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FREDRIK RUSK, MATILDA STÅHL AND SOFIA JUSSLIN

Abstract

We, as researchers of situated game play from players' perspectives, may be overlooking aspects of how players, in-and-through their actions, actively orient to the complex interconnectedness of interactional resources when playing multiplayer games in teams. This study analyses, from an ethnomethodological (EM) participant perspective, video data of several screen recorded *Counter-Strike: Global Offensive* (CS:GO) matches being played by two teams that were geographically dispersed, to understand how teams choreograph their game play as part of larger sequences of situationally emergent tactics. We incorporate an understanding of expanded choreography developed within the field of dance to understand the interconnectedness of the interactional resources available to the participants to collectively, and situationally, choreograph their team play. The EM participant perspective provides a focus on what players, micro-interactionally, orient to and make relevant to each other by making each other accountable for own and others' actions that are interconnected to the 'basic elements' of movement. The main findings are that the choreographing is done collectively and, largely, based on the information gathered in-and-through callouts that function as a choreographing device. However, the choreography is not based on verbal communication (alone), but on the interweaving and interdependence of each player's movements and actions on-screen in-and-through interaction with the basic elements of movement.

Keywords

Teamplay; multiplayer; ethnomethodology; choreography; collaboration; coordination; competitive gaming

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Introduction

The multiplayer first-person shooter (FPS) game genre, the game context of this study (*Counter-Strike: Global Offensive*, CS:GO), is popular and continues to be one of the main genres within both esports and the competitive gaming scene. Unlike game genres where in-game communication primarily is "having people to talk to while off doing solo adventures" (T. L. Taylor 2009, p. 39), the growing multiplayer FPS competitive gaming scene has put an even larger focus on teamplay and coordination. Therefore, players in the FPS competitive gaming scene value functioning cooperation, communication, adaptability skills and knowledge of community-shared understandings of game play (Gibbs et al. 2004; Halloran et al. 2003; Kiourti 2019, 2022; Manninen 2001; Rambusch et al. 2007; Rusk & Ståhl 2020, 2022; Rusk, Ståhl, and Silseth 2020, 2021; Tang et al. 2012; T. L. Taylor 2015; Wright et al. 2002). In these game contexts, players are geographically dispersed, and in-game actions are carried out by players' in-game avatars (Reeves et al. 2009). Further, players often communicate through a shared voice channel and this voice channel, in concert with the in-game actions, become their principal points for constructing a shared understanding of actions and events in-game (Manninen 2001); that is, choreograph their play (Rambusch et al. 2007; Rusk and Ståhl 2022; Tang et al. 2012; T. L. Taylor 2015).

This study analyses several screen-recorded CS:GO matches being played by two teams, in an attempt to, from an ethnomethodological (EM) participant perspective (cf., Reeves et al. 2017), understand how teams choreograph their game play as part of larger sequences of situationally emergent tactics. This article contributes to the discussion on finding new ways to examine in-game interaction. We display the interconnectedness between the actions and understand how geographically dispersed participants interweave actions onto, and into, each other as they coordinate their team play in-and-through their on-screen actions and a Discord voice channel. To do this, we incorporate an understanding of expanded choreography developed within the field of dance (Hildebrandt 2016; Østern 2018; Rouhiainen and Østern 2020) and draw on the structural possibilities of choreography to understand the actions, collaboration, and coordination in the players' game play. Understanding individual players' actions and team actions as part of a larger, emergent, choreography may help us to better realize how CS:GO players orient towards the rich and complex audio-visual contexts in-game as they reach a mutual understanding with their team regarding their current and next actions. In other words, we may better understand how players in a team, intersubjectively, construct a situational awareness of current and next actions.

Players in fast-paced competitive multiplayer FPS games, such as CS:GO, have small windows for doing actions and recognizing others' (both teammates' and opponents') actions. Therefore, they appear to orient to effective communication and community-shared known-in-commons when, both individually and collectively, making split-second decisions (Colón de Carvajal 2016; Kiourti 2019; Mondada 2013; Piirainen-Marsh and Tainio 2014; Reeves et al. 2009; Rusk and Ståhl 2020, 2022; N. Taylor 2009, 2012). One fundamental part of the effective communication appears to be callouts (Rusk and Ståhl 2022), which are community-shared and community-constructed situated practices that are contextually dependent on in-game on-screen actions and verbal communication. They are used to coordinate moving as a team

(Duell 2014; Halloran 2011; Manninen 2001; Tang et al. 2012) and most often they are English, known-in-common, words that refer to specific locations in the game map. However, the voice communication is not necessarily distributed evenly among, or between, the players. There are serious issues with regards to the inclusiveness of women, non-straight, non-binary, and non-white participants in the (voice) communication between players (see, e.g., Gray 2020; Janish 2018; Kelly et al. 2023; Oliveira et al. 2018; Ratan et al. 2015; Zhu 2018), especially when these players play with random teammates and against random opponents online. The flourishing misogyny and racism of gaming communities creates a silencing effect for players marginalized by the norms of technomasculinity (Johnson 2018). This is unfortunate not only to players othered by this norm, but to the detriment of all players, since information and communication are fundamental for good teamplay in fast-paced FPSs. This is an important point to keep in mind when reading this study (which is based on screen recordings from two all-men teams of players that know each other from before) and other studies on collaboration and coordination in online gaming. If players are marginalized and harassed when using the voice channel and refrain from using it, this will limit the value of communication presented earlier for the whole team.

In this study, we propose an approach to understand how players, situationally, interact in-and-through a multiplayer FPS game, while being geographically dispersed. Players employ all, and whatever, interactional resources that are available to them to play together as a team, and, as an analyst, it may be hard to observe how all the small, coordinated actions of individual players are oriented to by teammates and opponents in a fast-paced multiplayer FPS. Additionally, players, from their perspective, might not necessarily be able to verbalize or conceptualize these actions. Consequently, for research on social interaction in-and-through game play, the next step is to embrace the potential of data collected from the participants' points of view at the very moment of the event. Therefore, by using video data of the actual game play that can be viewed repeatedly we can achieve a greater empirically grounded understanding of the systematics, structure, and social organization of the interaction in fast-paced multiplayer contexts.

Ethnomethodology and Video Game Play

As an alternative to studies that are produced through an application of standardized methodologies, ethnomethodology (EM) studies participants' practical methods for meaning-making; that is, the methods in-and-through which participants concertedly produce actions, activities, and practices of everyday life in an actual, and not hypothetical or theoretical, setting. It provides for studying the details of social situations, and its practices for reporting and analyzing adapt to whatever is being studied (Reeves et al. 2009). Here, we draw on EM to study the practical methods of players to choreograph their team play while geographically dispersed (Garfinkel 1967, p. 31). It provides the tools to analyze, empirically, how teams choreograph their game play in-and-through the context of the game and which interactional resources they appear to orient to when doing these activities. The details of members' methods reveal the taken-for-granted structures that are oriented to as players arrange their game play, which are often "susceptible to be […] ironized or exoticized in academic work" (Reeves et al. 2009, p. 207). Therefore, EM research strives to provide insight into the

detailed ways in which participants provide accounts to each other and how these accounts are tied to the activities that they are part of (Reeves et al. 2017).

The study of multiplayer video game play is steadily becoming a legitimate topic in EM studies (cf., Aarsand 2010; Aarsand and Aronsson 2009; Baldauf-Quilliatre and Colón de Carvajal 2015, 2020; Bennerstedt 2013; Hung 2011; Mondada 2011; 2012; 2013; Piirainen- Marsh and Tainio 2009a, 2009b, 2014; Reeves et al. 2009; Reeves et al. 2017; Sjöblom 2011). These studies share an interest in attempting to understand the practical methods used by gamers when playing. In this article, we argue that EM informed approaches (Garfinkel 1967; Sacks 1995) can be utilized to systematically study players' social practices in CS:GO matches with a focus on the *sequentiality* and *accountability* of actions in-game, as well as members' use of *devices* (Reeves et al. 2017; Sacks 1995). Devices are members' constructs, which they use in making sense of and acting in the world (Garfinkel 1967). They may, for example, be interactional resources that are oriented to and used for specific practices that are trans-situational. That is, they are devices for performing certain actions (Clayman, Heritage, and Maynard 2022) and can be understood as products of a larger interactional machinery, instead of practices of a particular interaction done by particular people (Sacks 1984, p. 26). Sequential organization entails that social interaction is organized and orderly. The series of interactional turns can be tracked for which interactional resources that appear to be oriented to and what participants may be doing through them, which responses may be relevant or possible, and where the sequence is going, that is, what outcomes the participants seem to pursue (Sacks, Schegloff, and Jefferson 1974). The concept of accountability entails that players analyze, using the available interactional resources, their own and others' conduct in-game to determine what the possible, or relevant, next turns or actions are (Bennerstedt and Ivarsson 2010; Brown and Bell 2004). Players do things in a way that makes their 'doings' recognizable to others (Bennerstedt and Ivarsson 2010). These findings are of special interest to studies of game play in which the players are not physically co-present and can only interact in-game, such as the context in this article. Most notably, some EM studies that focus on the social organization of the in-game interaction, such as the players' avatars displaying them to each other in-and-through the gameplay on screen, find that actions on-screen are organized and sequential, similarly as in non-digital social settings (e.g., Baldauf-Quilliatre and Colón de Carvajal 2015; Bennerstedt and Ivarsson 2010; Brown and Bell 2004; Laurier and Reeves 2014; Reeves et al. 2009; Reeves et al. 2017; Rusk and Ståhl 2020, 2022).

An EM participant's perspective, together with video data of the actual game play, can provide a new understanding of how players, themselves, orient towards the team coordination. Playing the game in a coherent way (orienting towards a common goal and choreography) is known-in-commons (expected actions, activities, and events) and therefore often referred to implicitly (Garfinkel 1964; Sacks 1995). As these interactions evolve sequentially, participants seamlessly relate their actions to previous actions or events and make each other implicitly and explicitly accountable for events and activities done in-game. It is here that the notion of expanded choreography can help us in understanding how accountability and known-in-common actions are situationally emergent and set in motion, as a team.

Expanded Choreography to Understand Communication and Coordination in Online Multiplayer FPS Video Games

Choreography originates from the field of dance and its roots stem from composing movements for dancing and the human body. The combination of game play and dance may seem farfetched, but Kirkpatrick (2011) suggests that all video game play is a form of dance. In fact, the notion of choreography has been discussed as being 'expanded' for already over a decade (Hildebrandt 2016; Østern 2018; Rouhiainen and Østern 2020) and the structural possibilities of choreography has moved beyond the dance field into, among other fields, game studies (Birringer 2006; Kirkpatrick 2011; Snowdon 2019). Additionally, there are game studies using a notion, or closely related notion(s), of choreography to analyze and/or discuss diverse collaborative and coordinative phenomena, for example, the choreography between players, on-screen actions, off-screen actions and contexts of play (Bennerstedt and Ivarsson 2010; Giddings 2007; Giddings and Kennedy 2008; Linderoth and Bennerstedt 2007; N. Taylor 2009, 2011, 2012), as well as callouts (N. Taylor 2011, 2012) and spectator's camera movements (Elam and N. Taylor 2020).

In this article, we use the notion of choreography to make sense of how players orient to their own and others' conduct in the rich and complex audio-visual space that they share through each of their own perspectives. That is, we use the notion of choreography to understand the situated and emergent team actions that players enact and set in motion in-and-through the in-game environments and resources that are available to them. Choreography is, then, not a fixed entity, a tactic and way to move that has been previously agreed upon, but, instead, choreography is the moment-to-moment actions done by team members to create and develop emergent tactics, on-the-go. Additionally, speaking to the situatedness of emergent tactics, following the notion of choreography, the players (all potential choreographers) can move on a horizontal line, instead of on a vertical one. This approach relieves us from the analytical categories of having to find who the 'leader' is and see the choreography and the orientation to who choreographs what and how as dynamic and fluid, and the situations as unfolding collectively (Butterworth 2018).

We draw on reiterations (Glad 2002; Smith-Autard 2014) of Laban's (1975) movement theory to understand what players orient to as they choreograph and perform movements in the in-game spaces. Laban's framework has been used extensively to describe and analyze movement in diverse disciplines, such as psychology, health, sports, and STEM areas (see, e.g., Bernard et al. 2019). The movement theory states that the basic elements are the participants' own movements in-and-through interaction with the *body*, the *space*, the *dynamics*, and the *relationships* for creating activity, expression, and experiences (Glad 2002). Movements are done in relation to these elements in all spaces and contexts, and next, we elaborate on these elements and operationalize them within the context of our analysis of teamplay and coordination in CS:GO.

The *body* is the instrument of the movements. In fast-paced multiplayer FPS games, it is often the movements and actions that the player creates on-screen by enacting movements with the avatar. In FPSs, players use their bodily situational awareness to, moment-to-moment, calculate how and where their avatar is visible and how it is moving in-game, although they cannot see the avatar per se. In this way, the

relationship between player and avatar is understood as instrumental (see, e.g., Ash 2014, Giddings 2007). Players are continuously, and creatively, exploring what the avatar can do (e.g., turn, run, jump, throw, manipulate objects, shoot, stab, or crouch).

The *space* (in CS:GO, both the in-game environment and the map with its symbolic representations) directs what the players can and cannot do. Utilizing the space shows intuitive and conscious choices. Language use indicates how the space plays a big role, which relates directly to the importance of callouts in CS:GO. In choreography with others, it is also an important part to understand how and where others move, because it affects the space and your space. What others do is read by you and it makes sense based on how you understand the space and the actors in the space, including materials that can be manipulated in the environment (e.g., diverse grenades).

Dynamics refers to the degree of energy you put into the movements in the space. Dynamics give the movements personality and expression, such as 'fast', 'slow', 'quick' or 'quiet'. A varied bodily register provides diverse dynamics to use in the movements. That is, knowing how and when to move fast, slow, quietly, or to stand still is essential to playing the game, as well as when to hold the grenade for longer and when to throw it short, long, fast, or slow. Additionally, dynamics also refers to weapon skill in how to shoot (e.g., spray, burst or single shots). In other words, a more competent player uses a more diverse range of dynamics. All of this is, then, also interconnected with the body (own and others') and the space.

Relationships indicate that we express ourselves in relation to communication partners; who and what can we move in relation to? In our CS:GO data, these would be in-game environment and map with its possibilities and constraints, in-game music and sounds, information on the HUD (heads-up display), teammates, opponents, health, role as terrorist or counterterrorist, and so on.

Expanded choreography can support in understanding complex, fast-paced and collective coordination in a multiplayer FPS game by providing an analytical framework originating from a field that has as one of its primary aims to produce structured understandings of intensely complex movement(s) by 'bodies' in relation to both human and non-human actors, as well as diverse soundscapes. These are basic elements that help the understanding and analysis of situations where verbal communication is scarce and where participants rely more heavily on a plethora of other modes of communication, including a deeply rooted expectation of common-ground expertise. Moreover, callouts are related to these four categories, depending on player actions, use of space, dynamics in movements, and relationships to others and the environment.

In this article, the aim is to study team coordination through an analysis of the ways participants deal with the projectability and contingencies of upcoming team and opponent actions. That is, how do players agree on a choreography for the round, and how do they change the main choreography mid-round, using a host of collaborative practices, including callouts, as a choreographing device.[1] The EM perspective, together with an understanding of expanded choreography, provides us with analytical tools to understand the complex situated coordination and collaboration that teams engage in when playing CS:GO in a sequential and accountable manner. That is, how

the players understand how others are interpreting a situation, not only from their explicit (often verbal) communication (which is scarce during CS:GO rounds) but from what they do through their movements.

Context and Participants

The data used in this study, participants' own screen recordings of CS:GO matches, was collected for one year (from May 2017 to May 2018) in collaboration with a Swedish-speaking vocational school in Finland and the participants (two teams, Finnish-Swedish bilinguals who are proficient in English, 17–18 years old, all men) who studied esports as a minor subject. The esports program functions, for the study, as an access point to a setting with serious gamers that are playing a competitive game with a goal of becoming better at gaming. The students volunteered to participate in the study through a teacher. Participants used Swedish as the language of instruction at school, and Swedish with some Finnish and English codeswitching with each other both inside and outside of the gaming context. All participants were geographically dispersed and used a Discord voice channel to communicate with each other during the matches. The all-men group of participants was not a choice made by the researchers but supposedly a result of the predominantly male game culture resulting in few female students in the esports program (Kinnunen et al. 2020; N. Taylor 2011). The authors discuss the implications in more detail elsewhere (see Rusk and Ståhl under review; Ståhl 2021). In the data, participants presumed all players to be men unless a gamer tag or their voice hinted that the participants needed to re-evaluate such an assumption. While the participants stated to welcome female players, they did note that the online game culture in CS:GO might not be supporting of female-identifying players. There were efforts made to include the esports program's only female student. However, she played a different multiplayer game and dropped out of the data collection before submitting any material.

The game under scrutiny, CS:GO, is an online FPS multiplayer game (Valve Corporation and Hidden Path Entertainment 2012). Two teams with 5 players each play for several rounds in one match. The first team to win 16 rounds wins the match. Rounds are approximately 2 minutes long and matches are played for approximately 20–45 minutes. You start as either a counterterrorist (CT) or a terrorist (T) and then switch. The game is played on different maps that have different goals depending on if your team is CT (e.g., defusing a bomb) or T (e.g., detonating a bomb). Your team wins a round if you succeed in your goal or stop the opposing team from achieving their goal. If you die during a round, you must wait until the round ends, then you start again. During this time, you function as a spectator. In this mode you can watch the rest of the round from the points of view of your remaining teammates.

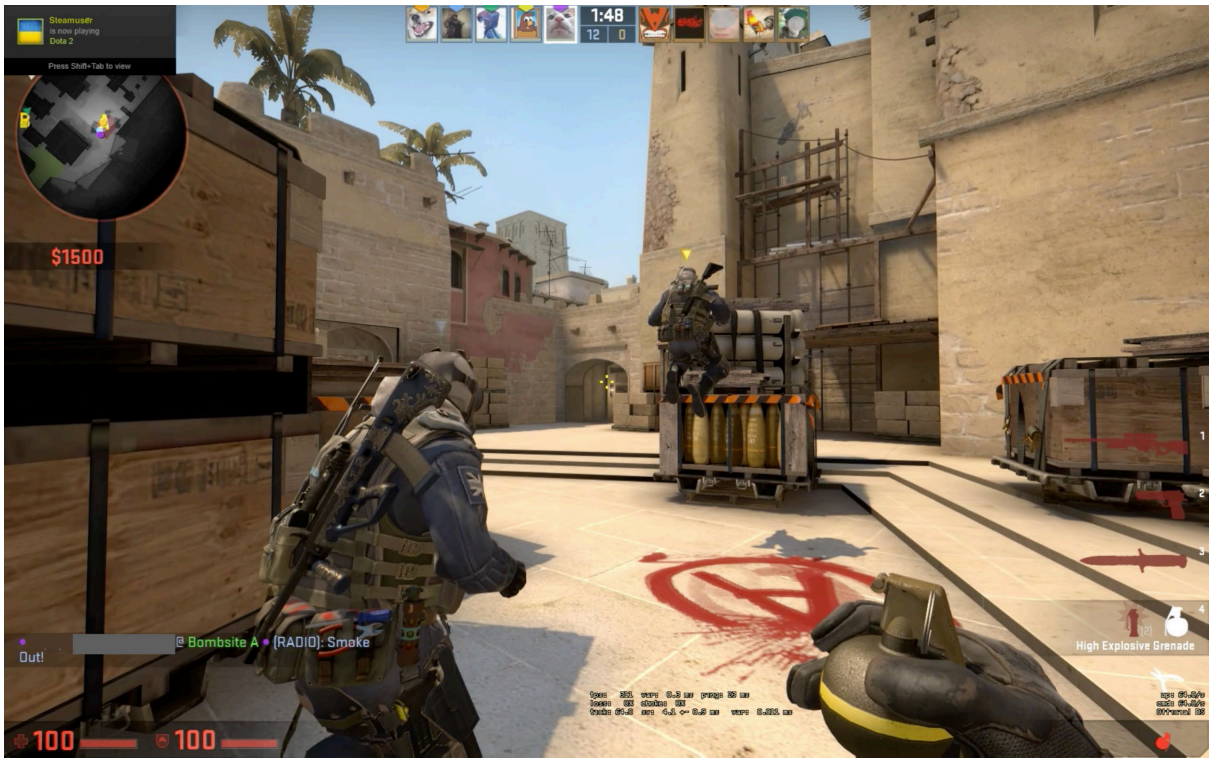

Figure 1: Screenshot from the Counter-Strike: Global Offensive *screen recordings. © Valve Corporation.*

Data Collection and Analysis

The use of EM to analyze in-game interaction places certain demands, or requirements, on the data collection (Giles et al. 2015; Meredith and Potter 2014; Meredith 2015). EM's aim to study the actual organization of practices in human interaction requires recordings of naturally occurring activities, including naturally occurring digitally mediated interaction (Giles et al. 2015; Mondada 2012). Implementing these requirements means that data should be collected, at least, as screen recordings of one participant's screen as the interaction occurs. The data collection was organized as a tight collaboration between the researchers and the focus students (Team 1 has 4 focus students and Team 2 has 3 focus students), who screen-recorded their matches and shared them with the researchers for one year (see Table 1). The data is of the two teams playing CS:GO matches against random opposing teams in competitive mode. The students handled the screen recording software and thereby decided which matches to send to the researchers. Apart from access to the material they agreed to share, we have very limited insight into these negotiations as they took place outside of the recordings. However, one such negotiation (focused on sharing wins or losses, match 1, Team 2) was documented and helped us to clarify that both wins, and losses were relevant to us. Both teams sent recordings of seven matches and the analysis is based on all shared recordings (see Table 1, 14 matches in total).

	Team 1				Team 2		
	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7
Match 1	X	-	X	O	O	X	X
Match 2	X	O	X	O	O	X	O
Match 3	X	-	X	X	O	X	X
Match 4	X	X	X	X	O	X	X
Match 5	X	X	X	O	X	X	X
Match 6	X	X	X	O	X	X	X
Match 7	X	X	X	-	X	X	X

X = submitted a screen recording to the researchers

O = participated in the match, did not submit a screen recording/issues with participant file

- = did not participate in the match

Table 1: Overview of screen recordings.

Another methodological consideration for the study of multiplayer in-game interaction from a participant's perspective is that the participants are geographically dispersed and are using their own computer screens (Heath and Luff 2000). Hence, an immediate argument would be that for a better understanding of participants' social actions and for an emic analysis from all participants' perspectives, all participants would need to record their screens. However, when recording several participants' perspectives, the issue of an emic perspective becomes apparent; that is, which participant's perspective is the one to be analyzed and how to 'gather' all perspectives into how participants structure and do their collective social organization? If one had video data of all participants' points of view, how would the analyst explore 'a participant's perspective' on in-game online interaction when, in fact, all participants each have their own distinct perspectives on it (Heath and Luff 2000; Luff et al. 2003; Rusk and Pörn 2019)? In this study, we do not have every player's recording of every match. Firstly, we do not have the recordings of the opponents' game play, we only have recordings made by participants from our focus teams. Secondly, we do not have recordings of every focus team player's perspective of every match (see Table 1). This has implications on the analysis, in that we do not have 'complete' data to understand every player's full individual participation in the situations. Thanks to the voice channel and visible on-screen actions viewed from other players' perspectives (including the mini map with colored dots for each player on the team), the analysis can include aspects of other players' actions, nevertheless, not completely. With these caveats in mind, the data is still robust and rigorous enough to conduct an EM analysis of the game play. We propose that the analysis can be considered rigorous and robust even with only one participant's point of view, if the analysis pays detailed attention to the EM concepts of

accountability and sequentiality by analyzing how the participants communicate that they have, so far, had a common (enough) understanding of the situation and that they orient towards a “reciprocity of perspectives” (Heath and Luff 2000), which they base on what is available to them at their end of the connection.

Following an EM analytical approach, none of the phenomena and practices analyzed in this study were preconceived prior to data collection. Instead, they were, and became, emergent in the data as a result of repeated “unmotivated looking” (Psathas 1995). This unmotivated looking led us to understand that players, although not having played as teams for long, appeared to rely on all kinds of interactional resources that are available to them to play together as a team without, explicitly, verbalizing what they do and why. Players just seemed to know what to do and coordinate their actions according to how they understand the situations in a very unproblematic manner. These observations led us to focus on how participants collaboratively choreograph the start of rounds and how they (may) change the choreography mid-round. That is, how do they orient towards the rich and complex audio-visual contexts in-game as they reach a mutual understanding with their team regarding their current and next actions. Therefore, we needed to include, in the initial data selection, the starts of rounds and the situations mid-round in which players oriented towards changing the first oriented to choreography. This generated a vast body of situations and we realized that we needed to acquire some level of competence in understanding the map and the intricacies of the game to be able to discover how participants choreograph their team movements. Hence, we focused on the map that we have most data of: Mirage. This, still, generated a large collection of situations: approximately 16 hours of participants’ screen-recorded data. With this better understanding of how participants generally choreograph their game play, we then focused more on how the team, collectively, choreograph the start of rounds and later modify or change the choreography as the round progresses. The transcription system builds on Jefferson’s (2004) system which is the most used system in both EM and conversation analytical (CA) studies (see Appendix 1 for explanations of symbols used).

Evolving online research methods from participants’ perspectives places new demands and ethical challenges on the researcher, especially regarding online content (Ståhl and Rusk 2022). Several steps were taken to avoid the research being perceived as an intrusion into the students’ privacy (Murphy and Dingwall 2001). The recordings are deemed to be sensitive data; therefore, they are stored on encrypted external hard disks and are not shared or made openly accessible outside of the project group. Additionally, we use faux names instead of the students’ real names and we have informed students, parents, and teachers of the study’s aim and what participation entailed. The screen recordings were sent over an encrypted and secure file sharing service and all gamertags (the players’ in-game names) have been removed and changed to the colors that players are provided in each match to secure the participants’ privacy. The participants were given as much control of the data as possible (Murphy and Dingwall 2001): (1) they volunteered to be part of the study; (2) they handled the screen recording software and decided which matches to send; and (3) before showing any in-game data to an outside audience, the data was sent to the participants to acquire consent to show it. For the most part, the excerpts have been translated into English by the researchers, except for statements originally in English.

Results

Before presenting how the starts of rounds are choreographed and how choreographies are changed mid-round, we need to acknowledge the differences in playing as counterterrorist (CT) or terrorist (T). In our data, when playing as CT, providing a clear choreography in the start of a round does not seem to be as essential as when playing as T. This is, partly, because our data only includes 'sabotage' in which T is the aggressor (must plant the bomb at one of two bomb sites within the time frame) and CT is defending the bomb sites. The different team goals, in themselves, place different demands on choreographies because of the difference in the relations between the basic elements of choreography and movements.

In our data, teams playing CT usually divide the team to key positions (*site A*, *site B*, and, possibly, *mid*) to get an overview of the map and where the opponent is attempting to plant the bomb. The basic elements of space and dynamics are oriented to as central, because of the need to understand what the opponents are attempting. CT team members, collectively, listen to and orient to the callouts and change the choreography accordingly. Playing as T, the teams employ callouts as a choreographing device to be able to read the basic elements from the whole team's perspective. They use callouts to determine, collectively, how the choreography plays out and how it relates to the opposing team's choreography. The basic elements of relations and body appear to be oriented to as central for teams playing as T, because they need to read, collectively, who and what they can move their bodies in relation to. They are more dependent on being flexible from the start, because of their role as aggressors and, therefore, need to express themselves in relation to how the defending team has positioned themselves.

In the following, we outline how participants choreograph the start of rounds and how they orient to the projectability and contingencies of upcoming team and opponent actions when they change or modify the choreography mid-round. The results section is divided into (1) how teams, collectively, choreograph the start of rounds and (2) how they use callouts as a choreographing device to modify and change the main choreography based on the basic elements that indicate upcoming team and opponent actions. The first two excerpts focus more on the collective nature of choreographing that appears to be part of how the teams coordinate their play. The final two excerpts exemplify how the basic elements are part of the moment-to-moment choreographing of team play, with a focus on callouts as a choreographing device.

Choreographing the start of a round

In-between rounds, there is a temporal position (15 seconds) for explicitly negotiating and agreeing on a choreography that will be used for the round. These negotiations, if held, are very short and are usually solved by either someone providing an explicitly stated starting choreography for the round and others adding to and/or modifying that proposal, or with no explicit proposal and each participant reads the situation based on previous expertise and expected known-in-commons.

The first excerpt (1) displays how an explicit starting choreography may be given in the start of a round playing as T and how others have agency over the choreography and can modify it.

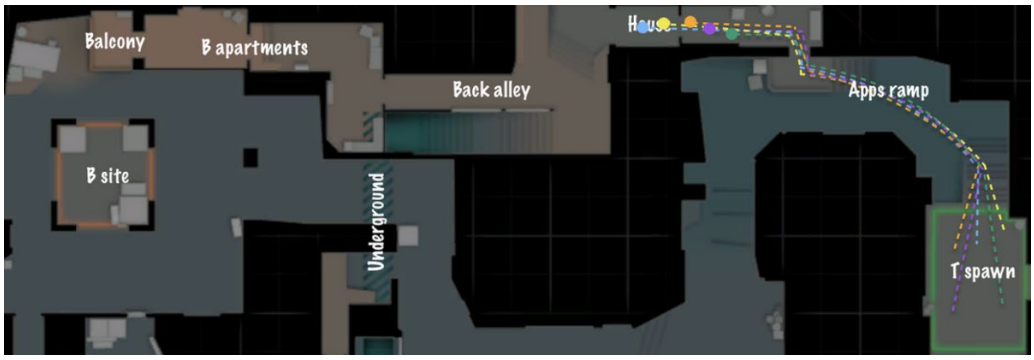

Figure 2: Team movement in the beginning of the round in Excerpt 1 (the dots indicate end positions of players).

```
01 Blue:   >ska vi fa    be<
           >are we going be<
02 Purple: där uppe: (.) nån  (märke)=
           up there. (.) some (mark)=
03 Yellow: =contact be
04         (1.0)
05 Blue:   >ja(h) (nå)=o:kej   co[ntact be<]
           >ye(h) (well)=o:kay co[ntact be<]
06         (3.0)
07 Purple: [contact be: (   ) jå=jå    (.) nå då f- då fungera: de]
           [contact be: (   ) yes=yes. (.) well then i- it worked ]
08 Orange: [jå:jå: där-  (.) jå där e sådän märken               ]
           [ye:ye: ther- (.) yea there are those marks            ]

09         ((round starts and all start running towards B site through
           house, see fig 2))

10 Orange: >okej okej<=
           >okay okay<=
11 Purple: =contact be: om [nå(n)-
           =contact be: if [anyone-
12 Orange:                 [(nån)
                           [(anyone)
13 Green:  å control ji: så stänger du av din mick
           and control jay you turn off your mic

14         ((team starts walking when approaching back alley))

15 Purple: [ja ta: u:ge:
           [I take u:ge:
16         [((runs for two steps and jumps before walking again))

17         ((Purple walks down the stairs towards underground))
18         ((rest of the team walk towards B apartments))

19 Green:  >(.hhh)sjo<
           >(.hhh) ye<
20 Orange: steppa lite mer(a) pliis
           step   some more please

21         [((Purple engages opponent, see fig 3))
22         [((rest of the team walk towards B apartments, see fig 3))

23 Purple: ((dies)) pusha: uuge: en
                    one pushing uuge:
```

```
24 Orange: [okej vi [fa: då
           [okay we [go then
25         [((team runs onto B site, see fig 3))
26 Purple:          [(backa)   backa
                    [(back up) back up
27 Yellow: >ja hoppa ut<
           >I jumped out<
28 Blue:   uppå  balcony
           up on balcony

29         ((Green kills opponent on balcony))

30 Purple: ni[ce
31 Green:    [han [e död
             [he  [is dead
32 Orange:        [han e död
                  [he is dead
```

Excerpt 1: Contact B.

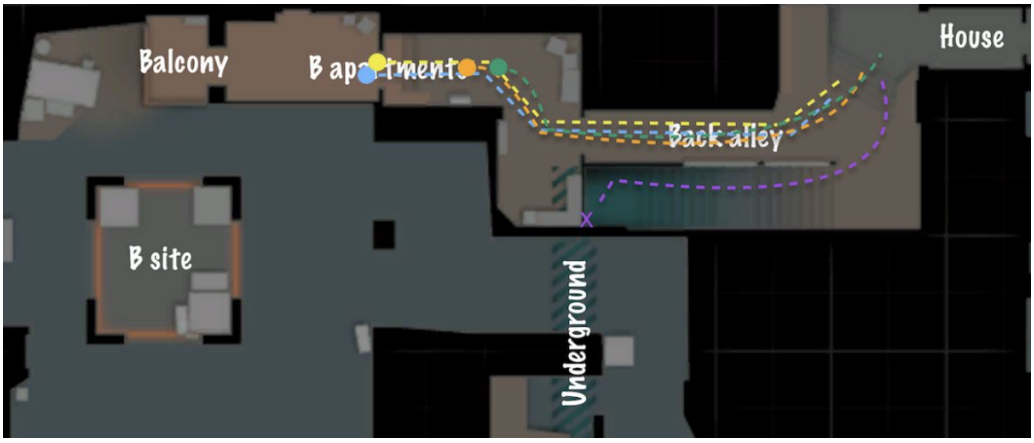

Figure 3: Team positioning as Purple dies and they rush B site *in Excerpt 1.*

In excerpt 1, Blue checks what they are going to do this round (line 1). The team is, at the same time, discussing how to start the screen recording (lines 2, 7, and 8). Yellow confirms to Blue that they are going to *B site*, but that it is “contact B” (line 3), which entails (loosely), that they run through *apps ramp* towards *B site* and start walking at *house*, so that the opponents will not hear them as they approach *B site*, and push when there is contact with the opponents (there are other variants of this, but this is how this team plays it here). Purple confirms and repeats, twice, for everyone to hear (lines 7 and 11). The round starts and the team moves towards *house* (lines 9–13, see figure 1). When they are close to house, they start walking, almost simultaneously. As the team has started walking (line 14) and move towards *back alley*, Purple announces that he is going to go to *underground* (line 15) and modifies the original choreography (see figure 2). When he says it, he runs for a couple of steps and jumps (line 16), which leads to him making stepping noises that opponents can hear, before he again walks down the stairs towards *underground* (line 17). Green acknowledges Purple’s re-choreographing (line 19). The rest of the team is walking towards *B apartments* and Orange comments sarcastically on the fact that Purple made stepping noises (line 20). Next, Purple engages an opponent in *underground*, dies and provides a callout (lines 21 and 23). Orange orients to the situation and tells the team to just run onto B site

(line 24) and they do it (line 25). Overlapping Orange's comment to run, Purple says that they should back up (line 26) and Yellow, orienting to that, says that he jumped out (line 27). Blue provides a callout (line 28) and Green kills the called out opponent on *balcony* (line 29). Purple, who is spectating, provides a positive assessment and Green and Orange call out the kill to everyone (lines 30–32).

The choreography has (from what the screen recordings indicate) been agreed upon before start. Blue checks and others confirm, and Purple verbally repeats the suggested choreography to make sure everyone has heard. However, Purple modifies the choreography and diverts from it, Green acknowledges it explicitly and Orange is only annoyed by Purple making stepping sounds. Both the choreographed run-walk-run that the entire team does and the (accidental?) noise that Purple makes, indicates that the dynamics of this choreography are very important for the team. There are also divergent choreographies being called at the same time when Orange gives a cue for when to rush B site and Purple creates another choreography (retreating), but there are no disputes regarding this. Yellow orients to Purple's alternative choreography by calling out that he has already taken an action that indicates that it was too late. In other words, they hear the choreographies and have agency regarding both modifications and choosing which choreography to follow. Nevertheless, these situations seldom lead to conflicts regarding what to do.

Excerpt 2 shows how players playing as CT choreograph the start of rounds without anyone providing a main choreography. Before the round starts, there is no explicit choreography of how they will divide themselves in the next round, but as the round starts, everyone seems to 'know' where to go (line 1 and figure 4).

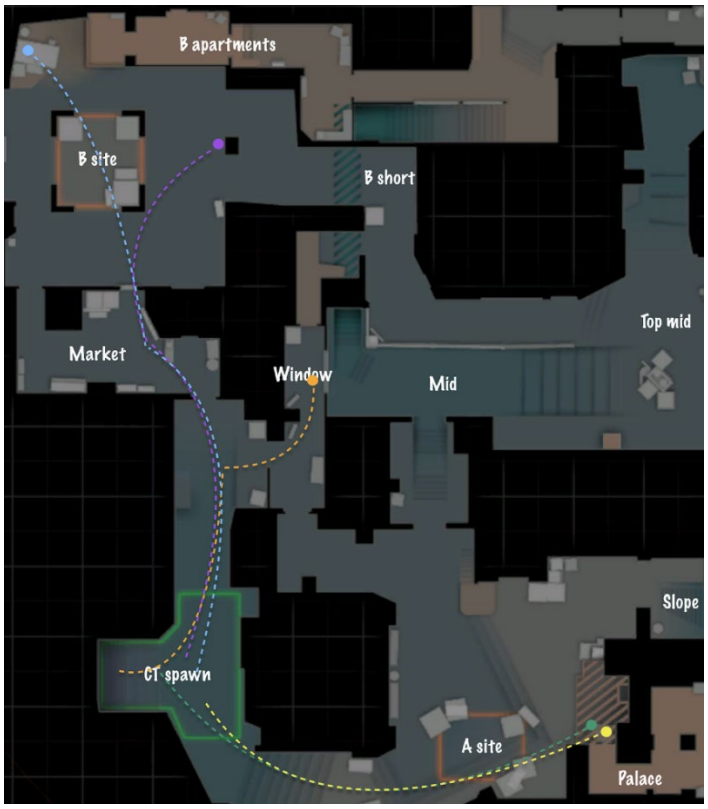

Figure 4: Movement and positioning in the beginning of the round in Excerpt 2.

```
01          ((round starts, Orange goes window, Purple and Blue goes B, Yellow
             and Green go A, see fig 4))

02 Orange: [en  topmid ren      [(    )
           [one topmid already
03         [((Purple continues running from B site towards B short and A
             site, see fig 5))
04 Green:                       [slope pushar en (typ)=
                                [one (guy) pushing slope=

05 Yellow: [=jå:   (.) palace (.) [tre   typer palace
           [=ye:s. (.) palace (.) [three guys  palace
06         [((Blue checks B apartments
07                                 [((Orange runs towards A site, see fig 5))

08 Blue:   [>bomben e a bomben e a<
           [>bomb  is a bomb  is a<
09         [((Blue runs towards A site via market, see fig 5))
10 Orange: de e  a
           it is a
```

Excerpt 2: It is A.

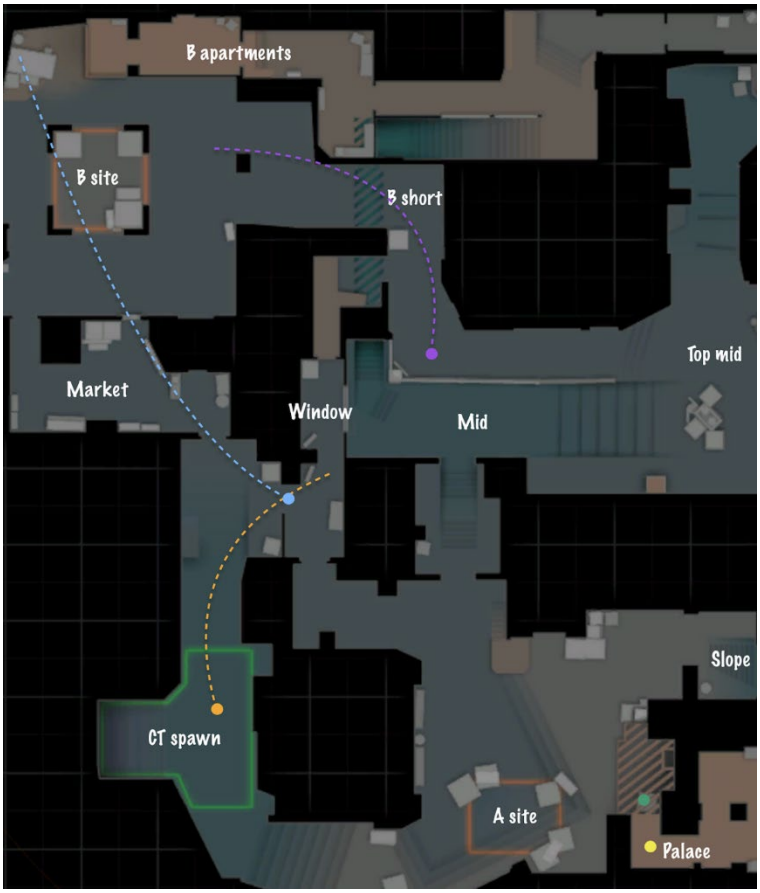

Figure 5: Responding to the call and moving towards A site *in Excerpt 2.*

They see opponents within seconds of the round having started, which is indicated by the callouts being provided on lines 2–5. Orange concludes, based on the information that the team gathered and shared, with a callout that the opponents are going for a plant at *bombsite A* (line 6). As soon as it becomes clear that there is much opponent activity at *A site*, everyone from the team (who is not at *A site*) starts running there from their positions (lines 6, 7, and 9, see figure 5).

There are seldom conflicts regarding how participants choreograph the start of rounds, even when no main choreography is provided, which indicates that the players take for granted that they 'know' the settings in which they operate, as well as that they 'know' their teammates, and that they count on and make use of these known-in-commons as they improvise their choreography. One interesting part of the choreographing of the start of rounds is that there appear to be no explicit leaders. Some participants more often propose a choreography in the start of rounds, but there is no rule or norm that participants orient to that indicates that some specific participant is the leading choreographer. Additionally, the fact that all participants can also modify the choreography, based on the basic elements, without creating conflicts, indicates that they have agency over the choreography and that choreographing team movements is a collective exercise.

Callouts as a choreographing device mid-round

Next, we exemplify the use of callouts as choreographing devices in situationally emergent tactics. The final excerpts (3–4) display how teams change the choreography mid-round. Excerpt (3) exemplifies how two players (Purple, carrying the bomb, and Yellow), after splitting up with the rest of the team at the start of the round (see figure 6), change the choreography mid-round because of situational contingencies (see figure 7). That is, their movements in interaction with the basic elements of relations (sounds and callouts) and space (their possibilities are slim when cornered in that area of the map) leads them to retreat and join the rest of the team at the other side of the map. The round starts with Purple and Yellow going to *top mid* and the rest of the team going towards *A site* (line 1, see figure 6).

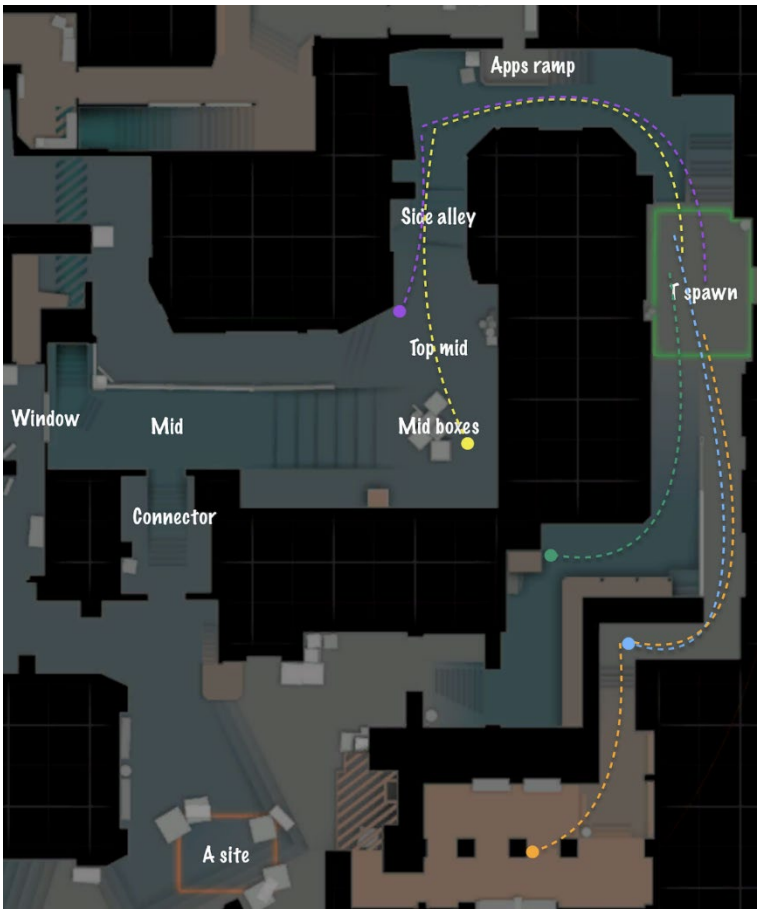

Figure 6: Movement and positioning in the beginning of the round in Excerpt 3.

```
01          ((Purple and Yellow go to mid, rest go to A, see fig 6))

02          ((Purple throws flashbang as they approach top mid))

03          ((Yellow rushes out behind the boxes and Purple stays behind the
            corner and scopes connector, see fig 6))

04 Purple:  så inget    mitt(en)
            saw nothing mid
05 Yellow:  en  e-   ((shoots)) window ((shoots))
            one is-             window

06          ((Purple moves and scopes window, Yellow shoots))

07 Purple:  var   där
            where there
08 Yellow:  he- vänster
                left

09          [((Purple deploys grenade and throws, Yellow shoots))=
10 Purple:  =[åj (vi-)
             [oh (fu-)
11           [((opponent becomes visible in the window, Purple turns and goes
12           behind the corner again))

13 Green:   [ja tror dom  e   på en eco
            [I think they are on an eco
14          [((Purple turns back towards top mid))
```

```
15 Purple: [ja tror at dom e bak mig        (.) ba- [kom tillbaka
           [I think that they are behind me     ba- [come back
16         [((turns around and retreats))           [((Yellow retreats))

17 Purple: tror at en e där uppe
           think one is up there

18         ((Purple retreats to T spawn and scopes apps ramp, Yellow stayed
19         behind at side alley, but is retreating while Purple scopes, see
           fig 7))

20         ((When Yellow is at T spawn, they go towards A, where Green and
           Blue are))
```

Excerpt 3: Come back.

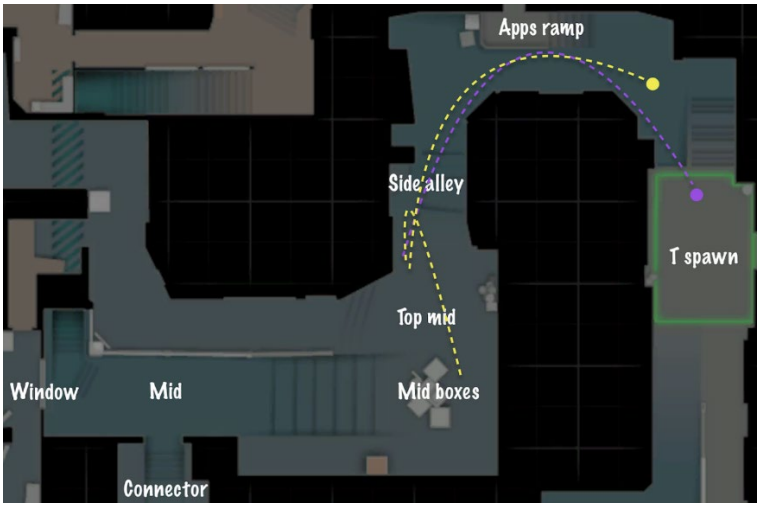

Figure 7: Purple and Yellow retreating in Excerpt 3.

Purple throws a flashbang to cover Yellow's rush behind *mid boxes* (line 2 and 3) when they approach *side alley*. Purple stays behind the corner to *top mid*, calls out that there are no opponents at *mid* and scopes *connector* (lines 3–4). However, Purple has not checked *window* and Yellow calls out (in the next turn after Purple has said that *mid* is empty) an opponent in *window* and he shoots several bursts at the opponent (line 5). Purple scopes *window* and asks for additional information on where in *window* (lines 6–7), which Yellow directly provides (line 7). Purple deploys a grenade to throw into *window* as Yellow keeps shooting (line 8). However, just as Purple throws the grenade, the opponent appears and Purple's throw is interrupted and he turns around quickly behind the corner again (lines 9–11). Green, who is at *A ramp*, speculates that the opposing team may be on an 'eco'-round (meaning that the opposing team has not bought expensive weapons, armor and equipment, line 12) and at the same time Purple turns back towards *top mid* (line 13). However, next he orients towards having heard steps nearby, behind him, and calls out to Yellow that he thinks they are behind him and that they should go back (line 14). Both Purple and Yellow start retreating (line 15) and Purple provides more precise info that an opponent may be at *house* or *apps ramp* (line 16). Purple positions himself at T spawn so that he can cover Yellow's retreat back to *T spawn* (lines 17–19). They both then move on towards *A site* and join the rest of the team there.

Yellow and Purple are, collectively, covering specific angles (they have their sights on points in the map where they expect enemies to appear) and providing callouts to each other that are based on the relationships between the basic elements that they orient towards. Additionally, they are sensitive to each other's callouts to be able to achieve a mutual understanding of the situation. They appear, based on the relationships between body, space, and relations, to realize that the opponents might be able to flank them (attack them from the side) and that they may not be able to break through with the bomb that Purple is carrying. Therefore, they, in that specific situation and with that specific information, choose to change the ongoing choreography while they still can, and move back to join the rest of the team and regroup. When they retreat, they choreograph their movements clearly and overtly to each other. Purple indicates (aims at) the place where he thinks he heard an opponent and shows to Yellow that he stays behind to cover his retreat as well. Only when Yellow is back at *T spawn* does Purple turn around and follow him towards *A site*.

The following excerpt (excerpt 4) displays how the team changes the choreography according to the information on opponent movements that they gather. The team has spread out to get an overview of the key positions on the map (line 1, see figure 7). The idea is to provide information to each other regarding opponent presence at their locations and players appear to orient towards them being accountable for giving or not giving information on the relationships between the basic elements that involves opponent movements and actions. In excerpt 4, the opponents take a long time to show themselves (line 2), which leads to the team speculating about what the opponents are up to (lines 3–4).

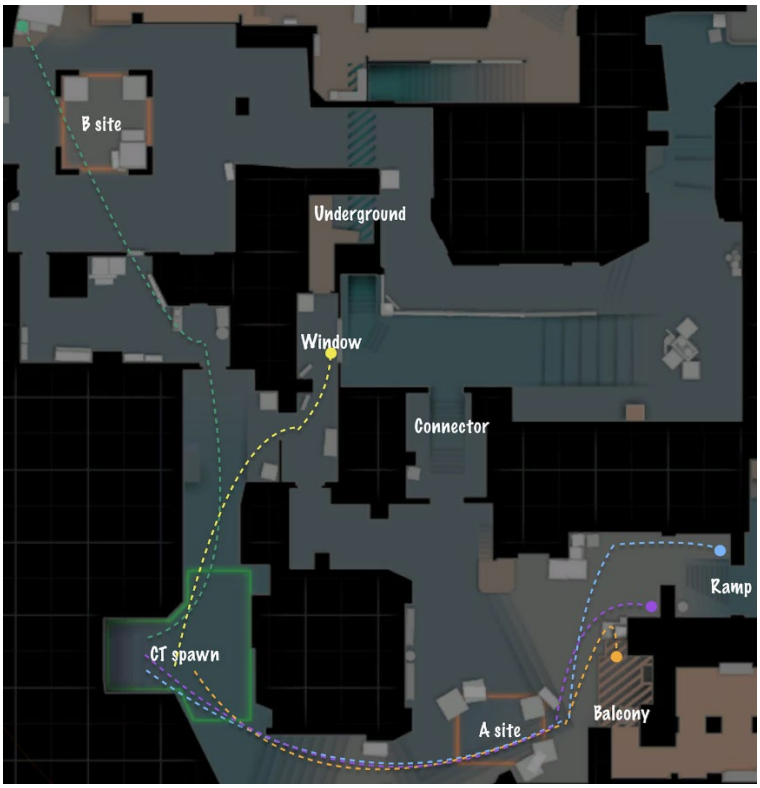

Figure 8: Team movement and positioning in the beginning of the round in Excerpt 4.

```
01          ((round starts, Green goes B, Yellow goes window, Orange, Purple
            and Blue go A, see fig 8))

02          ((15 seconds into the round, Purple checks ramp, Orange checks
            balcony, Blue goes inside ramp, Green holds B, Yellow holds
            window, see fig 8))

03 Purple:  ja tro: ba: at dom kommä be: ja
            I think that they are coming on be:
04 Blue:    ja tror de också
            I think so too
05 Green:   [men ja siir ingen  be:
            [but I  see  no one be:
06 Yellow:  [alla under=alla under=alla under
            [all  under=all  under=all under
07          [((Purple, Blue and Orange move towards connector and
             Underground, Green checks B apartments, see fig 9))

08 Purple:  under=[okej
            under=[okay
09 Green:         [UNder
10 Green:   (o)kej
            (o)kay
```

Excerpt 4: I think B.

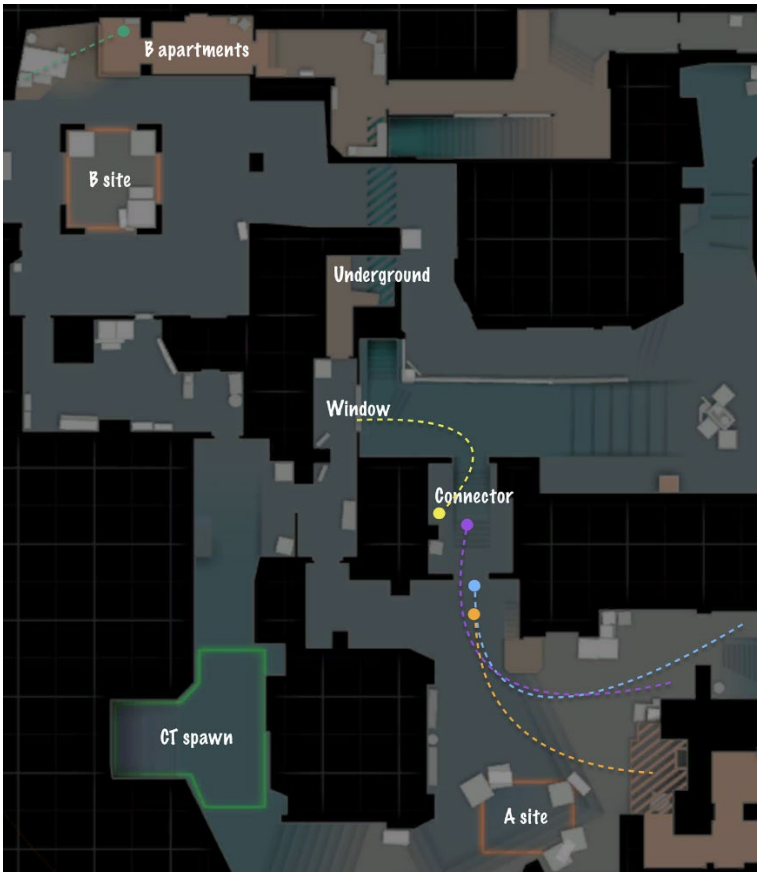

Figure 9: Responding to the call and moving towards under *in Excerpt 4.*

Green and Yellow provide information in overlap with each other (lines 5–6). Green responds to the speculation before and says that he cannot see anyone (opponents) at B site. Yellow sees several opponents in underground and provides a callout that he repeats two times to indicate urgency (line 6), which everyone responds to and start moving towards *connector* and *underground* or *B apartments* (line 7). As they act on the provided information and move towards a new position, they also indicate that they are surprised about the opposing team's choreography (lines 8–10).

Excerpt 4 shows how the teams usually play when playing as CT. They spread out to key positions and wait for the opponents to make themselves seen or heard. When they observe movement or sounds, they call it out for the rest of the team to know. In some rounds, the opponents split up and the information given in callouts in the CT team will be spread out. In excerpt (4), the opposing team stayed together and walked from *back alley* and through *underground* towards *connector*. Yellow, who was positioned at *window* saw them and called out. As soon as Yellow called the opponents' presence out, the CT team started moving quickly towards new positions that were relevant to the callout information (*connector*, *underground* and *B apartments*). There was continued speculation or questions before moving. Those were posed while moving, so they did not question the callout, they adhered to it.

Callouts are oriented to as strong choreographing devices that have an immense contextual and situational meaning that is only graspable and understandable in context. Additionally, callouts build on knowledge and information that the players perceive with regards to the relationships between the basic elements. For example, where and how they are moving their avatar in relation to the space and its possibilities with regards to both human and non-human actors, and what kind of movements are the opponents making (fast, strong, quiet, big, small, etc.) in that current space where the player is moving their avatar, which speaks to the relationships between the player's perceived possibilities and constraints of the in-game situation and environment. To make use of the relationships between the basic elements, players need to rely on previous experience, historical knowledge of the map and an expected known-in-commons regarding shared common-ground expertise on how to play the game in different situations. In excerpt (3), the callouts regarding *window* and the opposing team's possible presence behind the players led them to retreat, regroup and change the entire primary choreography that they chose to do in the start of the round. In excerpt 4, the callout was a single signal, based on information that one player gathered from the surroundings, that was provided with enough urgency to mobilize the entire team and change everyone's choreography.

Summary

Participants appear to orient to and choreograph their team movements based on their own and others' interaction with the body, the space, the dynamics, and the relationships between the basic elements in situated spaces and contexts. One specific verbalized action that relies on the interaction of the relationships of the basic elements is the callout, which is based on how participants orient towards the unfolding relationships of the basic elements. These relationships are oriented to by participants in an interconnected way and all participants that may have information of interest for the team's choreography express it in a sequential and accountable manner to achieve and uphold a mutual understanding of the current situation. That is, the choreography is not based on verbal communication (alone), but on the interweaving and

interdependence of each player's movements and actions on-screen in-and-through interaction with the basic elements.

The main findings are that the choreographing is done collectively and, largely, based on the information gathered in-and-through callouts that function as a choreographing device that does not explicitly provide instructions, but instead is a device for sharing information and, hence, implicitly makes the next actions accountable with regards to the information that was provided in the callout. The fact that much choreographing in the game is done by other means than verbal, is also part of why participants orient towards efficient and effective communication (see, e.g., Kiourti 2019; Rusk and Ståhl 2020). Choreography, both verbal and non-verbal, regarding own and others' next and upcoming actions is much faster to provide building on the expected known-in-commons and the basic elements; that is, the participants' own movements in-and-through interaction with the body, the space, the dynamics, and the relationships (Glad 2002; Smith-Autard 2014). As such, callouts are permeated by elements of body, space, dynamics, and relationships, both forming and being formed by these elements to collaborate and coordinate the game play.

Discussion

In and through conducting a study, from a participant's perspective, on online multiplayer game play by combining the methodological and analytical possibilities of EM with the theoretical notions of expanded choreography and Laban's movement analysis, we find that future studies may benefit from addressing team play from a choreographic and microsocial interactional perspective. This combination creates new possibilities for stepping beyond individualistic perspectives and studying coordinated collective human agency on the gameplay and the game environment. Analyzing team play through a focus on body, space, dynamics, and relationships made such agency observable, graspable and analyzable. The use of choreography for analyzing game play where the primary, instinctive, purpose for playing may be winning, might not be the sole purpose of choreography (although it can be executed in competitive purposes, see Schupp 2019). Nevertheless, there is, and can be, choreography without dance (Hildebrandt 2013; Monni 2018; Østern 2018) and we argue that the expanded notion of choreography enables us to utilize the structural possibilities of choreography to explore movements that otherwise might be taken for granted or overlooked when studying team play in multiplayer games. Choreography provides analysts tools for understanding the movement qualities and improvisation that participants do, as well as the tools to understand choreography as collective and not track from where the choreography began. Choreographing is dynamic and fluid, because of the complex interconnected relationships between the basic elements and, therefore, who choreographs is also in a constant flux, without creating (great) chaos and disarray.

The analysis of the choreography of in-game actions that take place in a fast-paced, complex social context, with information provided both on-screen and through the voice channel simultaneously, would not be possible without video data that captures the actual game play. Video provides us with the possibility of analyzing the situations repeatedly and, through that, understand how many events, activities and actions that may appear miniscule nevertheless, on aggregate, create what essentially is the

gaming experience. To get to a detailed and structured understanding of these actions through other means would be challenging, since the participants are (simply) playing the game and may not be able to explicate the mundane details of what they do, whereas doings and actions are directly observable (repeatedly) in-and-through video recordings. Nevertheless, although players might not make (all) their game play choices explicit verbally, they still manage to create intricate coordinated choreographies in a fast-paced game, suggesting that a shared knowledge and known-in-commons is foundational for doing the implicit choreography in-game. Video recordings alone cannot provide an all-encompassing final answer to the amazing machinery that is the choreography of game play in fast-paced multiplayer FPSs, but they can, combined with an analytical approach such as EM, greatly support our understanding of online team play by providing a detailed, empirically grounded account of players' actions. Accordingly, for the future of game studies, we suggest the use of video data of in-game interaction as situated contexts are "where we find our richest understandings of what computer game play is, and means" (T. L. Taylor 2015, p. 249). Thereby, we can continue exploring and adding to frameworks that offer a better empirically grounded understanding of situated in-game interaction as it is done then and there by the participants.

Conclusion

Situated strategy and tactics in CS:GO are a collective and (often) implicit endeavour. Participants share the responsibilities and leadership, as well as who is allowed to choreograph. This way of choreographing would not be available to the teams and the participants if they would not uphold and share a mutual understanding of what the known-in-commons are when playing the game in a coherent manner. They rely on having a common enough understanding of how to interpret situations that may be based in a community-shared understanding of how to play the game. This study does not directly engage with the problem of some players being silenced because they do not conform to the technomasculine norm of gaming communities. In addition to the discussion on social issues (marginalization and exclusion), we hope that we by showing the importance of sharing callouts and situational information can highlight the stupidity of not letting everyone on the team speak and thereby provide relevant information efficiently and effectively. Based on the results of this study, silencing players is detrimental to the team play, period. No one on a team where players do not dare to speak because of a real possible threat of harassment gets to experience the full experience of choreographing game play, collectively.

Acknowledgements

We wish to thank the participants that willingly shared highly personal data with us so that we, as researchers, better could understand what online gaming was to them. We wish to thank the Swedish Cultural Foundation in Finland and Högskolestiftelsen i Österbotten for research funding and travel expenses on behalf of Rusk and Ståhl during the process of writing this paper.

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Notes

[1] Here, we use the concept of device in an ethnomethodological sense. That is, devices are members’ constructs, which they use in making sense of and acting in the world (Garfinkel 1967). They may, for example, be interactional resources that are oriented to and used for specific practices that are trans-situational. This way of employing the concept of devices is not to be mixed with the concept of choreographic device as used within dance studies (Smith-Autard 2014).

Appendix 1

The transcription system used in the article is based on the Jefferson (2004) system.

`(.)`	a micropause less than 0.2 seconds
`(0.5)`	a silence indicated in tenths of seconds
`[text]`	overlapping talk or co-occurring embodied actions
`TEXT`	louder talk than normal
`text-`	cut-off or self-interrupted talk
`>text<`	faster talk than surrounding talk
`<text>`	slower talk than surrounding talk
`:`	Prolonged sound
`((text))`	non-verbal/embodied activity/transcriber's description of events
`(text)`	likely hearing of talk
`(Sam) / X`	the identity of speaker is not clear
`(  )`	inaudible
`=`	talk/embodied activity latches on previous turn
`hh (hh)`	hearable exhale
`hh (.hh)`	hearable inhale
text	English translation in italics
`text`	Callout