18

The Role of Context in Clinical Linguistics

Louise Cummings

18.1 Introduction

Clinical linguistics is the branch of linguistics that characterizes and attempts to explain the many ways in which language may be impaired. It is a foundational discipline of study for those who seek to practice the profession of speech-language pathology (in the US) or speech and language therapy (in the UK). Yet, not much is known or written about the different ways in which clinical linguistics, and the language disorders it studies, intersects with context, a core concept in the study of language. In this chapter, I plan to put clinical linguistic applications of context center stage. In an important sense, this is long overdue. While disciplines like pragmatics and sociolinguistics have always explicitly examined context, the concept has been somewhat hidden in the background of work in clinical linguistics. And yet no language disorder can be adequately characterized, assessed, or treated apart from a range of contexts. The language-impaired child who talks to a parent at home encounters contextual variables in this setting that are quite different from those that he/she must navigate when communicating with a teacher at school or with a friend in the playground. Context weaves its way through each of these spoken interactions, making some aspects of communication challenging while facilitating other aspects. The clinical linguist can no more afford to shun context than the sociolinguist can afford to overlook the influence of social class, gender, and age on language. This will be my starting point in the discussion to follow.

The chapter will unfold along the following lines. In Section 18.2, we examine the scope of clinical linguistics and consider its relationship to the related profession of speech-language pathology. This section will also examine language disorders, a prominent category of communication disorders, as well as other main categories of communication disorder that can be found in children and adults.

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In Section 18.3, the concept of context is explored as it relates to clinical linguistics and speech-language pathology. Five themes are introduced to facilitate the discussion. Children and adults with language disorder can make nonnormative use of context, with implications for both their interpretation and their expression of language. We examine some populations of language-disordered children and adults where this is most evident (theme 1). Some individuals with language disorder can usefully exploit context to compensate for their impaired language skills, while for others context overwhelms their language processing abilities, leading to characteristic anomalies in their use of language. We consider these opposing responses to context in people with language disorder (theme 2). The language disorders clinic is the context in which language skills are most often evaluated and treated. And yet this environment does not represent how children and adults use language across educational, social, and work contexts in their everyday lives (I refer to this as the "clinic paradox"). We consider the limitations inherent in using a clinical setting to understand something as dynamic as language disorder (theme 3). To address the clinic paradox, speech-language pathologists must consider the ecological validity of the instruments they use to assess language skills (theme 4) and how intervention can be tailored to contexts that are salient in the lives of clients (theme 5). The chapter concludes in Section 18.4 with some reflections on how clinical linguists and speech-language pathologists may integrate context more fully into their work.

18.2 The Scope of Clinical Linguistics

Many of the "prefixed" disciplines in linguistics (e.g., sociolinguistics, psycholinguistics, and neurolinguistics) have arisen as it became apparent to linguists that new terms and concepts were needed to characterize certain linguistic phenomena. The same is true of clinical linguistics. It is difficult to mark the exact starting point of any linguistic discipline. But we can do no better than look to the work of British linguist David Crystal for the first book bearing the title of this new field of linguistic study (Cummings 2014a). Published in 1981, Crystal's book defined clinical linguistics as "the application of linguistic science to the study of communication disability, as encountered in clinical situations" (1981: 1). Crystal's definition made it clear that clinical linguistics was not a purely academic discipline, and that the purpose of the field was to understand "communication disability . . . in clinical situations." From this early starting point, the connection between clinical linguistics and individuals with communication disability in speech therapy clinics was explicitly forged. This connection remains as strong today. But before we examine this relationship in more detail, it is worth considering what else Crystal has said about clinical linguistics. In a later definition, he teases apart the linguistic aspects of the discipline. Clinical linguistics is "the application of linguistic theories and methods to the analysis of disorders of spoken, written, or signed language"

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(Crystal 1997: 418). This definition helpfully moves us beyond the common misconception that all language disorders involve *spoken* language. They do not. When an adult develops aphasia (an acquired language disorder) as a result of a stroke or a cerebrovascular accident (to give it its medical term), the ability to produce and comprehend *written* language is as likely to be disrupted as the ability to produce and comprehend spoken language. If this same adult is a user of a signed language like American Sign Language prior to his or her stroke, the ability to produce and comprehend manual signs may also be impaired. Language disorders compromise the understanding (reception) and production (expression) of linguistic symbols in all modalities, spoken, written, and signed. Let us examine some of these disorders in more detail by considering three distinctions used by clinical linguists to classify language disorders.

The first distinction concerns the difference between a *developmental* and an *acquired* language disorder. For most children, the acquisition of language in the developmental period is a process that requires no effort or special instruction. However, for a sizable minority of children, first language acquisition is anything but straightforward or effortless, resulting in a developmental language disorder. These children may be born with a genetic syndrome and have intellectual disability that makes it difficult or, in severe cases, impossible to acquire language. Alternatively, children may be born with an anatomical defect of their articulators (e.g., cleft lip and palate) that results in deviant speech sound substitutions such as the replacement of oral stops with a glottal stop (e.g., *cat* /kæt/ → [ʔæt]). The collapse of distinction between the oral plosives – they cannot be distinguished when they are all realized as a glottal stop – leads to a phonological disorder, as important contrasts in the child's sound system are lost. As a result, the child's language disorder is developmental in nature as the acquisition of phonology is compromised.

For other children and adults, they can acquire language along normal lines, only for an illness, injury, or disease to lead to its impairment. This gives rise to an acquired language disorder. For example, the adult with previously normal language skills who has a stroke or develops a brain tumor and cannot form and understand questions has an acquired language disorder. Similarly, a 16-year-old child may sustain a head injury in a road traffic accident and lose the ability to produce well-formed, grammatical utterances. The impairment of grammar in this case, too, is an acquired language disorder even though the impairment occurs in a child. This is because the distinction between a developmental and an acquired language disorder rests ultimately on how much language has been acquired by the time an injury or illness occurs. In a 16-year-old child, many aspects of language acquisition, including the acquisition of phonology and grammar, are complete. In the same way that children can have acquired language disorders, adults may have developmental language disorders. For example, an individual who is born with a genetic syndrome like Down syndrome will continue to experience into adulthood the same impairment of language skills that arose in the developmental period as

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a result of intellectual disability. This individual has a developmental language disorder even as an adult.

Clinical linguists also draw a distinction between an *expressive* and a *receptive* language disorder. In an expressive language disorder, the ability to formulate a sentence or an utterance is compromised. For example, the child with intellectual disability who cannot form sentences containing a relative clause or a passive voice construction has an expressive language disorder. Similarly, the adult with Alzheimer's dementia who cannot retrieve the words needed to produce a spoken utterance also has an expressive language disorder. Expressive language disorders often occur alongside deficits in receptive language. In a receptive language disorder, the ability to comprehend or understand language is compromised. For example, a child with intellectual disability may also be unable to understand utterances that contain a relative clause or a passive voice construction. Similarly, the comprehension of words and their meanings may be disrupted in an adult who sustains a stroke. It is important to recognize that the impairment of language comprehension is not related to a sensory deficit (e.g., hearing loss) – the child or adult with an expressive language disorder can adequately hear, for example, the spoken utterance but cannot decode its linguistic structure and interpret its meaning. In the same way, an impairment of expressive language is not related to a loss of movement of the speech articulators, although a speech disorder may also be present. Rather, it results from an inability to select and encode the linguistic structures that are required to express an utterance.

A third distinction that is acknowledged by clinical linguists is the distinction between a *speech disorder* and a *language disorder*. Speech and language are frequently treated as one and the same thing. However, for clinicians and clinical linguists, they represent quite separate components of communication. Speech production is a complex motor activity that requires the integration of several biophysical processes such as nerve impulse transmission and muscle contraction. If any part of this complex, highly integrated motor system is disrupted, a speaker can have a speech disorder such as dysarthria or apraxia of speech. For example, a child may be exposed to a viral infection *in utero* that damages the development of the motor centers in the brain, causing a condition called cerebral palsy. As well as impaired voluntary movement of the limbs, head, and torso, a child with cerebral palsy may experience impaired movement of the speech articulators, resulting in developmental dysarthria. The impairment of speech production may be mild, moderate, or severe, leading to varying levels of unintelligibility. But even in the child with cerebral palsy who has severe dysarthria, possibly necessitating the use of an alternative communication system, expressive and receptive language skills may nonetheless be intact. A quite different situation arises in the adult with non-fluent aphasia who may struggle to produce even one- or two-word utterances. For this adult, the problem with the production of spoken utterances relates solely to difficulty encoding language and is not in any way related to the production of speech. This adult has a language disorder in the absence of a speech disorder.

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It can be seen from the above discussion that no account of language disorders is possible in the absence of the children and adults who have these disorders. To understand their impairments of language, we must know something of the developmental disorders and other conditions that are the aetiology of these impairments. This requires us to look beyond language and engage with medical and scientific disciplines that, like clinical linguistics, are also foundational to speech-language pathology. And indeed, what we find is that clinical linguistics is one of several disciplines that speech-language pathologists must study in order to assess and treat children and adults with language disorders (Cummings 2018). But speech-language pathology extends more widely than clinical linguistics in another important respect. For the clinicians who practice this profession are concerned with the assessment and treatment of *all* communication disorders, and not just disorders of language. Communication disorders include fluency disorders like stuttering, voice disorders like alaryngeal communication following laryngectomy (surgical removal of the larynx), and hearing disorders like conductive hearing loss. Communication disorders also include speech disorders such as dysarthria, which, as we have already seen in Section 18.2, are properly set apart from language disorders (see Figure 18.1).

But even the broad grouping of communication disorders does not exhaust the scope of practice of speech-language pathology. For some years, the assessment and treatment of swallowing disorders (dysphagia) in children and adults have also been part of the professional remit of speech-language pathologists. It emerges that speech-language pathology

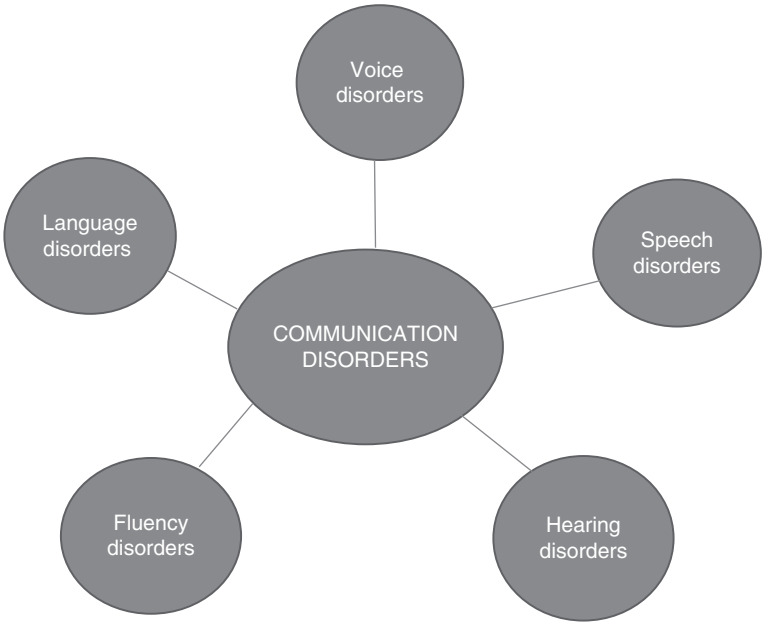

Figure 18.1 Communication disorders

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is a broad, interdisciplinary area of clinical practice that draws on the concepts and theories of clinical linguistics in much the same way that it draws on disciplines like neurology, psychology, and anatomy. The mutual dependence of speech-language pathology and clinical linguistics will be integral to the discussion of context in the next section.

18.3 Context in Clinical Linguistics

It should be apparent by now to readers that when we discuss clinical linguistics, we must also consider the related profession of speech-language pathology. This will provide the backdrop for the discussion of the present section. Speech-language pathology weaves its way through each of the five themes that will be used to address context in clinical linguistics in this section.

The first theme concerns what is known about how children and adults with language disorders process context. This processing deviates markedly from normative uses of context, with terms such as "context insensitivity" used to capture clients' difficulties. The second theme examines how for some children and adults with language disorder context can be a barrier to communication, while for others it can serve to facilitate communication. In the latter use, context can be a powerful strategy in the compensation of impaired receptive and expressive language skills. The third theme examines the role of context in the language disorders clinic. Clinics in speech-language pathology present something of a paradox. They aim to equip clients with language skills that will serve them in their daily lives, but they are constrained to do so from within a setting that is quite unlike most natural language contexts. We examine how clinicians attempt to resolve this paradox. The fourth theme examines context in relation to language assessment and considers how clinicians have increasingly moved beyond word- and sentence-testing formats to adopt assessments with greater ecological validity. The fifth theme considers context from the point of view of language intervention and considers how this concept is embedded in a client's therapy goals, among other aspects of intervention.

18.3.1 Theme 1: Nonnormative Use of Context in Language Disorder

To the extent that there is a normative use of context, it may be characterized in the following terms. Context can be overwhelming for our cognitive and sensory resources. The reason it does not actually overwhelm our mental resources, even though it has the potential to do so, is that we are particularly adept at attending to certain aspects of context and suppressing other aspects. Our skill in navigating context often only becomes apparent when that ability momentarily breaks down and we misinterpret a written or spoken utterance.

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This happened to me recently when reading the following headline in an online news article:

> *Husband of teacher accused of having sex with pupil says they were trying for a baby*

When I read this headline, I understood – or as it turned out, misunderstood – that it was the husband who was accused of having sex with the pupil. What led me to interpret the past participle clause <*accused of having sex with pupil*> as relating to the noun phrase *husband* instead of *teacher*? Maybe it was my background belief – or some might say my biased thinking – that men are more likely than women to engage in an illicit sexual relationship with a school pupil. I had possibly allowed this belief to have greater sway in my interpretation of the utterance than was strictly warranted. I had maybe also not attributed enough significance to the fact that the woman in this scenario was a teacher and, as such, was more likely than her husband to have contact with the pupil in question. If I had done so, I may have avoided my error of interpretation altogether. Whatever was the source of my error, it demonstrates very clearly the fine line that we tread with context during the interpretation of any utterance. The question now is whether children and adults with language disorder can tread this same line.

The difficulties that many children and adults have with context can be characterized in one of two ways. Firstly, children and adults may be unable to inhibit or suppress aspects of context so that a part of context that might not ordinarily be prominent comes to dominate interpretation. This is a more exaggerated form of the behavior that I displayed when one of my background beliefs became unduly salient, leading to an erroneous interpretation of a news headline. This lack of context inhibition is supported by clinical studies. For example, Titone et al. (2000) examined use of context during a semantic priming task in eighteen patients with schizophrenia and twenty-four non-psychiatric controls. When sentences moderately biased the subordinate (less common or nondominant) meanings of words (e.g., the animal enclosure meaning of *pen*), controls showed priming only of subordinate target meanings, while patients with schizophrenia showed priming of subordinate and dominant target meanings (in the case of *pen*, the writing implement meaning of the word). In other words, while controls were able to inhibit dominant target meanings, a similar inhibitory effect was not observed in patients with schizophrenia. Wiener et al. (2004) reported an impairment in inhibition at the lexical-semantic level of language processing in five individuals with Wernicke's aphasia. This impairment correlated with significant reductions in auditory comprehension, revealing that a failure to inhibit automatically evoked, distracting stimuli was integral to the comprehension deficits of these aphasic individuals.

What might a failure to inhibit aspects of context look like in children and adults with language disorder? In terms of receptive language, we might expect to see a predominance of the dominant meanings of words during

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interpretation even when these meanings should be inhibited. This could see idioms, metaphors, and other figurative forms of language interpreted literally, as the literal meanings of the words in these expressions are typically their dominant meanings (Cummings, 2009, 2014b). For example, the English expression *to kick the bucket* means 'to die or to pass away.' The literal (dominant) meaning of *bucket* makes no contribution whatsoever to the meaning of this idiom. Yet, there are innumerable examples of children and adults with language disorder failing to inhibit the dominant meaning of words in idiomatic and metaphoric expressions and interpreting them in a literal fashion in consequence.

In the examples below, an adult with right-hemisphere damage (RHD) is explaining the meaning of figurative expressions in the Metaphors subtest in the RICE-3 (Harper et al. 2010). The speaker with RHD fails to inhibit the dominant meanings of the words in these figurative expressions, leading to a literal interpretation in each case:

> A stitch in time saves nine.
> "If you have a hole in your sock, sew it up before it gets to be a great big sock and one stitch will fix it early on but later it will take nine stitches."

> It takes two to tango.
> "It takes two to dance, it's not much fun if you're just dancing by yourself, so it takes two to tango."

When asked to explain the meaning of the metaphor in the utterance *My friend's mother-in-law is a witch*, a male patient with RHD examined by Abusamra et al. (2009) replied as follows:

> "It means being tied down to religious sects, to religions, to umbanda."

Yet again, the failure to inhibit the dominant meaning of the word *witch* leads the speaker toward a literal interpretation of the meaning of this utterance.

In terms of expressive language, reduced inhibition of context might result in the intrusion of irrelevant information in response to questions. The following exchanges between a researcher (R) and a child participant (P) with autism spectrum disorder (ASD) were recorded as part of a study by De Villiers et al. (2012). In each exchange, the child with ASD is unable to suppress information that is not relevant to the researcher's question. This occurs immediately after a response to a question has been given. It gives the appearance in each exchange that there is a highly activated wider context that the child is then unable to inhibit:

Exchange 1:
R: who's in your family?
P: hm I don't know.
R: are there five of you?

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P: yes.
P: my cat.

Exchange 2:
R: Do you have a sister?
P: Yes and she won!
R: What did she win?

The failure to inhibit context is strikingly evident in the following response of an adult with schizophrenia to a question from a doctor (Thomas 1997). The extended reply addresses several irrelevant topics and suggests widespread activation of context that the adult is unable to inhibit:

> Then I left San Francisco and moved to . . . where did you get that tie? It looks like it's left over from the 1950s. I like the warm weather in San Diego. Is that a conch shell on your desk? Have you ever gone scuba diving? *(1997: 41)*

Each of the above difficulties relates to a failure of contextual inhibition. Too much context is primed or salient, and the child or adult with language disorder is unable to suppress this activated information. It then intrudes into an individual's responses to questions or leads to literal interpretation of figurative utterances.

But children and adults with language disorder make nonnormative use of context in a second way. This arises when context is insufficiently activated. Alternatively, context may be activated, but the child or adult with language disorder is unable to attend to it during their processing of utterances. There is also evidence from clinical studies that this type of context insensitivity pervades language processing in individuals with language disorder. To illustrate this point, we need only consider research on social cognition and theory of mind in ASD (Cummings 2013, 2014c, 2017). Children and adults with ASD have a significant impairment of theory of mind (ToM). This manifests as a failure to attribute cognitive mental states like *knowledge* and *beliefs* and affective mental states like *happiness* and *anger* to the minds of others. The ToM deficit in ASD is vividly illustrated in a study by Loukusa et al. (2007). These researchers read the following scenario to a 7-year-old boy with Asperger's syndrome, a form of ASD. The boy was then asked a question:

> The researcher shows a picture of a boy sitting on the branch of a tree, with a wolf underneath the boy at the bottom of the tree. The wolf is growling at the boy. A man with a gun is walking nearby. The researcher reads the following verbal scenario aloud and then asks a question: "The boy sits up in the tree and a wolf is at the bottom of the tree. How does the boy feel?"
>
> Boy: Fun because he climbs up the tree. I always have fun when I climb up a tree.

The boy's response reveals a deficit in affective ToM in that he is unable to detect the fear that the boy in the picture will experience in the presence of

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a wolf. This failure to perceive the mental state of the child in the picture is a type of context insensitivity that has implications for the interpretation of language. For if we cannot establish the mental states of a speaker, then we cannot establish the communicative intentions that motivate a speaker to produce utterances. As a result, many of the implicatures, speech acts, and other forms of language that we regularly encounter and take for granted cannot be adequately interpreted. By way of illustration, let us return to another example from Loukusa et al. (2007). On this occasion, a 9-year-old boy with Asperger's syndrome is presented with a scenario and asked a question:

> The researcher shows the child a picture with a mother and a girl. The girl has a dress on and she is running. There are muddy puddles on the road. The girl has just stepped in the puddle and the picture shows the mud splashing. The researcher reads the following verbal scenario aloud and then asks a question: "The girl with her best clothes on is running on the dirty road. The mother shouts to the girl: ''Remember that you have your best clothes on!'' What does the mother mean?"
>
> Boy: You have your best clothes on.

Clearly, the mother is using her utterance to *warn* the girl to keep her clothes clean. This speech act is only understood when the communicative intention that motivated the mother to produce it is established. However, because of his ToM difficulties, the boy with Asperger's syndrome cannot attribute this intention to the mother. Instead, he merely reasserts part of the mother's utterance, with no appreciation of what it is intended to achieve. The mother's mental states are part of the boy's context for the interpretation of the utterance. However, this part remains inaccessible to him on account of his ToM difficulties.

This same insensitivity to context is also seen in children and adults with other clinical conditions (see, for example, Champagne-Lavau et al. (2018) for RHD and Whiting et al. (2005) for Parkinson's disease). Colle et al. (2013) investigated the production and comprehension of a range of pragmatic aspects of language in seventeen adults with schizophrenia. Participants were required to process linguistic and nonlinguistic features of context to establish the meaning of utterances including direct and indirect speech acts and irony. One scenario used in the study is presented below:

> The subject is shown a videotaped scenario in which a boy and a girl are eating a disgusting soup. The boy smacks his lips with a gesture meaning "It's very good!"
>
> *Test question and subject's response:*
>
> What did the boy mean by that? *He meant to say that she cooked a delicious soup.*

The boy is clearly being ironic – the soup is anything but delicious. However, the adult with schizophrenia in this scenario does not appreciate the irony in

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the boy's statement. His failure is related to his apparent difficulty in attributing significance to the boy's gesture alongside explicit information that the soup is delicious. One way to conceive of this difficulty is that the adult's context for the interpretation of the boy's utterance is not fully activated. Alternatively, the adult's context may be fully activated, but he fails to attend adequately to it. Either way, it is the adult's insensitivity to context that leads to his failure to interpret the irony of the boy's statement.

18.3.2 Theme 2: Context as a Barrier to, and Facilitator of, Communication

We have already seen how context can be a barrier to communication when children and adults with language disorder fail to inhibit context or are insensitive to context. But we have not addressed the ways in which context can *facilitate* communication in individuals with language disorder. To illustrate what is at issue, let us consider how context normally facilitates the interpretation of utterances. I must draw on context to understand each of the following utterances:

(1) The body was discovered next to the bank.

(2) What a delightful child!

(3) We lived here 20 years ago.

The lexical ambiguity in (1) is resolved by means of context. I can use my knowledge of what has already been said in a conversation, my memory of a news report on the television, or a picture in the local newspaper to establish that the *bank* in utterance (1) is the bank of the local river and not the bank on the main street in the center of town. The irony of (2) is apparent to anyone who is present when the speaker produces the utterance and observes a boisterous child creating havoc and destruction. To interpret (3) requires that I know the referents of the deictic expressions *we* and *here*. Knowledge of the speaker of the utterance and other people present in a conversation might get me some of the way in identifying the referent of *we*, while I must know the speaker's location to establish the referent of *here*.

Context weaves its way seamlessly through my interpretation of each of the above utterances. But imagine that I have language disorder and I can only understand part of the linguistic utterance that I hear. How does my relationship to context change under these circumstances? In the presence of a degraded linguistic code, I have no option but to rely more heavily on wider context to establish the meaning of the speaker's utterance. On many occasions, my reliance on context pays off and I can establish what the speaker means – that the utterance in (2) is an example of irony based only on the speaker's exasperated facial expression and the presence of a destructive child. On other occasions, my reliance on context lets me down and I misinterpret what the speaker is saying – that the speaker of the utterance in (1) uses *bank* to mean financial institution because I have just seen him exiting the bank in

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town. In each case, context is filling the void that has been created by my impaired receptive language skills. The role of context has moved beyond one of facilitation, typical of normal utterance interpretation, to become one of compensation. I can also use context to compensate for impaired expressive language skills, such as when I point to objects that I cannot name, or when I rely on my conversational partner to supplement my spoken message.

The use of context to compensate for impaired language skills is well attested in clinical research and practice. I investigate the impact of neurodegeneration on language in my research (Cummings 2020, 2021). I am repeatedly struck by how well my study participants appear to manage the demands of conversation, only for their linguistic performance to drop off markedly during structured tasks when they cannot draw on context so easily to compensate for their impaired language skills. Early studies in aphasiology also highlighted the role of context in compensating for impaired receptive language skills in people with aphasia (Waller and Darley 1978; Pierce and Wagner 1985; Cannito et al. 1986; Hough et al. 1989). Linguistic and extralinguistic context has been shown, for example, to facilitate comprehension of specific lexical items and reversible passive sentences (e.g., *The cat was chased by the mouse*) in aphasic individuals with low comprehension skills on standard tests of auditory comprehension, but not in aphasic subjects with higher-level auditory comprehension skills (Pierce and Beekman 1985). The use of context to compensate for impaired receptive language has also been demonstrated in children with Down syndrome (Levorato et al. 2009) and adults with schizophrenia (Chakrabarty et al. 2014).

The same compensation is evident during language expression. People with aphasia have been shown to use pantomime to compensate for information that they cannot convey in speech (van Nispen et al. 2018). Young children with language delay have been found to make use of communicative gestures to compensate for their small oral expressive vocabulary (Thal and Tobias 1992).

Children's reliance on context to compensate for impaired expressive language skills is vividly demonstrated in the following conversational exchange between a boy known as JB and an examiner (E) (McCardle and Wilson 1993). JB has FG syndrome and agenesis of the corpus callosum (partial or complete absence of the nerve fibres that link the two cerebral hemispheres of the brain). He is developmentally delayed. JB sat at 15 months, walked at 26 months, and used phrases at 3 years (typically developing children start using phrases between 18 months and 2 years of age). He was 5 years and 7 months old at the time of the recording:

E: Tell me about your dog.
JB: It go woof woof.
I have a doggie, yep.
E: What's your doggie's name?
JB: Spot.
Spot doggie puppy dog.

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They go pee-pee.
Go pee-pee (pointing to the floor)
Smell (holding nose, laughing)
I go fight doggie (kicking the air)
Puppy dog go bite.

JB has very limited expressive language skills. He produces short utterances between one and four words in length. He omits the suffixes of verbs (e.g., go-*es*) and uses onomatopoeia (*woof-woof*) instead of lexical verbs (*bark*). His use of subject pronouns is inconsistent, with pronouns used on some occasions when they are needed (*they go pee-pee*), but not used on other occasions (*smell*). However, FB effectively compensates for these expressive language difficulties through use of pointing, manual gestures (holding his nose), and full body movements (kicking the air).

18.3.3 Theme 3: The Role of Context in the Language Disorders Clinic

Children and adults with language disorder are assessed and treated by speech-language pathologists in a range of different contexts. Typically, these contexts involve clinics in hospitals, schools, and residential care settings. Less commonly, clinicians visit clients in their own homes. Apart from home visits, the contexts in which most speech-language pathology takes place often deviate markedly from communication in the mundane contexts of daily life. A clinical encounter seldom involves the number and type of participants with whom we routinely communicate or reflects the social relationships that exist between speakers and hearers in work and leisure settings. These factors have a direct impact on the type of language that is used in clinics. For example, clients seldom feel empowered to pose questions in a clinical setting, let alone contest the validity of an assessment or intervention. Restricted use of these speech acts by clients in a language disorders clinic reflects the unequal power that exists between patients and clinicians in many medical and health interactions (Nimmon and Stenfors-Hayes 2016). Speech-language pathologists must address a pressing "clinic paradox": they are constrained to assess and treat children and adults with language disorders in a *clinical* context that bears little similarity to the *real-life* contexts in which most communication takes place. Some reflection on this paradox and its implications for the language disorders clinic is in order.

To help us conceive of the different ways in which context relates to the language disorders clinic, it is helpful to introduce a distinction between *micro-context* and *macro-context*. As these terms suggest, these different types of contexts relate largely to scale. A micro-context captures features of a task, exercise, or interaction that have the potential to influence how these activities are performed. A therapist's question is a linguistic micro-context for a client's answer in conversation. A picture is a visual micro-context for an auditory comprehension activity. A set of objects or toys is a physical micro-context for an instruction to put the spoon on top of the box. Micro-context operates

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alongside macro-context in the language disorders clinic. The latter type of context captures the setting in which an interaction between a therapist and a client takes place, the people who are present in an interaction (spouse or carer in addition to the therapist and client), the duration of an interaction, and the time of day that it takes place. Macro-context can extend more widely still to include a client's social network, leisure activities, and occupational role. Features of macro-context can also influence how a client performs a range of activities. The presence of a spouse may facilitate or hinder conversation in a client with aphasia. A spouse can elicit target words with skilled use of cues or can create frustration and reduced conversational participation through use of sequences of test questions to which the answers are already known (Beeke et al. 2013).

Speech-language pathologists are increasingly reflecting on the implications of both types of context for how they assess and treat clients with language disorders. Formal language tests were once the dominant approach to language assessment. These assessments adopt a tightly constrained micro-context consisting of instructions to point to objects or pictures that correspond to spoken words or sentences. If such a thing as "pure" linguistic competence exists, the scores on these tests are presumed to represent it. We will see below how speech-language pathologists have expanded the micro-context of language evaluation through use of techniques like conversation analysis and discourse analysis. Embedded within a conversation or a narrative, a client's linguistic utterance relates to a much wider micro-context, consisting of the speaker's and the hearer's mutual expectations and shared knowledge about the world.

The macro-context in which speech-language pathology is practiced has also been substantially revised. Speech-language pathologists are now as likely to address in therapy reduced participation in activities outside of the home as they are a goal such as the ability to use three-word utterances to communicate daily needs in response to pictures with 75 percent accuracy. A significant driver of this change in speech-language pathology and other health disciplines has been the introduction of the International Classification of Functioning, Disability and Health (ICF; World Health Organization, 2001). The ICF framework and its impact on the macro-context of the language disorders clinic are discussed further below.

18.3.4 Theme 4: Context and the Assessment of Language in Speech-Language Pathology

Formal language tests have long been used by speech-language pathologists to assess language skills in children and adults. It is easy to see why this is the case. When they are standardized and norm-referenced, formal tests permit an objective assessment to be made of a person's language skills at different points in time. This may be before and after an intervention has taken place so that we can measure the effects of treatment. Alternatively, formal testing can be conducted at different points in time in order to gauge a client's language recovery following a stroke or traumatic brain injury, for example. Formal

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tests can also be used to compare a client's language skills to those of a healthy population or a population of other people who have the same condition as the client (e.g., aphasia). The administration and scoring of formal tests and interpretation of their results are explicitly set out in instruction manuals and are not subject to individual judgments. Formal tests would appear to be an effective, accurate way in which to assess a client's language skills. However, these advantages of formal tests are achieved at the expense of ecological validity. As defined by Dawson and Marcotte (2017), ecological validity refers to "generalisability (veridicality, or the extent to which assessment results relate to and/or predict behaviours outside the test environment) and representativeness (verisimilitude, or the degree to which assessments resemble everyday life contexts in which the behaviours will be needed)" (p. 617). There are many examples of the low generalizability and representativeness of formal language tests.

By way of illustration, consider how language skills are assessed in the *Clinical Evaluation of Language Fundamentals – Fifth Edition Metalinguistics* (CELF-5 Metalinguistics; Wiig and Secord 2014). This assessment is suitable for individuals aged 9;0 to 21;11 years who have adequate linguistic knowledge, can understand basic concepts, and can produce grammatically correct sentences, but who lack the higher-level linguistic skills that are needed to master grade-level curriculum for Grades 3 and up. There are five stand-alone tests: a Metalinguistics Profile; two tests of meta-pragmatic skills (Making Inferences and Conversation Skills); and two tests of meta-semantic skills (Multiple Meanings and Figurative Language). Let us examine how this assessment evaluates a client's conversation skills, one of the tests of metapragmatic skills. The examiner presents a pictured scene that creates a conversational context and says two or three words to the student. The same words are printed above the scene. The student is required to formulate a sentence based on the picture, using the words in the exact form (tense, number, etc.) in which they appear above the picture.

How ecologically valid is this task? Does it reflect the conversation skills that speakers use in their daily lives? Clearly not. When we participate in conversation, we do not construct sentences based on a predetermined set of words and using a predetermined context. Rather, we actively construct context based on what has already been said in the conversation, what a hearer may reasonably be expected to know, and what purpose we want our utterance to fulfill in the exchange. The purpose of my utterance may be to persuade a friend not to buy a dress that is two sizes too small for her. I am aware of the potential of my utterance to upset my friend and am keen to avoid any threat to our friendship. And so, I decide that some form of indirect expression is required. I know my friend likes polka dots and that purple is her favorite color. I also know that we saw a dress that matched these requirements in Bella's Boutique, a store we visited earlier in our shopping trip. I turn to my friend and say, "I think you will look stunning in that dress we saw in Bella's Boutique." My friend returns the small dress to its hanger and we both leave the shop still on good terms.

The active construction of context that I have just described is what actual conversation involves and what the CELF-5 subtest on Conversation Skills

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fails to assess. To address the issue of ecological validity, speech-language pathologists also use a range of informal assessments of language. These assessments, which include analysis of naturally occurring conversation and discourse, examine a broadly construed, authentic micro-context that is in stark contrast to the tightly constrained, artificial micro-context of formal language assessments. By viewing context as evolving over consecutive turns in a conversation or utterances in a story, speech-language pathologists can examine pronominal reference, topic management, and other dynamic aspects of conversation and discourse. By way of illustration, consider the following extract from the Cinderella narrative produced by a 51-year-old man with alcohol-related brain damage. The author and client jointly examined pictures in a wordless Cinderella picture book, whereupon the book was closed, and the client narrated the story from memory:

> well she's out (1:58) with a horse (.) and him (1:37) I feel so stupid so I do now, and ah (3:35) she wants to go to the ball she meets the old woman ends up the fairy godmother (1:09) sh, sh, she turns a pumpkin into a (0:93) a carriage (1:89) takes her to the ball and she has a lovely gets a lovely dress glass shoes [. . .] *(Cummings 2021)*

This client performs two illicit shifts in the reference of the pronoun *she*. The first three instances of the pronoun refer to Cinderella. However, the speaker then introduces the fairy godmother into the discourse context, so that there are now two potential referents of the pronoun *she*. In the absence of any attempt to make one of these referents salient, the speaker uses the pronoun *she* on a fourth occasion to refer to the fairy godmother (*she turns a pumpkin into a carriage*) and then on a fifth occasion to refer once again to Cinderella (*she has a lovely gets a lovely dress*). We can track these uses of pronominal reference across extended discourse and use these illicit shifts in reference to confirm our impression that this speaker is difficult to follow. But no sense can be made of this speaker's use of reference if we do not engage fully with the broad, dynamic concept of context that is integral to our everyday communication.

18.3.5 Theme 5: Context and Intervention in Speech-Language Pathology

Speech-language pathologists must also attend to macro-context in their work with children and adults with language disorder. This requires clinicians to think about the setting of intervention, the participants in intervention, and the goals an intervention should strive to attain. Intervention in speech-language pathology has moved beyond its once exclusive focus on language impairments to include rehabilitation goals that address the impact of a language disorder on a client's conversational participation and social integration. A key driver in this change of focus has been the World Health Organization's (2001) ICF framework. This framework classifies functioning and disability associated with health conditions. It is intended to complement the ICD-11 (World Health

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Organization 2019), which is an aetiological framework for the classification of diseases, disorders, and other health conditions based on diagnosis.

The ICF framework has two main parts: *Functioning and Disability* and *Contextual Factors*. Under *functioning and disability*, the framework draws a distinction between *Body Functions and Structures* and *Activity and Participation*. Under *contextual factors*, *Environmental Factors* and *Personal Factors* are distinguished. To illustrate how these components of the ICF framework are interrelated, let us use the example of aphasia. An adult with stroke-induced aphasia has a neurological impairment (an impairment of body functions and structures). Aphasia may limit this adult's ability to read novels for leisure or deliver scriptures in church (an activity limitation). Owing to his/her communication difficulties, the adult with aphasia may increasingly withdraw from social interaction with others. He/she may cease church attendance altogether, for example (a participation restriction). Factors that contribute positively to this client's rehabilitation are his/her high level of motivation (a personal factor) and the support of his/her family and friends (an environmental factor), while right hemiparesis (weakness of the right arm and leg) and limited ambulance transport are personal and environmental factors, respectively, that might hinder rehabilitation. The professional body for speech-language pathologists in the United States – the American Speech-Language-Hearing Association (ASHA) – has used the ICF framework to set person-centered functional goals of intervention for aphasia and other communication disorders (ASHA 1997–2020).

One of the ways in which speech-language pathologists have enlarged the macro-context of intervention in the last twenty years is to engage partners of adults with conditions like aphasia and dementia directly in the therapeutic process. Partners may be familiar or unfamiliar to the person with a communication disorder and can include spouses, carers, and volunteers. Several conversation partner training programs exist, including *Supporting Partners of People with Aphasia in Relationships and Conversation Analysis* (Lock et al. 2001) and *Supported Conversation for Adults with Aphasia* (Kagan 1998) for partners of clients with aphasia, and the *Conversation Analysis Profile for People with Cognitive Impairments* (Perkins et al. 1997) for partners of clients with dementia (for a review of these programs for aphasia and dementia, respectively, the reader is referred to Turner and Whitworth 2006 and Kindell et al. 2017). Notwithstanding differences of approach, these programs all share the same starting point, namely, that partners can be taught how to facilitate conversation with the person with aphasia or dementia, often through adjustments to their own style of communication. The need for such intervention can be vividly illustrated by the case of Harry, a 72-year-old man with progressive supranuclear palsy (PSP) and cognitive impairment who was studied by the author (Cummings 2021). Harry's wife reported a complete lack of social participation by her husband:

Wife: what happens when we're out with people for meals?
Harry: we're out with people, yes, I just sit there, don't engage in conversation or anything.

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It was clear that, although Harry had cognitive and language problems related to his PSP, he had adequate language skills to participate in conversation. It was not long after meeting Harry and his wife that I discovered the source of his lack of social participation. Harry's wife had a very dominant style of communication. She assumed total control during conversation, responding to questions that I directed to Harry and only permitting him entry to the conversation in a very regulated way. Harry was prompted by his wife to speak through her use of several utterance types:

(i) direct questions (e.g., *What countries did we pass through?*)
(ii) explicit commands (e.g., *List the other places you went*)
(iii) sound and syllable cues (e.g., *mu, mu, Germany, Munich*)
(iv) letter cues (e.g., *Begins with an "R"*)
(v) sentence completion prompts (e.g., *From there you went to . . .*)

In addition, when Harry did attempt to contribute to conversation, his wife explicitly corrected what he said on many occasions (e.g., *Not the church choir*). The combination of these conversational moves had disempowered Harry in conversation to the point where he had become passive and had all but completely "opted out" of social participation with others. Although I was not providing intervention to Harry and his wife, it was evident that this conversational dyad was not working well, and that Harry's wife could benefit from conversation partner training. It is a feature of macro-context – the communication style of Harry's wife – that was responsible for his lack of social participation with others. This same feature must be the starting point for any intervention in speech-language pathology.

18.4 Future Directions

This discussion has demonstrated the different ways in which context plays a role in people with language disorders, and how it permeates the work of speech-language pathologists. Not only must clinicians understand the non-normative use of context by children and adults with language disorder, but they must also be attentive to the reach of context when they assess and treat clients in clinic. But is there something more that speech-language pathology can do to integrate context into its work? I believe that there is. In this section, I outline briefly what I think those future developments for the field should be.

The clinical education of speech-language pathologists must include an explicit focus on context. This central concept is left in the background of educational efforts as if it were simple and unproblematic and, hence, not worthy of discussion, or as if students could somehow naturally assimilate it. Neither of these scenarios is true. We all recognize the need to train students in phonetics, neurology, and child language development. We must now

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recognize the same need in relation to context. If students are encouraged to think about every interaction with clients in terms of context, this will provide an important impetus to the development of assessments and interventions that can reflect the actual communicative challenges and needs of clients. One context into which many clients with language and communication disorders are still not able to achieve successful (re)integration is the workplace (Meulenbroek et al. 2016). As clinicians, we must design assessments and interventions that can address the unique challenges of this context. To a limited extent, some speech-language pathologists are already doing exactly that. For example, Isaki and Turkstra (2000) have established that communication measures that use impairment- *and* disability-based tasks are better able to predict work reentry following traumatic brain injury than measures that use impairment-level tasks alone. Speech-language pathologists who have been directly trained to be aware of context and who are guided by it in their clinical practice are best placed to undertake these developments in the service of their clients.

Another future development relating to context concerns a greater focus on long-term outcomes in children and adults with language disorder. These outcomes are not realized immediately after an episode of therapy but often occur many years after language intervention has taken place. For a child with developmental language disorder, a long-term outcome may include an individual's literacy and language skills, social networks, mental health, or vocational status as a young adult (Whitehouse et al. 2009a, 2009b). It is these outcomes that speech-language pathologists must increasingly use to demonstrate the effectiveness of their interventions to clients, their families, and the health providers who commission clinical language services. In most service delivery models, language intervention is delivered in one or two sessions per week, with an episode of therapy completed in a certain number of weeks. An intervention is judged to be effective if language performance, often measured in test scores, has improved by the end of an episode of care. But when the context of language intervention is expanded beyond the language disorders clinic to include a range of participants and settings, it also becomes necessary to use longer-term outcomes to assess the effectiveness of intervention. The use of long-term outcomes in language intervention research has been hampered by issues such as cost – it is expensive to follow clients over a long period of time – and small sample sizes, with many clients lost to follow-up. But these outcomes are a more reliable criterion against which to assess the impact of intervention on the lives of clients who receive speech-language pathology.

There is a final area in which I believe context can be more fully integrated into the work of speech-language pathology. Notwithstanding the significant societal costs of language disorder, there has been little effort to characterize language disorder as a *public health* issue (for further discussion, see section 1.6 in Cummings 2018). This is the case even though language disorder exerts the same population-level health and economic effects as many other conditions. There is lost productivity when people with language disorder are unable to

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participate in the workforce and family members must leave the workforce in order to support and care for them. Economically inactive people must be supported through the receipt of welfare benefits. There are also additional healthcare costs associated with language disorder (Cronin et al. 2017). These costs are accrued through the provision of support services like speech-language pathology and the management of poor mental health associated with language difficulties. By conceiving of language disorder as a public health issue, there is also fresh impetus to investigate the epidemiology of language and communication disorders. There has been little discussion of, and a dearth of research into, the epidemiology of communication disorders (Byles 2005; Enderby and Pickstone 2005). This has resulted in a lack of knowledge of the prevalence and incidence of these disorders, which is essential for workforce planning in speech-language pathology. By using context to revise how we *conceive* of language disorder in the same way that we have used context to revise how we *assess* and *treat* children and adults with language disorder, substantial progress can also be made in the provision of clinical language services.

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