1 What Is Talk and Why Do Children Need It?

Introduction

Online text chat is *written* social interaction, a unique and constrained form of talk. Children appear to have no difficulties adapting to it, as evidenced by their presence on social media. They are clearly undeterred by chat's constraints and drawn to its affordances. This volume focuses on how children interact online when using social media and video games, where written interaction is a component. Their language and interactional behaviours inevitably change as they creatively adapt to new forms of interaction. Written interaction is also more likely than spoken interaction to compromise children's safety, given the anonymity it provides to online predators. Despite these concerns, interaction by textual means remains the most popular form of interaction for young people.[1]

To understand written talk, we need first to understand face-to-face talk and the role of language, as children draw on knowledge of their first mode of interaction in the online context. The resources that we need for successful interaction differ according to whether our talk occurs face-to-face, on the telephone or online. This is where conversation analysis can assist us in appreciating how talk differs according to the interactional medium and setting. Conversation analysis techniques have been used since the 1960s to reveal how speakers organize their talk as a social achievement, which they construct jointly with other speakers. The first landmark publications by Harvey Sacks, Emanuel Schegloff and Gail Jefferson, founders of conversation analysis, have had enormous impact in applied linguistics and in research more generally.[2] These now highly influential analytical techniques were originally developed

[1] The Statista website indicates that Snapchat was the most popular social media tool for US teenagers in 2017, though this varies across countries (Statista, 2021c). In Germany, WhatsApp was the most popular tool among ten- to eighteen-year-olds in 2019, with Instagram and Snapchat, the next most popular (Statista, 2020). A survey of teenagers by the Pew Research Center identified YouTube, Instragram and Snapchat as the most popular social media tools (Anderson & Jiang, 2018).

[2] Published in *Language* in 1974 and entitled 'A simplest systematics for the organization of turn-taking for conversation', it is the most cited and downloaded in the history of the journal according to Joseph, B. D. (2003). The editor's department: Reviewing our contents. *Language*, *79*(3), 461–463.

to examine face-to-face and phone conversation but have since been applied in a variety of contexts, from business meetings to online social exchanges. Their recent application to various children's online interaction contexts has also provided important insights into young participants' interactional design and how they adapt linguistically to online interaction (e.g. Danby et al., 2018a; Davidson, 2012b).

Some recent investigations of social media communication by Turkle (2015) and Twenge (2017) have sought the opinion of users and experts directly, through surveys and interviews. Other researchers use quantitative methods and tests to explore connections between a type of social media activity and its impact on children's language and cognitive functions (e.g. van Dijk et al., 2016). This volume turns to the interactions themselves to look for patterns and answers. Conversation analysis can reveal how children of different ages produce, organize and interpret online talk to achieve specific conversational actions which may not be obvious to them. This study will provide us with a snapshot of children's online interaction through analysis of posts by children of various ages. Hence, the study will not tell us about how individual children change and learn over time, which would require a different type of study. However, we gain insights into how children of different ages and linguistic/cultural backgrounds interact online with other children and adults and what the implications are for their development. Children have the capacity to learn all the time and in any context, including informal digital contexts. So, it is urgent that we pay closer analytical attention to the language they use online and the constraints and affordances for learning of these contexts.

Screen Time Concerns

Children's digital contexts receive regular attention in the media and research, with conflicting reports on whether 'screen time' is good or bad for children. Social media, video games and television, on mobile devices, game consoles, computers or television sets, are often all considered part of the mix of 'screen time'. However, to understand the impact of these various devices on children's development, a focus on how language can be used by children in digital interaction, within specific media and interactional contexts, is required.

This volume focuses on the most 'interactive' forms of screen time, which involve children interacting socially with others as an integral part of the online activity. Social media interaction is obviously one of these and so are many video games. By exploring the unique language and architecture of social media and video game interaction, one of this volume's objectives is to assist readers in identifying the most beneficial online resources and technological-interactional configurations (Tudini, 2020) for children. By focusing on children's online chat, we gain a snapshot of the language that they use during

interaction in a multiplicity of online environments, including how they adapt to written interaction. For example, how children manage online predators' grooming behaviours linguistically and interactionally in chat has received scant attention in research, despite the exponential rise in child abuse imagery on the internet (Internet Watch Foundation, 2015; WeProtect Global Alliance, 2019). Detailed analysis of children's language use when encountering online grooming behaviours by paedophiles is therefore attended to in this volume, mainly in Chapter 7.

Video game language and interaction is a focus of this volume because it is often a dominant part of children's social life. For example, children and caregivers are under considerable pressure to purchase a game console or other device which allows gaming or interaction via social media. Recent statistics in fact show that approximately nine out of ten of Australian homes have computer games, with children playing an average 100 minutes per day (Brand et al., 2019). This is despite concerns about video games' impact on children's physical, cognitive[3] and psychological well-being. Cognitive development of children goes hand in hand with their linguistic development. The Australian Department of Health recommends that children under the age of two not engage in any screen time at all. This recommendation is based on advice from experts, including paediatricians and speech pathologists, due to numerous concerns, such as evidence suggesting that television before the age of two contributes to language delays in children. There is also research that links increased use of handheld devices to speech delays in children under two (American Academy of Pediatrics, 2017, May 4). Specifically, there is evidence that the more time children under two years old spend playing with smartphones, tablets and other handheld screens, the more likely they are to begin talking later. A recent study used magnetic resonance imaging to compare children's resting-state connectivity between the left visual word form area and other brain regions, with screen time and reading time applied as predictors. It found that time spent reading was positively correlated with higher functional connectivity with left-sided language, visual and cognitive control regions while screen time was related to lower connectivity with these regions. Based on these findings, researchers thus emphasized the importance of children reading to support healthy brain development and literacy and limiting screen time (Horowitz-Kraus & Hutton, 2018).

Other concerns relate to how children's gaze is disrupted in video interaction. Screen interaction is at best a two-dimensional form of communication, which deprives children of experience in reading others' faces, voices and

[3] Cognitive development is defined by the online Oxford Dictionary as 'The mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.' www.oxforddictionaries.com/definition/english/cognition.

bodies directly, as occurs in three-dimensional face-to-face interaction. Computer and smartphone video conversations would appear to provide access to eye gaze, an important component of interaction. However, the way that the screen constructs gaze is not direct, as it is mediated and disrupted by the technology. Users are unable to look each other directly in the eye, for example, especially in a group setting, where users often resort to waving to get interlocutors' attention. Video interaction is therefore likely to alter children's perception and misrepresent interlocutors' gaze on screen, with possible consequences for their developing language and social abilities.

The sharing of context and body language by geographically distanced users during video interaction is also problematic as it is usually only partial and reliant on what is accessible on the screen and mediated by the technology. While it is true that participants' on-screen contexts are being shared, Malinowski and Kramsch (2014) note that the computer screen 'fixes the user in disembodied, spectatorial relation to a removed "scene" on the other side' (p. 159), which alters children's perceptions and interactional possibilities.

Other more serious repercussions for excessive screen time have been identified by research studies in France, UK and Australia, which have found that excessive screen time, including television, could hinder children's development (Hinchliffe, 2017, September 26). It also deprives them of the actual physical world which they access through their five senses and which is so important in their linguistic development. It is therefore unsurprising that some of the developmental problems identified by these studies include an inability to read facial expressions, which leads to reduced social abilities and poorer friendships. These problems are also features of Autism Spectrum Disorder, which has lead French researchers to consider developmental delays in children up to the age of four as a form of 'virtual autism' (Cabut & Santi, 2017, June 27), due to excessive screen time and insufficient contact with human beings in the real world, but see Strouse (2019) for a review of research on early childhood language learning through digital media.

Despite these red flags from health experts and the media, video games and social media are a significant part of family leisure time, for both young and old. There are also countless studies by education experts which suggest that children's engagement with digital devices is beneficial (e.g. Danby et al., 2018b; Gee, 2003). Most families are therefore unlikely to ban these resources, but some guidance on how best to use them, in a principled way, is urgently needed. By analysing how children engage with online interaction, including its affordances and constraints, this book may assist families and teachers to integrate technology into children's leisure time more knowledgeably, avoiding its pitfalls while harnessing its riches. Classification boards also have a fundamental role in supporting the community in this task.

Beyond Ratings

While many of us enjoy gaming, both adults and children, the gaming landscape changes constantly. Our decisions on video game purchases and subscriptions are sometimes based on reviews and ratings. However, word-of-mouth recommendations are likely to be the most common reasons children choose specific video games and social media chat softwares. Adults are more likely than children to make use of security and classification categories produced by government bodies, which relate mainly to game themes, violence, sex, language, drug use and nudity[4]. The Australian Council on Children and the Media (ACCM) also provides detailed reviews of gaming apps and films by child development experts (Children and Media Australia, n.d. b). Interestingly, this same organization's recent analysis of national laws showed that children's privacy when using websites and apps is not protected (Children and Media Australia, n.d. a). Despite these resources, children's tastes may however stray from available guidelines under pressure from peers. Without caregivers' and teachers' intervention and guidance, video game ratings and guidelines are not necessarily taken seriously by young users, with under-age video game players frequently taking on R-rated games such as *Grand Theft Auto* or popular MA 15+ games such as *Assassin's Creed*. Additionally, online safety and digital addiction issues are not addressed by ratings. For example, in its submission to the Australian Federal Government's recent review of the National Classification Scheme, independent think-tank Australia Institute recommended that an R 18+ rating be applied to 'games that replicate the psychological elements of gambling', including in-game incentives and rewards (Biegler, 2020). This is due to concerns with digital addiction and young people's use of smartphones for gambling.

While gamers are most likely to select their interaction and gaming tools according to their entertainment value and word-of-mouth recommendations, it is possible to evaluate these tools based on their language and interactional features. It is only by knowing what online interaction *is* that we acquire

[4] See Australian classification board (www.classification.gov.au/Public/Resources/Pages/Parents.aspx#6) and British Board of Film Classification (http://www.bbfc.co.uk/). The Classification Board assessments also tend to be limited to commercial game packages rather than internet-based games, which are regulated by separate bodies (e.g. the Broadcasting Services Act (BSA) administered by the Australian Communications and Media Authority (ACMA)). The Virtual Global Taskforce (VGT) (nationalcrimeagency.gov.uk/virtual-global-taskforce) is a global initiative involving numerous countries for the protection of children from online abuse. There are also national government bodies such as the Office of the Children's e-Safety Commissioner (esafety.gov.au/esafety-information/games-apps-and-social-networking), which as the name suggests, provides general guidelines and support on staying safe on the internet, with information on popular games, social media and applications. Another significant children's cybersecurity website for caregivers and children is ThinkUKnow in UK (www.thinkuknow.co.uk/) and Australia (www.thinkuknow.org.au).

a better sense of the place of social media and video games in children's ever-crowded lives. We are also better equipped to identify the titles and interactional settings which are likely to provide the most beneficial and safest experience for children. Written interaction is the dominant social interaction mode in social media, whether in Snapchat, Facebook or other social media tools. It is therefore important to know how chat works before we can assess its place in children's lives. Given children's regular use of social media and games, there is a gap in our knowledge of the nature of language and interaction in these environments which classifications and e-safety websites alone cannot fill.

Is Chat Speech or Writing?

When the first text chat tools were introduced, people described chat interaction as conversation in slow motion (Beauvois, 1992), or to use David Crystal's (2006) term, 'netspeak', suggesting that it is a form of speech. In fact, it is neither speech or writing and varies both interactionally and linguistically, according to whether two or more people are chatting or whether the chat occurs in real or delayed, quasi-synchronous time (see Garcia & Jacobs, 1999). Chat adopts the conventions of writing, such as script and punctuation, while borrowing heavily from the language of spoken conversation. When children interact online, they do so mainly in writing, through various forms of text chat, including video game chat.

Despite the availability of semiotic resources such as images and emojis, which are unique to the social media chat context, written interaction is significantly more constrained than spoken face-to-face or telephone interaction. In face-to-face interaction we have access to voice, facial expression, body language, touch and physical context to achieve understanding. We can broadly distinguish the conversational resources which are accessible in spoken face-to-face communication as kinesic and prosodic. Kinesic resources include various aspects of visual communication and space sharing such as gesture, posture, stance, touch, facial expression, eye contact and gaze. Prosodic elements of spoken interaction include accent, stress, volume, pitch, intonation and rhythm. Furthermore, from a conversation analytic point of view, the presence of pauses and sound stretches also contributes to the prosodic richness and meaning-making of spoken interaction, including on the phone. In phone conversation we at least have access to all the resources related to voice. In written interaction we have none of these interactional resources. We rely almost entirely on text and an online context which may be supported by emoticons, emojis, hyperlinks, images and videoclips to achieve understanding. And yet, written interaction, especially texting, is becoming the dominant form of social interaction, especially among teenagers. Twenge

(2017) reports that based on national US surveys, high school seniors spent an average 2¼ hours and eighth graders 1½ hours per day texting on their mobile phone. Teenagers are more likely to organize dates, social events or collaborative schoolwork using written online communication rather than face-to-face or phone interaction, as previous generations would have done. This has huge implications for how children are growing up in this brave, new, always connected world. To appreciate the implications more fully, some widely known practices and learning theories will assist us in understanding why face-to-face social interaction is so important for the linguistic and cognitive development of children.

Why Children Need Face-to-Face Interaction

Social interaction through talk begins at birth. Even though babies are unable to speak when they are born, they can distinguish speech from non-speech and communicate by producing sounds, including crying. Parents and others instinctively talk to babies and babies respond to people's voices and faces. In addition to reading and emotional attachment, talk is in fact widely accepted as the foundation for children's language development and learning, whether this occurs in informal settings like the home or in the classroom. The centrality of talk for children's development is reinforced by cases of children who were raised in isolated conditions (Curtiss, 1978; 1989; Lenneberg, 1967). These children exhibited irreversible abnormal language development and other serious physical and psychological health problems. The author's observations of a two-year-old family member show how important listening, observing and imitating adults' conversations is for children's language development. Specific words and phrases are singled out and used by toddlers when they become relevant or interesting to them (see Saxton, 2017, for a review of research on the role of imitation/repetition in children's linguistic development). Play has also received considerable attention from researchers for its role in children's development during interaction with adults and peers.

How Children's Play Promotes Learning and Development: Vygotsky's ZPD

Soviet psychologist Lev Vygotsky (1896–1934) introduced the concept of the Zone of Proximal Development or ZPD, which became widely known in educational circles in the West. The notion of ZPD was originally based on children's learning and development during interaction with adults and other children. ZPD is exhibited especially during play, where children perform beyond their current abilities, as explained by Vygotsky (1978):

> We propose that an essential feature of learning is that it creates the zone of proximal development; that is, learning awakens a variety of internal and developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. (p. 90)

Vygotsky and other experts observed that interactions with people stretch children's abilities to accomplish tasks beyond what they can achieve alone. The concept of ZPD also gave rise to the notion of 'scaffolding' or assistance by a teacher or more competent peer. Scaffolding allows people to adapt their support to children's individual learning needs, at the appropriate level, thus generating ZPD. For example, when toddlers notice a new relevant word or phrase in adult talk, they may repeat it. This may be followed by adults' repetition and use of the new vocabulary item, to reinforce and approve the child's learning. This repetition is sometimes a form of indirect correction[5] of the child's pronunciation, as a form of linguistic scaffolding which is appropriate and relevant to the child at that specific moment.

Vygotsky specifically notes the importance of play as contributing to children's development, which is relevant to our discussion of digital games:

> play creates a zone of proximal development of the child. In play a child always behaves beyond his average age, above his daily behaviour; in play it is as though he were a head taller than himself. (p. 102)

Vygotsky's insights have been applied and further elaborated in a variety of contexts, especially in classroom contexts. Vygotsky's principles suggest that the best games are those that involve talk. It comes as no surprise that interaction through talk gives children the opportunity to develop their language, interpersonal skills and interactional competence, a fundamental life skill. Studies have shown how, at an early age, children develop their interpersonal and interactional competence through talk with their peers. This includes the ability to negotiate, resolve conflicts, teach one another and develop socially as human beings. Such behaviour is conducted using language; hence, talk is a visible way in which children develop socially, linguistically and culturally.

Reading aloud to children, from the youngest age, is also known to promote learning and ZPD (see Antonacci, 2000; Fox, 2001), especially around language. In addition to the vocabulary and linguistic structures children acquire through reading, caregivers have the opportunity to provide their undivided attention and affection towards their children, while using the language of books as the basis for interaction and linguistic development. However,

[5] Correction is one type of repair which is both initiated and completed by the recipient (other-initiated other repair) in CA terminology.

research on the link between language, interaction, play and ZPD that might occur during video game and social media interaction is still in its infancy.

According to Gee (2007) and other researchers (e.g. Marone, 2016), there is evidence that ZPD occurs during game tutorials, when gamers help each other and when the game requires gamer acquisition of specific skills prior to progressing to the next level. As gaming interactions between peers generally occur in real time, Vygotsky's theories appear relevant since they were developed in relation to real time face-to-face interaction and the ability for feedback and scaffolding by more knowledgeable others to occur at the appropriate time. The application of conversation analysis (CA) to online interactions sheds light on how scaffolding and ZPD are achieved through microanalysis of learning behaviours. Specifically, the analysis will consider how interactional resources associated with learning, such as repair and question-answer adjacency pairs, are deployed by users to scaffold one another and promote ZPD, in selected online social contexts, both synchronous and asynchronous. Repair and questions are the most obvious indicators of learning behaviours but others are likely to become evident. While the contexts under examination are social, not institutional or educational, children are known to be learning all the time, including in online contexts.

Evidence also suggests that expert-novice roles and scaffolding behaviours are especially relevant to interaction between gamers, as some children tend to be more experienced at the same game than others, including adults. This is true also of virtual worlds such as *Club Penguin*. Expert-novice roles are therefore interchangeable between peers, or between children and adults, where children have greater expertise than adults. Some children may also watch expert gamer peers' YouTube videos to gain further knowledge (see Chapters 5 and 6 on the Ethan Gamer YouTube setting). Findings from the analytical chapters will determine whether there is evidence of children making expert-novice roles and peer scaffolding relevant by supporting one another and co-constructing their knowledge of the game or social media context, by deploying conversational repair, questions and other interactional resources. The analysis is focused on interaction between children but will take 'heterogeneity of expertise' (Thorne & Hellermann, 2015, p. 282) and interchangeability of roles into consideration, as level of expertise is likely to vary according to participants and interactional context.

It may, however, be difficult to see the relevance of Vygotsky's theories and CA to asynchronous online interactions, given that there are sometimes significant delays between posts. Chapter 6 will therefore consider whether asynchronous interaction softwares such as YouTube comments show evidence of learning behaviours despite the time delay between posts in these contexts.

How Children Learn Their First Language and the Role of Conversational Repair

We take it for granted that young children learn to talk from an early age. Parents' and other people's input is crucial to the process of learning to talk, from infancy onwards. This input comes in many forms and includes thinking out loud while engaging with the child, talking and interacting directly with the child, repetition of relevant key words and phrases, reading, singing and countless other interactive activities. Facial expression, voice, gesture and body language are key elements of children's interaction with adults and other children. As noted earlier, without face-to-face social interaction with adults, infants' intellectual and emotional development risks being held back, as they would lack opportunities to engage with other human beings and develop their language.

Adults' talk is a model for children. As discussed earlier, children use and experiment with new language they hear from their parents, other adults and peers. As children develop their language beyond the preverbal stage, adults engage directly with children's talk through the process of conversational repair. Repair takes many forms, including correction of a specific item in the child's talk or allowing the child to correct themselves by signalling a problem in their talk. For example, the parent may repeat a problem item in the child's talk in the correct way, which allows the child to notice a difference between what she said and what the parent said. The child may repeat the problem item in the correct form if it causes problems in the progress of the conversation. Otherwise, she may simply proceed with the conversation and remember the suggested item for another occasion. Example 1.1 shows how this form of conversational repair (correction) occurs in a face-to-face context.

Example 1.1

1 Alex: I had all my breakfast and I **drinked** up all the milk
2 Matthew: You **drank** the whole bowl?

(Saxton, 2017, p. 105)

In Example 1.1, the father Matthew's act of correcting the verb 'drinked' in his son's speech (turn 2) is not obvious, as it is embedded in the conversation (see Jefferson, 1987). The conversation in fact appears to continue without further interruptions, with the father simply seeking confirmation from the child that he drank the whole bowl, without openly drawing attention to the grammatical error. In this case, the child may not notice the correction as it does not interrupt the conversation. Or if he does notice it, there is a chance that the correct form of the verb 'drank' will be included in his speech on a future occasion.

In Example 1.2, the correction is once again about language, but also about interacting politely; hence, it is a pragmatic issue (Kasper & Rose, 2001). In

this correction the mother makes it clear that the child's request that she turn on the toilet light is inadequate.

Example 1.2

Jo/age 4
Child has just taken off her recording jacket and gone through to toilet; she than calls to her mother:
Ch: ↑Put on the li::ght.
(.9)
M: Pa:rdo:n?
(.)
Ch: Put on the light please
(.)
M: () better ((then M puts on the light))

(Wootton, 2017, p. 173)[6]

In this example, the mother initiates repair on the child's request, as there is a missing element, 'please', which she evidently wishes the child to incorporate in her talk, to learn how to produce requests politely. Unlike the previous example where the conversation went ahead despite the embedded correction, in this case the conversation cannot proceed until the child provides the missing element 'please'. Furthermore, by using this repair initiation strategy, the mother is also withholding turning on the light, until the child uses 'please'. The repair processes presented in Examples 1.1 and 1.2 mirror to some extent what occurs in Western classrooms when children interact with teachers or at home with parents and are an important venue for ZPD and adult scaffolding of children's development of their language and talk. There are countless ways for children to learn the language required for social interaction from adults and there is a substantial body of knowledge which indicates that this also occurs with peers in face-to-face contexts. Conversational repair during face-to-face interaction is just one of the most audible and visible ways in which learning is promoted, though children may not necessarily always alter their language immediately. It is a fundamental tool for human beings to achieve understanding and for young children to develop their language and social abilities.

Repair and Learning in Online Chat

The fact that text chat leaves a permanent record on the computer screen, with notable exceptions such as Snapchat and *Club Penguin*, has linguistic, social and learning advantages. The conversation suddenly becomes visible and can be reviewed by users, including children. So, for example, they can pick up an

[6] For additional examples, see also Wootton (1997).

earlier section of the conversation with greater ease than if they were engaged in voice conversation, which fades once each word or turn are pronounced. The author's own research has shown that this makes text chat especially suitable for foreign language learning (Tudini, 2010; 2013). The 'visibility' or 'visual saliency' of written conversation allows adult participants to review, make sense of and make adjustments later in the conversation where needed, to get their message across. This may lead to different types of conversational repair, which we know is conducive to learning. In Example 1.3 we see very clearly that written conversation between speakers of Italian as, respectively, a first (L1) and second language (L2), may move into a more pedagogical (learning) orientation when correction occurs.

Example 1.3

Dorothy: che ha successo
what happened (with incorrect auxiliary verb 'ha')
Giovanni: **che è successo**
what happened (with correct auxiliary 'è')
Giovanni: era caduta la linea
the line had gone dead
Giovanni: nn lo so perchè
I don't know why (with chat abbreviation of non)
Dorothy: ☺
☺
Dorothy: sai forse devo venire piu spesso qui sopra a parlare con te cosi mi imparo per bene
you know I have to come here more often to talk to you so I learn properly

During their conversation about losing the connection, the L1 speaker of Italian Giovanni notices that Dorothy's question includes the wrong auxiliary verb in 'che ha successo' (post 1). He provides the correct version in line 2, without any explanation, and then continues the social-technical conversation about the lost connection. Dorothy's smiley face in line 5 acknowledges and expresses appreciation for the correction. Dorothy in fact follows this with further recognition that interaction with the L1 speaker in the chat environment enhances learning when she states, 'so I learn properly'. In this case, the correction occurs immediately after the correctible item. However, given the visibility and reviewability of the conversation, corrections often occur many posts later without disruption.

While we have plenty of evidence that written conversation tends to promote language and intercultural learning during one-to-one adult interaction (e.g. Tudini, 2007), there is a paucity of research on the language children use during social media and game interaction. Additionally, research has found that text chat can be an equalizer, which is especially relevant to children who are developing their social abilities. It apparently can provide greater

empowerment to shy learners, who tend to participate in conversation more actively than if they were in a face-to-face conversation, where confident speakers tend to take over (Kern, 1995; Warschauer, 1996). This may in part explain the high level of children's engagement with social media and video games, despite the many risks.

We know that children learn all the time and that certain video games may present all manner of beneficial cognitive challenges. However, combining games with social interaction is likely to enhance the gaming experience for them. Evidence suggests that as long as children are engaging in spoken or written talk, they are more likely to learn something new from others, including online. As we have seen, in addition to promoting their cognitive development, interaction promotes their development as human beings. We do need to be aware, however, that where only text interaction is involved, children need to adapt to a new environment and find unique resources for socializing and playing with other children. For example, they do not have access to non-verbal resources such as body, gaze and voice which are fundamental elements in children's interaction, socialization (Goodwin, 2017) and language development.

Non-Verbals as an Interactional Resource for Children

As noted earlier when distinguishing kinesic from prosodic features of conversation, interacting with others face-to-face is a complex task which involves much more than just words. Whether we talk or remain silent, we use our faces, voices, hands, body and surroundings to communicate with other human beings (Streeck, Goodwin & LeBaron, 2013). Children learn how to use all of these physical interactional resources through regular contact with adults and other children from birth onwards. Conversation analytic studies have in fact revealed that from the age of twelve months onwards, gesture, vocalizations and laughter are an integral component of children's interactions (see Filipi, 2009; Walker, 2017). However, these resources, some of which are discussed in the next section, are unavailable to them in text chat.

Facial Expression

The face is particularly important in conveying (or hiding!) how we feel about a topic during talk. It may also reinforce what we are saying through the way we use our eyes, eyebrows and mouth, for example. Children are acutely aware of facial expressions of adults and peers during face-to-face interaction. Smiles or frowns are the most common examples of how the face expresses emotions and were among the first emoticons to be developed by online chat users, who used

punctuation marks to create the frown :(and smile :). It is of course no coincidence that the term 'emoticon' is composed of two words 'emotion' and 'icon'.

The eyes are a crucial element of gaze, without which turn-taking in face-to-face conversation would be compromised. It is common for speakers to look directly at their interlocutors at the point when they have finished talking, in expectation of a response. Gaze may also determine who speaks or is targeted in group conversation, when members of the group turn to look and suggest that a specific person take the conversational floor. Gaze may thus be co-ordinated with the whole or some parts of the body, especially posture, in these circumstances. Twitter users adapted to the absence of gaze and other non-verbals in group chat by introducing the @ symbol combined with a nickname at the start of a post to clarify the intended addressee of a tweet. In *Club Penguin* too, users tend to use one another's nicknames or real life names where a specific person is being addressed, to avoid confusion and promote conversational coherence in group chat.

Another one of the most frequent uses of gaze is to show the speaker that you are paying attention to what they are saying, to avoid seeming impolite. Avoiding eye contact with an interlocutor during talk may be problematic and subject to a number of interpretations, depending on the topic of discussion and relationship between speakers. For many it may indicate shyness or a lack of sincerity, confidence and respect on the part of the speaker. Speakers may also avoid looking at individuals in a group situation as an indirect way of excluding them from the conversation. Similarly, since gaze is unavailable as a resource, lack of responsiveness by chat users may be seen as impolite and needs to be accounted for by unresponsive recipients. This concern promotes the posting of short posts if the software does not indicate that a message is in the process of being composed, as permitted by WhatsApp.[7]

Readers are sure to think of many other functions of the face, especially eyes and gaze, in conversation, based on their own interactions and how we deal with lack of gaze in online contexts. Researchers such as Lorenza Mondada, Charles Goodwin, Marjorie Goodwin and others, have pioneered important research on the role of gaze, the body and the physical environment in face-to-face interaction, including among children (C. Goodwin, 1981; M. H. Goodwin, 2017; M. H. Goodwin & Kyratzis, 2007; Mondada, 2012).

Gesture

Hands and arms are used in face-to-face interaction to communicate meaning through gesture. While gestures may be used differently across cultures, they are another important element of face-to-face interaction,

[7] For further findings on chat users' adaptation to missing non-verbals see Tudini, 2015.

especially young children (Filipi, 2009). For example, they may be used intentionally or unintentionally, to reinforce a speaker's excitement, anger or other emotion. Gestures which involve the fingers allow young speakers to point to a relevant item in their immediate physical space, to promote meaningful talk. The way people use their hands and arms during talk may also signal their awkwardness or lack of confidence, through erratic movements, for example. And, of course, these bodily actions work in tandem with other actions involving voice and face. Again, social media chat users need to adapt to the invisibility of their hands and arms by using other, usually linguistic means. In adult online interaction this may be achieved through deixis, a type of linguistic pointing to both a physical or virtual context through pronouns such as 'here' or 'there', 'you' or 'me', or through the use of emojis. Depending on the age of the child, these linguistic resources may also permit children to adapt to the missing non-verbals of chat.

Voice

Voice, including breathing, is one of the most important components of face-to-face talk, as without it, communication could only occur through facial expressions, gaze and gestures, as in sign language. Together with the body, voice provides us with information about the likely gender, age and cultural background of the speaker. This has safety implications for children interacting online, as without access to voice, they are unable to work out the age of other users or identify online predators if they meet one. How a speaker breathes during or between talk may reveal information about their state of mind. Silences and pauses in a conversation may also provide information about how speakers feel about the conversational topic, as may intonation, how fast they talk and the volume of their voices. For example, anger or disagreement may be expressed with a rise in volume. Without access to voice we are unable to hear speakers laughing or crying, though online users attempt to express these emotions through emojis and emoticons.

Intonation is also an element of voice and it does more than provide information about speakers' feelings on the topic of conversation. When combined with gaze, it assists in allocating turns, so that speakers avoid talking over each other. Specifically, in English and other languages, a lowering of intonation at the end of a turn is often used to indicate that another speaker has the chance to take a turn at talk. So, lack of access to voice requires social media chat users to adapt to this absence through language.

Turn-Taking and Sequence Organization as Readers and Writers

Since the invention of text chat in 1973 at the University of Illinois, human beings have taken to and adapted to this constrained environment where they become readers and writers of conversation rather than speakers and listeners. The fact that we are readers and writers fundamentally alters how we interact online, especially the turn-taking system, and the way turns are organized into sequences. Part of children's development as social beings, especially in their younger years, requires them to learn to talk. This includes the management of turn-taking in conversation. How do they manage or learn turn-taking as readers and writers of conversation, as required in text chat? Sacks (1992) noted that children need to learn to become socialized, which entails learning the ability to interact. One interactional problem for children, identified by Sacks, is working out how to start a conversation, which requires them to gain the conversational floor from adults. One strategy is to ask the question, 'Do you know what?', to which the required response is 'What?'. This question is part of a pre-sequence which makes an answer by the child relevant and gains her the conversational floor. While question-answer adjacency pairs are features of online text chat, whether this occurs synchronously (in real time) or asynchronously, such interactional negotiations to gain the floor are not required, because turn-taking occurs differently in this environment (cf. Garcia & Jacobs, 1999), with permission from other users to post on text chat not required, though participants still adhere to turn-taking rules to promote coherent conversation. Hence, it would appear from this example that while children are likely to acquire the ability to interact in the *written* conversation environment, the offline world has very different interactional requirements.

Conversation in general has been found by conversation analysts to be an orderly process with a set of rules which human beings deliberately adhere to though they may not be conscious of the mechanisms at play. One of the key building blocks of conversation for organizing turns into coherent sequences and the achievement of understanding is the adjacency pair, as discovered by the conversation analysis research of Schegloff and Sacks (1973). After examining countless conversations, these pioneer researchers found that conversation is organized around clusters, with the base unit being the adjacency pair and one part of the pair following the other. This base cluster is composed of a first pair part and a second pair part which are related to each other in meaning. Examples of these include summons-answer presequences, question-answer adjacency pairs, greetings or 'how are you' sequences. For example, if a speaker asks a question (first pair part), an answer (second pair part) is expected and usually obtained from the other speaker (recipient of the question). The same is true of greetings or 'how are you' questions, where a specific response is expected, in the interests of functional conversation.

Example 1.4 illustrates a parent and child interaction, where the adult poses a question-greeting after getting the young child's attention in a summons-answer presequence.

Example 1.4

1	Richard :		cassie?
2	Cassandra:		(0.5) ((Looks at Richard.))
3	Richard:	→	how ya ↑ doing¿ (first pair part)
4		→	(1.1)
5		→	m{m?
6	Cassandra		{((looks away))

(Filipi, 2009, p. 67)

Cassandra is ten months old and while she responds to her father's summons ('cassie?') by looking at him (turn 2), she does not respond to his question and eventually looks away rather than providing the expected second pair part answer, despite her father's repair initiation ('m{m?') which attempts to prompt a reply. Filipi (2009, p. 91) argues that adults may pursue answers from young children persistently in 'working on the child's abilities to produce a response'. This reinforces the notion that a second pair part response to first pair parts such as summons or questions are expected in conversation. Children eventually become sensitive to the need to produce answers to questions, at an early age, and may use non-verbal resources such as gesture and laughter to provide a response (Filipi, 2009; Walker, 2017). As noted by Liu (2022), adult-child conversations provide children with the opportunity to learn about language and the social world, under adult guidance. They acquire turn-taking skills, grammar and pragmatics, and when dealing with questions, conversations with adults socialize them into both when and how they respond. In summary, turn-taking requires them to understand how sequences are organized, how to project a response from their interlocutors and how to respond to them. However, Stivers et al. (2018) indicate that responses to questions by children by the age of eight are still less frequent and more delayed than those of adults. Social interaction with adults and peers is therefore one important site for children to be socialized by learning the required skills and values to function as competent members of their society.

The interactional mechanisms which are at play in spoken conversation are to some extent mirrored in written interaction, though the absence of non-verbal aspects of interaction requires that users adapt to this unique environment to understand and be understood. Allocation of turns is therefore affected, as without non-verbal elements such as gaze and intonation, users do not observe the same turn-taking rules as in face-to-face interaction. For example, when talking to friends in face-to-face mode, the current speaker's intonation and facial expression generally indicate when they are about to finish their turn,

so that the next speaker may respond and take their turn. This allows the conversation to make sense and proceed successfully, with one turn following another, though repairs and overlaps often occur, especially when speakers dominate the floor. Part of this functionality of adjacency pairs in terms of meaning-making is due to the fact that second pair parts are generally intended to occur next to, or immediately following the first pair part. Adjacency or 'nextness' is therefore an important principle of turn-taking in spoken conversation, given its rapid fade quality.

While online conversationalists may continue to aim for adjacency, their intentions may be thwarted by the turn-taking system of written interaction during text chat. In particular, there is a delay in posting contributions due to the need to *write and post* rather than simply *speak* their contributions. The adjacency pair is therefore altered in written interaction, with intended second pair parts of adjacency pairs not necessarily appearing on screen as planned. A disrupted question-answer sequence is evident in Example 1.5, derived from a public *Minecraft* group chat extract.[8]

Example 1.5

➔1 Player 1: hey *Player 9* did you upload a video of that weird glitch?
2 Player 2: whew
3 Player 3: you guys stay
4 Player 4: bring raw wood
5 Player 5: it totally is
6 Player 6: wuz bored
7 Player 7: me?
8 Player 8: someone please come to aqua city and save me
➔9 Player 9: into mod forums/bug reports, yes

The affirmative response by Player 9 to Player 1's question in post 1 occurs eight posts later than the first pair part, as intervening posts by other players disrupt the adjacency of the question-answer pair initiated by Player 1. This type of disruption leads to what researchers have identified as 'disrupted turn adjacency' (Smith, 2003, p. 42), where first and second pair parts do not necessarily appear next to each other, as generally occurs in spoken conversation sequences. This is, however, not an issue, as even young users are accustomed to reconstructing the pairs through a process of reading the conversation. Herring (2013) has also shown that group chat users may playfully disregard the principle of adjacency on purpose, creating unlikely and nonsensical pairs to promote a sense of fun and belonging in online interaction.

In group chat, where many posts appear on screen at about the same time, users may also mistakenly construe first and second pair parts as adjacency pairs when they are not intended as such by posters. These have been titled

[8] https://bit.ly/4ckeB1O.

'phantom' adjacency pairs (Garcia & Jacobs, 1999) because while they make sense together, they are unintentional, and posters may interpret them as relevant to one another nonetheless. For example, an expression of appreciation such as 'thanks' may be seen as relevant to a post where a user flatters another, when it is actually intended to thank a different user for another reason. This is more likely in group than one-on-one written interaction, as the addressee or intended recipient is not always clear. In group chat, users therefore tend to avoid phantom adjacency pairs and possible misunderstanding by naming the intended recipient of the post or using the @ symbol together with their nick. The author has recently observed this practice even in work emails where there is more than one recipient.

If we backtrack to when the first form of technologically mediated interpersonal interaction, the telephone, was introduced, we find that users had to adapt linguistically, even though voice was available as an interactional resource. In fact, this medium flourished despite speakers being deprived of access to each other's faces and bodies as resources to achieve meaningful interaction. Hence, it is a good example of how human beings addressed invisibility of interlocutors, as with text chat.

How Phone Users Adapted to Speakers' Invisibility

Phone conversation is the first form of real time interpersonal interaction mediated by technology. In phone conversations, speakers' voices, but not their images, are transmitted long distance to permit communication between people who are not 'co-present' or in the same physical space. Similar to social media, the fact that speakers are not in the same physical space means that their bodies are not visible to one another. They are therefore unable to identify one another using sight. This changes the language they use when they interact, especially at the start of their conversation. The conversation in fact begins once a speaker answers the ring of the telephone, which summons them to respond to a caller. In the early days, an identification routine became necessary as part of the opening sequence of the phone conversation, unless speakers' voices were familiar to one another (see Schegloff, 1979). This routine has changed in modern days due to the evolution of phone technology.

The identification routine varies somewhat and is superfluous in phones where the caller's name and phone number are already in the phone's contact list. Where required, it may proceed as follows: 1) Summons-answer with or without self-identification. This entails the ringing of telephone (summons) by a caller, which if successful, is followed by the recipient's accepting the call and using voice to both provide a greeting and indicate readiness to talk. In English, 'hello' is the usual response, which may or may not be followed by self-identification (e.g. Mary speaking). Phone greetings vary across languages,

with the Italian greeting '*pronto*', literally meaning 'ready', emphasizing readiness to talk and a go-ahead signal to the caller. The Japanese also have a special polite phone greeting, 'moshi moshi', which is used when they answer the phone. This literally means 'speaking speaking', which in a sense signals a transition from machine (phone ringing) to human voice communication.

After the recipient answers the phone and greets the caller, the caller will usually proceed with a reciprocal greeting and self-identification. Quite often, the recipient of the call will then indicate that they either recognize the caller or encourage them to state their business, with a simple 'Yes' with rising intonation and/or other go-ahead statement. For example, the go-ahead statement might typically be 'what's up' in informal conversation, or 'what can I do for you' in formal talk. Readers would be aware of many more variations to this routine, based on the circumstances of the telephone call. As noted earlier, the self-identification stage may be bypassed altogether where both callers and recipients are identifiable through contact lists. This is also true of digital voice communication applications and softwares such as Skype and WhatsApp, where the conversational routines and language are affected by the communication software.

After these introductory phases of the telephone conversation, speakers are reliant entirely on voice, as mediated by the telephone equipment, to achieve understanding. Similar to online text chat, speakers have no access to one another's physical spaces or bodies as resources in conversation, as they are usually dispersed in different locations. Text chat users on the other hand do not have the advantage of voice as an interactional resource, but they do have access to their keyboards and screens. There is usually also a 'virtual' context which chat users construct together (co-construct) as part of their written talk. Social media interaction tools such as Facebook, WhatsApp and Twitter also provide access to resources such as images, including emojis, hyperlinks, voice and video recordings, which are unavailable in phone conversation. As previously mentioned, the permanence of posts on screen provides a scaffold which is unavailable to phone users because the visibility of conversations as text promotes understanding compared to rapid fade voice conversations. However, interaction through text reduces children's ability to recognize the voices of adult strangers online, which exposes them to risks.

In conclusion to this section, when social media users are unable to see or hear one another during talk and can rely only on profile pictures and software resources, it is likely that certain linguistic adaptations need to be made to achieve understanding, in the same way that phone users created new language and conversational sequences to open and close conversations (see Tudini & Liddicoat, 2017). Adaptations to text only conversation therefore inevitably become an element of their written language, which children are also likely to deploy online and which this volume will examine.

Research Challenges

Research into children's online language and interaction presents numerous challenges to researchers. This is partly because conversation analysis requires the use of naturalistic online data, which has neither been elicited or affected by the actions of researchers and would have occurred anyway. Hence, this research does not recruit participants or set up experimental contexts for analysis. It relies on existing natural contexts where online interaction involving children occurs.

In naturalistic settings where original online data involving children are used, appropriate ethics clearances, informed consent and anonymization are required for private interactions, as in the mother-son data used in Chapter 2[9]. Ethics guidelines do however permit the use of public online interactions such as YouTube comments without consent as they are considered public information and can be accessed by anyone. This approach is supported by ethics guidelines of the Association of Internet Researchers and upheld by Nissenbaum's (2009) framework of 'contextual integrity'. In keeping with this framework, which supports *appropriate* flow of information without restricting it entirely (p. 2), all participants' nicknames and information on geographical locations have been anonymized. Any images associated with nicks and public profiles are also omitted and described only where relevant to the analysis, without revealing participants' identities. This is in keeping with Zimmer's (2010) concerns on the ethics of sourcing public data from Facebook, which are also relevant to other public social media. The author copied all posts from the conversation verbatim, including original emoticons, emojis, abbreviations, acronyms, spelling and grammatical errors.

Gaining consent would nonetheless not be possible where public YouTube comments are concerned, where there are posts by multiple children whose contact details are unavailable. And while ethics requirements permit the use of public interactions involving children, the identity issue is significant. Firstly, as will be seen in the analysis, identity becomes a relevant topic to participants in public interactions on YouTube (see Chapters 2 and 6) where it is clear that many children feel obliged to declare their ages because they use parents' and carers' accounts to be able to access the comments function. Public profile pictures of users in the data often present images of adults, so many children wish to clarify to both their YouTube celebrity and other users that they are children and that their presence is legitimate in a context which is designed for them. However, one of the drawbacks of using public data from social media is that users are permitted to interact anonymously, using profile names, gamer

[9] Where required, participants gave written informed consent in accordance with University of South Australia Human Research Ethics Committee (HREC) requirements. The use of public online interactions is also in accordance with university HREC guidelines as at the time of writing.

tags and nicknames. So we have no guarantee that participants are children, though their developing language may betray the age of some users, as will be discussed in Chapter 6. Young adults also openly reveal their age when they are long-term fans who engage in nostalgic viewing of Ethan Gamer's later YouTube videos and participate in comments.

Gender is seldom revealed in the profile names in the YouTube comments context. However, when they do indicate a gender, relevant gendered pronouns such as 'he' or 'she' are used in the analysis for clarity. Where gender is unclear, as often occurred in Chapter 6, feminine pronouns are adopted in place of neutral 'they', since the latter option, though more inclusive, was found to be confusing in the analysis.

While content creators and users have the support of YouTube's AI filters and moderators to remove inappropriate content in comments, we have no way of knowing for certain whether apparent child users are in fact paedophiles, as pretending to be a child is one of the tactics used by paedophiles to groom children (Chiang & Grant, 2019). Some paedophiles are, however, quite open about their presence, as confirmed by the fact that comments on YouTube videos featuring minors were disabled in February 2019 and became unavailable to users due to the posting of predatory comments (Alexander, 2019, February 24). This action included Ethan Gamer's YouTube comments, some of which had been collected for this research, but did not affect those where animations or video game screens are featured[10].

Another challenge when writing this book is the speed of technological change. While some platforms and resources examined in this book may still be available in ten years' time, they will most likely become more sophisticated and/or change quite dramatically, as will the devices used to access them. Hence, the affordances and constraints for children's language and interaction are likely to change as well, though the basic interactional framework is likely to remain intact. Analysis of children's online interaction is therefore a moving target, as even currently, children in the same location or across the globe are likely to be using different devices. This will cause variability in levels and quality of access to the various tools and resources. For example, this variability is one reason why frequency counts and attempts to generalize children's frequency of use of resources such as emoticons are irrelevant in this study, as different devices provide different resources, with the newer ones providing the greatest choice and ease of access to users who own them across platforms. This issue will be addressed in greater detail in relation to interaction on specific platforms.

[10] Some Ethan Gamer YouTube comments were collected for this project prior to this action, however, there are no predatory comments in the data collected (see Chapter 6). The predatory comments had targeted perceived compromising physical positions of child YouTube video creators, which are not accessible in animations.

Copyright is also a complex issue when conducting research on online resources, regardless of whether these are available publicly or privately. First of all, the graphical component of interactions is owned by the companies that created the software, which is why copyright clearance needed to be obtained for analysis of *Club Penguin*, as the graphics are an important dimension of children's interaction. Therefore, analysis which is based on review of previous literature often lacks graphics, for which authors are able to substitute only a description. Chapter 3 on *Club Penguin* also required a rigorous copyright clearance process with the creators, Disney Corporation. The most complex copyright clearance was related to YouTube comments (Chapter 6), as YouTube did not provide a clear process; hence, advice was provided by experts in copyright law at the University of South Australia, who recommended that clearance be obtained directly from the YouTube video content creators themselves. In this case copyright clearance was not required for any of the graphical components, which were excluded to protect participants' privacy, but for the comments themselves. As they were de-identified public comments, the Human Research Ethics Committee at the University of South Australia approved their use; however, possible copyright matters needed to be addressed through the content creators as owners of the relevant YouTube videos and with legal advice from the Australian Copyright Council.

Children's use of emojis in interaction also raised complex copyright issues as they are owned by many different creators and companies according to the device and platform in which they are available. This was especially problematic in Chapter 2, which is focused on emojis in children's interaction. The issue was circumvented by substitution of original emojis with free emojis for private and commercial use (Wikimedia Commons, 2021), though they may not always correspond exactly to the originals.

In keeping with principles of CA methodology, 'proof-procedure' will be applied in the analysis, whereby recipients' responses assist in interpreting how a prior turn was understood (Sacks et al., 1974; Reeves et al., 2017). As noted by Sacks et al. (1974):

> . . . while understandings of other turns' talk are displayed to co-participants they are available as well to professional analysts, who are thereby afforded a proof criterion (and a search procedure) for the analysis of what a turn's talk is occupied with. Since it is the parties' understandings of prior turns' talk that is relevant for their construction of next turns, it is their understandings that are wanted for analysis. The display of those understandings in the talk of subsequent turns affords both a resource for the analysis of prior turns and a proof procedure for professional analyses of prior turns – resources intrinsic to the data themselves. (p. 729)

There are, however, instances where responses to single posts are atypical, as in the YouTube main comments strand or in some multi-party chat. Research by Farina (2018) on Facebook interaction has revealed that adult users are most

likely to respond to first rather than subsequent posts in a strand and this also seems to be the pattern in children's YouTube main comments interaction (see Chapter 6) where users prioritize interaction with the YouTube producer rather than with other users. Hence, use of such instances is limited and comments substrands are preferred, due to the stronger probability of obtaining a response from the YouTube celebrity or other users.

Implications

Despite fundamental differences between spoken and written conversation, the reader might rightly assume that digital activities where social interaction is the main activity, as occurs on social media and certain games, have the potential to provide some benefits to children, even if they are not face-to-face. What might Vygotsky think of social media interaction, which is conducted mainly through writing? There are many unanswered questions which will guide this study, as follows.

1. Given the significant amount of time many children spend online, how are learning behaviours such as conversational repair deployed, and scaffolding and ZPD achieved during online interaction, which occurs mainly between peers, without the support of non-verbal interactional resources or guidance from adults?
2. What is the language of children's online interaction like, lexically, syntactically and pragmatically?
3. What is the place of certain video games which isolate children and do not include interaction with human beings and language-rich environments?
4. How does children's interaction unfold in the vast array of video games and social media tools that are available on the market?
5. How do children manage chat's unique turn-taking system and sequence organization, given that these are developing abilities in children's younger years?
6. How can we foster quality interactional experiences for children so that their online recreation is conducive to learning and language development?
7. Is it possible to identify interactional configurations which maximize children's learning while interacting online?
8. Is it possible to identify the most interactive games, not in the technical sense, but in the sense that they involve talk and interaction with human beings?
9. How does online interaction compromise children's safety?

This volume seeks answers to these questions to provide the reader with a guide to selecting and setting up the best video games and social media tools for children. Chapter 8, the final chapter, therefore returns to these questions to examine how the study has addressed them.

In Summary

- Children's online language and interaction is a neglected area of research despite the popularity of social media and video games.
- Screen time has been linked to language delays, obesity and virtual autism.
- Chat is a unique hybrid form of social written interaction.
- Play and face-to-face interaction are essential to children's development.
- The body is a key resource in face-to-face interaction.
- New language and interactional routines were invented with the advent of the telephone, as is occurring now with new media.
- In chat, we interact as readers and writers, not speakers and hearers.
- Invisibility and unavailability of users' voice have implications for children's safety.
- Current ratings are an inadequate guide to video games as guidance on level of linguistic and social interactivity and learning potential is also required.
- Research challenges in investigating children's online language and interaction from a CA perspective using naturalistic data include the issue of identity and ethics in public online interactions, speed of technological change and copyright restrictions related to software graphics and emojis.

About This Book

Chapter 2 examines children's use of emoticons and emojis, to assist us in understanding an extensive range of their conversational functions as the basis for interactional analysis in subsequent chapters. Chapter 3 then turns to massively multiplayer online game/chat software *Club Penguin* that was popular with children until the desktop version was closed down in 2018. The chapter considers how children adapt linguistically to unique features of *Club Penguin* chat in a range of interactional environments. Chapter 4 instead reviews previous research to examine the interactional structure of video game interaction, differentiating between offline and online gaming interaction between children or between children and adults. Chapter 5 applies the analytical framework developed in Chapter 4 to public *Minecraft* interaction between Ethan Gamer and his fans, focusing mainly on the role of in-game chat during a public gaming session. Chapter 6 deals with children's asynchronous chat interaction on YouTube comments, to explore linguistic and interactional resources available to them, the nature of comments interaction and how they manage such an interactionally constrained medium using substrand rather than main strand comments to promote collaboration between users. Chapter 7 turns to online grooming language and interaction in text chat, by examining one published example of chat interaction between an identified offender and his young teenage victim. The analysis provides insights on how

paedophiles use language to negotiate children's trust in the early non-sexual stages of online relationships and how children are likely to respond interactionally. Chapter 8 summarizes findings and reviews the implications of previous chapters. It also provides suggestions for conducting further research in this area.

As detailed in the Appendix: Data Table, data for this book are derived from various mostly publicly available online contexts. Chapter 2, in particular, is based on data from multiple media sources involving children of a variety of ages, genders and cultural backgrounds, to provide a representative sample of how children use emojis. These include private SMS and WhatsApp messages between a mother and son aged between fourteen and sixteen years, which were not specifically collected for the study as they were naturalistic exchanges. University of South Australia Human Research Ethics committee requirements were followed to gain permission for use of these data. In addition to WhatsApp and SMS messages, publicly available YouTube comments from Ethan Gamer (2015, February 20; 2020, February 17), Cookie Swirl (2020, December 13) and Guinness World Records (2018, December 15) are also part of Chapter 2's data set. Chapter 3 data are instead derived from *Club Penguin* chat data available online or in publications. Specifically, the online chat data were sourced from *Club Penguin Rewritten* (2020, April; 2021), *Club Penguin Reunion* (2016, August) and *Club Penguin Wiki* (2018, February). Other chat exchanges were derived from Burley (2010) and Marsh (2013). Chapter 4 gaming data is based on reviewed publications, including Mondada (2012), Piirainen-Marsh & Tainio (2014), Hung (2011), Davidson (2012a) and Chien (2019). Chapter 5 gaming and chat data is based entirely on a public YouTube video gaming session between Ethan Gamer and his fans (EthanGamer, 2019, May 28), as a single case analysis. Chapter 6 YouTube comments data is derived mainly from Ethan Gamer (2015, February 20; 2020, February 17) substrand comments while data used in the analysis for Chapter 7 is from Crystal (2011).