other presence does not necessarily need to be a real person to work – many people use YouTube videos with real or animated characters as companionship and motivation while working [16]. Body doubling differs from co-working and parallel play [1, 10] in that participants do not need to be involved in the same task activity, nor do they need to be aware of this practice at all. In this work, we establish an understanding of body doubling as an ND adaptive strategy; a contribution that will help future designers of assistive technology for ND individuals.

While neurodiversity is already an undersubscribed area in accessibility research and HCI [8], there is a particularly low incidence of neurodivergent-related research for teens and adults [15]. In a review of ND-focused HCI papers, 80% featured children 14 or under and research often failed to promote autonomy [15]. At the same time, an estimated 15-20% of the global population is neurodivergent [5]. This number is likely underestimated due to the challenges and labor required to seek a diagnosis [2, 4, 9, 11, 13]. As such, there has been a (somewhat) recent push for self-diagnosis to be viewed as valid within mental health communities [6]. The umbrella of neurodiversity, a larger term for individuals whose brains function outside of what is considered “typical” [19], is broad.

While body doubling has been written about extensively on ADHD-specific platforms (e.g., ADDA [17], ADDitude Mag [12]) and popular media (e.g., CNN [14], ABC [18], etc.), there has been little to no peer-reviewed research on this practice up to now. Body doubling has gained popularity in neurodivergent communities in recent years thanks to social media but was first coined, as far as we can tell, in 1996 by Linda Anderson [18]. On Tiktok, the hashtag #bodydoubling has over 26 million views; on Instagram, there are over one thousand posts with the tag<sup>2</sup>. LoFi music streams are a popular media format that has emerged on YouTube. Research has found that the animated character LoFi Girl who studies on a loop acts as a “study buddy” for many of the viewers working alongside her [16], also serving as a reminder that “*other people in this college are also studying by themselves, and that I’m not the only one doing this*”.

Based on lived experience and need, we build strategies and adapt technologies. As far as we know, this is the first research paper to look at body doubling as an assistive technology strategy. We explore the following research question: **How do neurodivergent individuals define and use body doubling?** with goals of establishing body doubling as an assistive technology for task completion/initiation for ND individuals.

<sup>2</sup>as of April 25, 2023

## 2 METHODS

We adopt a critical disability perspective that privileges the lived experiences of disabled and ND individuals. Authors have backgrounds in psychology, human computer interaction, accessibility, and disability studies. Some authors identify as ND and/or disabled. Our goal is not to speak for our participants but to broadcast their experiences and consolidate themes to better support ND communities in the future.

### 2.1 Data Collection and Analysis

Starting in October 2022, we distributed a survey via our personal and lab Twitter accounts, ND and productivity-focused subreddits, and TikTok asking about experiences with body doubling, including if and how people body double, why they body double, and when/where they found out about the concept. We included open-ended questions on defining body doubling, what people use it for, and the benefits of using it. Our institution's IRB approved this study. We received a total of 410 responses, only analyzing the 220 responses that completed the survey fully and were over 18 years old. Two researchers coded these free-text responses.<sup>3</sup> The researchers generated themes iteratively and resolved any disagreements through discussion [7]. Multiple thematic categories were often coded within one response.

The majority of participants identified as female (55.9%). Ages ranged from 18 to 72 (mean =  $34.2 \pm 11.6$ ). 193 participants (87.7%) identified as ND. ADHD (n = 139) and Autism (n = 82) were the most represented, followed by Obsessive Compulsive Disorder (n = 11) and Dyscalculia (n = 11). We did not require an "official" diagnosis for someone's self-identification to be coded. A wide array of nationalities (30 countries) were represented in this sample.<sup>4</sup> However, responses were limited to participants that understand English.

## 3 RESULTS

### 3.1 What is body doubling?

We found that many people were unfamiliar with the term but had intuitively been using the strategy. The most common themes that emerged when asked to define body doubling follow. This collection of themes makes up our proposed community-sourced definition: **having someone in the room (n = 127) or on a call/chat (n = 27) in order to accomplish a task (n = 65) or be productive (n = 38). The second person may be doing a different task (n = 65) or a similar one (n = 13), and it is a form of accountability (n = 23) and helps you stay on task (n = 21).** We found that survey respondents' definitions of body doubling were more specific to their use cases (e.g., mirroring behaviors, using Zoom) but primarily aligned with general themes. Body doubling broadly constitutes *intentionally* using the presence of someone (in the same room, online, via media) to help start, work on, or accomplish a task (does

not have to be work-related) as a form of accountability and/or reminder to stay on task.

### 3.2 Use Cases

Participants had differing reasons for body doubling and various situations when they would employ it. Over half (n = 186) of participants responded that they were more likely to complete a task when working on it alongside someone else. Overall, body doubling seems to help participants complete tasks and get unstuck. It can serve as motivation and comfort for large, looming tasks or encouragement for tedious ones.

**3.2.1 Finding body doubling.** 24% (n = 53) of responses indicated that participants learned about the term "body doubling" while taking our survey. Many mentioned that provided with a definition, that they have been body doubling for many years without knowing (52 stated they "have always done it"). P58 (ADHD, Autism) says: "A TikTok put a name on the term for me". Giving individuals a chance to put a name to a strategy can be a source of self-understanding and connection with others. Having the label also allowed individuals to see the activity as a "coping skill" or a legitimate strategy to be used when needing assistance in task completion.

**3.2.2 Who to body double with and where.** Participants primarily indicated that they body double with friends (n = 132, 60%), family (n = 87, 40%), and coworkers (n = 81, 37%). While most responses indicate that participants body double with people they know offline, 20% (n = 45) and 16% (n = 35) of participants noted that they body double with strangers online and strangers in public, respectively. 66 participants responded that they work mainly in-person, 23 body double virtually, and 93 do a mix of the two. Popular public places to work were at the library (n = 20) and at cafes (n = 17). 41 participants responded that they body double with some form of media or online content. This includes **pre-recorded content** such as "YouTube videos of people studying." - P39 (ADHD) and "podcasts and YouTube videos" - P47 (ADHD, Autism, Dyscalculia), and **"live" or real-time content** such as "tiktok videos, twitch streams dedicated to body doubling" - P93 (ADHD).

### 3.3 Why does body doubling work?

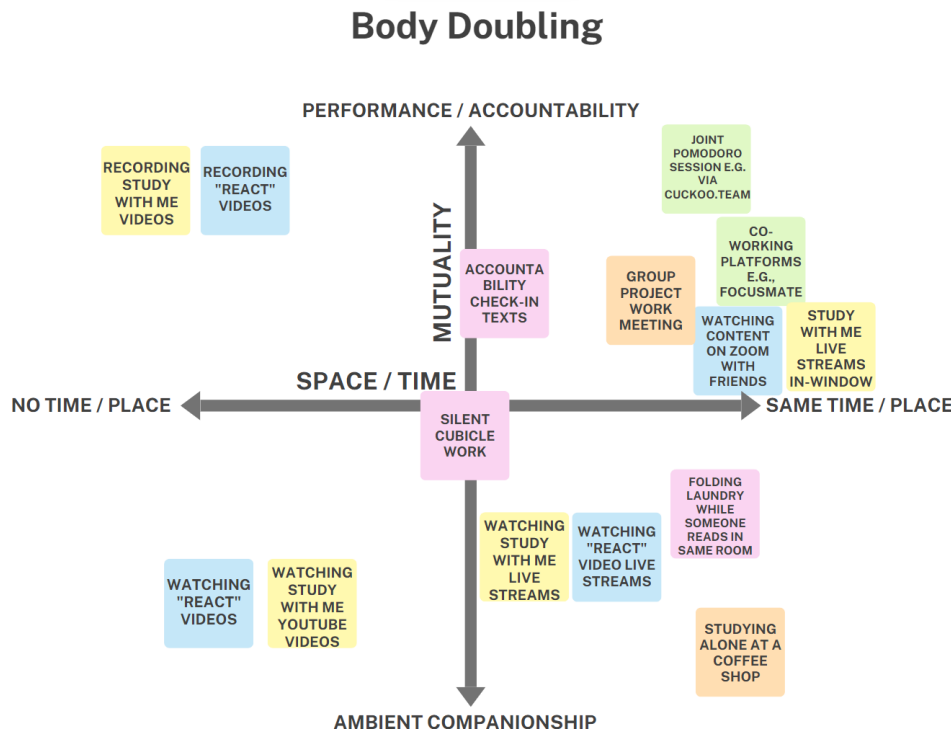
When asked why they use body doubling, some participants posited that body doubling is about copying someone else's behavior (n = 13), although this category was split between uncertain guesses (e.g., "mirroring someone else's posture & movements?") and a more approximate reasoning of why body doubling may work.

Companionship was a recurring theme in the responses to this question. The presence of another person is motivating for various reasons; companionship, accountability, guilt, and serving as a visual reminder. Accountability was specifically mentioned in 26 responses. Some of this accountability comes from direct refocusing on the part of the body double ("...someone could remind me what I was busy with in case I lose concentration" - P152 (ADHD, PTSD)) while for others, the presence of another is enough pressure to keep them on task ("I feel like I am accountable to not engage in impulses if someone is there with me" - P154 (ADHD)).

**3.3.1 Task-Related Feelings.** Certain tasks can come with many associated feelings, such as overwhelm, daunting, anxiety, and

<sup>3</sup>The researchers themselves engaged in body doubling to complete the coding process.

<sup>4</sup>North America (USA, Mexico, Canada) accounted for 123 responses, South America for four (Argentina and Chile), the Middle East and Africa for four (Israel, South Africa, Nigeria, and Egypt), Europe for 58 (Spain, Sweden, Switzerland, UK, Slovakia, Poland, Netherlands, Lithuania, Italy, Ireland, Georgia, Germany, Finland, France, Belgium, and Austria), and Asia Pacific for 17 (Singapore, Philippines, Australia, New Zealand, and India)



**Figure 1: Concept map representing the components of body doubling. The y-axis depicts mutuality – level of awareness, from performance/accountability on one end to ambient companionship on the other. The x-axis depicts space and time, ranging from no defined time/place to the same time and/or place.**

also embarrassment around tasks that should seemingly be easy to accomplish but are hard for many (e.g., *“Embarrassing: showering. I watch tiktok in the shower to distract/ increase motivation”* - P150 (ADHD, Autism).

Especially for difficult or unpleasant tasks, body doubling enables people to stay focused and feel less overwhelmed – *“I use it when tasks are particularly unpleasant, difficult, or emotionally stressful.”* - P160 (ADHD, Autism). With tasks such as this, participants noted that they tend to avoid working – *“It helps me with tasks that are particularly hard or that I’ve been avoiding.”* - P101 (ADD, Autism, OCD, C-PTSD)) due to overwhelm and anxiety – *“any anxiety inducing task”* - P71 (ADHD, Autism, mood disorder). Body doubling can help to get past some of the anxiety to at least start a task and get going, even for things people want to be doing – *“tasks I don’t want to do as much as others but sometimes things I want to do but can’t seem to get myself to do”* - P80 (ADHD, Autism)).

#### 4 DISCUSSION – MAPPING BODY DOUBLING

We propose that body doubling is a spectrum of two things – Space/Time and Mutuality. This model reflects the flexibility we saw participants utilizing. First, a spectrum of **space and temporality** exists. This addresses the “liveness” of the body double. The space-time spectrum ranges from *happening in real-time, in a shared space to pre-recorded in a different space*.

When body doubling, two people could be on a real-time video call or someone watching a Twitch live stream. On the other hand,

the level of real-time may look different for different people as well – for one person, periodic texts to check in may be sufficiently “live”, while for another, it may be too asynchronous for them to work that way. There are also times when the event may be “live” only for the initiator, that is, someone who may watch a previously occurring live stream or a “study with me” YouTube video to act as a body double. This component has various levels of being perceived and pressures of perception – 1:1 body doubling can involve check-ins about task status. In contrast, it is unlikely that a stranger in a coffee shop is checking in on someone else’s progress. Previous research shows that being physically co-located with others in public is enough to feel “social” without the pressure of accountability to others [3]. Likewise, in our study, the need for accountability and “social pressure” varied from participant to participant.

Second, there are differing levels of **mutuality and awareness** on the part of the entity acting as the body double. This spectrum ranges from *someone who knows what you are doing and you can be accountable to, to someone sharing a space but unaware of their role as a body double*. On one end of the spectrum lies body doubling as a performative form of accountability. In one instance, two people may agree to act as body doubles for each other to complete tasks via video call and Pomodoro sessions. A livestreamer is aware how many people are watching them and, potentially, using them as a body double. In a sense, we can view this as cosplaying as a productive person or potentially masking ND traits. On the other hand, there is body doubling in the form of ambient companionship.

When body doubling in a public location the strangers acting as body doubles are likely unaware that someone is using them to focus (although we may assume people in these spaces are doing work of some sort). There are varying levels of disclosure of a body doubling session within this. As we found, many participants body double with their friends of family, likely people that they feel comfortable being frustrated or vulnerable with.

High mutuality and same space/time represent mediums such as co-working on virtual platforms or joint Pomodoro sessions. High mutuality and nebulous space/time represent instances such as recording study with me videos to be posted at a later time for people to watch. Low mutuality and less similar time/place would be like watching study with me YouTube videos. Low mutuality within the same time/place could be studying alone at a coffee shop.

**4.0.1 Designing along the model.** While the community has adapted strategies and is creating content utilizing body doubling across the map, almost all commercial technologies exist only within the map's upper right (high mutuality, high / space-time). Our results and discussion show that not everyone always benefits from that approach. New technologies could exist along the less populated sections of the map to support more varied engagement and connection.

## 5 CONCLUSION

Our survey finds that most neurodivergent participants use body doubling to accomplish tasks ranging from work and school to household chores and cooking. Participants report primarily using the presence of friends and family to accomplish tasks, but also body double with strangers online (via Discord, Focusmate, etc.) and in public (such as at a café). This initial survey shows that for many, body doubling is an oft-utilized and effective means of task initiation and completion for neurodivergent individuals and describes community-driven definitions of a home-grown phenomenon that has arisen to address challenges these groups may face in their daily lives.

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