

Chapter 9: Disruption of pragmatics in adulthood

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9.1 Introduction

Pragmatic disruption in adulthood is associated with a range of relatively common neurological and psychiatric disorders. Investigations of pragmatic disabilities have disproportionately focused on clinical conditions in children, and research on acquired disorders of pragmatics has typically focused on some populations at the expense of others (Cummings 2007a). Even within the research on pragmatic disruption in adulthood, the disciplines involved have largely worked independently, resulting in a body of research which can appear somewhat fragmented.

In the chapters which follow, pragmatic presentations associated with aphasia, right hemisphere language disorder, schizophrenia, traumatic brain injury, Alzheimer's dementia, non-Alzheimer dementias and Parkinson's disease are discussed in detail. An overview of the pragmatic impairments associated with these disorders follows in section 9.2. Section 9.3 addresses the issue of pragmatic strengths in clinical populations while the impact of pragmatic disorders on adults and their conversation partners is discussed in section 9.4. Issues related to the cognitive substrates of pragmatic impairments are briefly reviewed in section 9.5 and addressed in detail by Cummings in Chapter 24. Pragmatic assessment and pragmatic intervention are addressed in sections 9.6 and 9.7, respectively. A summary of the chapter is presented in section 9.8.

9.2 Acquired pragmatic disorders

This section provides a brief overview of disorders in which pragmatic disruption is evident, anticipating some of the issues raised in more detail in subsequent chapters. While a range of disorders are associated with pragmatic disruption, a subset has received more attention than others. Similarly, a subset of pragmatic phenomena appears to have been the focus of clinical pragmatic investigation, while other phenomena have been minimally considered (Cummings 2007a).

9.2.1 Aphasia

Aphasia has typically been considered to be a disorder in which there is relative pragmatic strength in the context of disruptions in language processing and production (Beeke 2012). Research in this domain has largely been qualitative in nature, with a significant body of work utilising conversation analysis. While pragmatic strengths are clear, these studies have also revealed the pragmatic consequences of aphasia. The presentation of people with aphasia highlights the difference between primary disruptions in pragmatic ability, and pragmatic disruption as 'a secondary consequence of [...] language impairment' (Beeke 2012: 365) or, as articulated by Perkins (2014), the distinction between pragmatic impairment as opposed to the pragmatic consequences of breakdown at other levels of language functioning.

Despite the classic conceptualization of aphasia as a disorder in which pragmatic abilities are spared, specific pragmatic disruption has been demonstrated, including impairments in the interpretation of nonliteral language (e.g. Chapman et al. 1997; Giora et al. 2000; Gagnon et al. 2003) and difficulty processing speech acts (e.g. Soroker et al. 2005) and sarcasm (Giora et al. 2000). More recent research into pragmatic ability in the context of improving linguistic profiles of people with aphasia suggests that pragmatic deficits are not always secondary to language impairments (e.g. Coelho and Flewellyn 2003). While these recent studies suggest that pragmatic changes may not be fully related to structural language impairments in aphasia, the issue of situational context in evaluating pragmatic and discourse

function is crucial, with features such as coherence manifesting differently across different contexts (e.g. Olness and Ulatowska 2011).

9.2.2 Right hemisphere language disorder

Right hemisphere language disorder (RHLD), which is addressed in detail by Blake in Chapter 11, has been considered to be a quintessential primary acquired pragmatic disorder (Perkins 2007). However, people with RHLD form a heterogeneous population in terms of communicative presentation (Barnes and Armstrong 2010) and their performance in tasks tends to be different from that observed in conversational or more naturalistic communication contexts (e.g. Vanhalle et al. 2000). These differences are possibly related to the cognitive demands of test-like tasks (e.g. Monetta and Joannette 2003), which may lack the contextual support of more meaningful natural communication. The pragmatic or discourse characteristics typically ascribed to right hemisphere damage (RHD) include poor discourse organization with verbose and tangential output (e.g. Blake 2006), impaired ability to generate inferences (e.g. Saldert and Ahlsén 2007), impairments in the interpretation of non-literal language (e.g. Giora et al. 2000; Rinaldi et al. 2004), and impairment in the comprehension and production of both linguistic and emotional prosody (e.g. Baum and Dwivedi 2003; Pell 2006). However, across many of these domains, equivocal or inconsistent results are common (see Chapter 11, this volume).

There is a growing body of research exploring the relationship between the communication presentation of people with RHD and the cognitive substrates assumed to underlie pragmatic function (see section 9.5 for detailed discussion). Impairments in theory of mind (ToM) have been documented in this population and linked to difficulties in the comprehension of metaphor and indirect requests (Champagne-Lavau and Joannette 2009). However, the findings are not straightforward, with research suggesting that an alteration of the cognitive demands of the task influences how people with RHD perform in relation to ToM (e.g. Surian and Siegal 2001). Executive functions, including cognitive flexibility and inhibition, have been associated with pragmatic impairments in some studies (e.g.

Champagne-Lavau and Joannette 2009) but not in other studies (e.g. McDonald 2000). This finding has led Champagne-Lavau (2015) to argue that both executive function and ToM deficits are involved in pragmatic disruption in the RHD population. She suggests that the lack of consensus may relate to 'different patterns of disturbance found in RHD groups' (123), reiterating the heterogeneity that characterizes this population. Cognitive substrates of pragmatic disorders will be examined further in section 9.5.

9.2.3 Schizophrenia

Pragmatic disruption in people with schizophrenia has been documented since the earliest characterization of the disorder. Bleuler (1911/1950) stated: 'The abnormality does not lie in language itself but rather in its context' (147). Research in this area has relied predominantly on task-based assessment of phenomena such as the interpretation of idioms, proverbs, metaphor and irony (e.g. Brüne and Bodenstein 2005; Drury et al. 1998; Herold et al. 2002; Langdon et al. 2002; Tavano et al. 2008), story completion in relation to Grice's maxims (Corcoran and Frith 1996), and utterance interpretation in short stories (Corcoran and Frith 2005; Corcoran et al. 1995). Addressing a range of communicative abilities, Colle et al. (2013) demonstrated that people with schizophrenia display difficulties across linguistic, extralinguistic and paralinguistic domains as well as contextual factors and conversational management, both in terms of comprehension and production tasks. Analysis of conversational data has also been undertaken from different theoretical perspectives, including conversation analysis (e.g. McCabe et al. 2004), relevance theory (e.g. Jagoe 2015) and discourse analysis (e.g. Walsh 2007, 2008).

Much of the research on pragmatic function in schizophrenia has been undertaken with reference to theory of mind. For example, impairment in the application of conversational maxims has been linked to impaired ToM (e.g. Binz and Brüne 2010; Corcoran and Frith 1996). Notably, analysis of conversational performance has revealed evidence of the use of ToM which is not predicted by task-based performance (e.g. McCabe 2004; Jagoe 2012). Bosco et al. (2009) suggest that ToM

deficits are a complex, non-unitary phenomenon in people with schizophrenia and argue for assessment to address the complexity of this cognitive skill.

Like individuals with RHD, people with schizophrenia also seem to benefit from modifications which support basic task demands. By asking questions of participants as each new piece of information was added in a ToM task, Pickup (1997) found less severe ToM difficulties than those described in other studies. While executive function deficits have been well documented in people with schizophrenia, findings with regards to pragmatic disruption have not been consistent. While executive function deficits may co-occur with pragmatic disruption in people with schizophrenia, there is little correlation between the two, with most research suggesting that ToM is better correlated with pragmatic tasks (e.g. Langdon et al. 2002; Brüne and Bodenstein 2005; Champagne-Lavau and Stip 2010). Champagne-Lavau and Stip (2010) conclude that 'pragmatic deficits cannot be completely explained by executive dysfunction' (293).

9.2.4 Traumatic brain injury

Traumatic brain injury (TBI) is associated with cognitive-communication impairments. These impairments have been described as involving difficulty in generating appropriate inferences (e.g. McDonald 1999) as well as disruption of discourse coherence and organization. Johnson and Turkstra (2012) have demonstrated difficulties in inference generation in conversation between people with TBI and familiar conversation partners. ToM deficits have been considered to contribute directly to the pragmatic dysfunction observed in TBI (e.g. McDonald 2013; McDonald et al. 2014).

Much of the research addressing the involvement of executive function deficits in pragmatic disorders has come from the domain of TBI. For example, pragmatic difficulties in TBI have been associated with poor inhibition (e.g. Channon and Watts 2003) and deficits in attention (Youse and Coelho 2009). Executive function deficits have also been linked to poorer story grammar in people with TBI, with researchers suggesting that disruptions in mental flexibility are related to narrative organization

(Mozeiko et al. 2011). Flexibility and inhibition appear to be related to pragmatic performance, as demonstrated by a study in which a series of tasks elicited discourse production under different executive function demand conditions (McDonald et al. 2014). In a related study, Honan et al. (2015) demonstrated that ToM deficits, which were evident in a task involving comprehension of speech acts, may arise from working memory deficits. Such findings highlight that the relationship between executive function, ToM and pragmatics is complex and that executive function and ToM may interact in specific ways.

9.2.5 Alzheimer's dementia

Investigations of pragmatic abilities in people with Alzheimer's dementia have revealed disruption in conversational management, impaired cohesion and coherence and difficulties with referential language (Guendouzi and Müller 2006; Müller and Guendouzi 2005). Pragmatic disruption in Alzheimer's dementia is related to cognitive impairments, such as impairments of memory and attention, which undermine an individual's ability to process utterances within the broader context. Pragmatic disorder in Alzheimer's dementia has also been linked to impairments in ToM (e.g. Cuerva et al. 2001). Qualitative research has been particularly important in exploring pragmatic ability and difficulties in Alzheimer's dementia. Conversation analysis has been used to focus on the interactional dyad, demonstrating the 'dynamic and emergent nature of communicative impairment' in this clinical population (Müller and Guendouzi 2005: 402). Guendouzi and Savage discuss the concept of socio-pragmatic competency in Alzheimer's dementia in Chapter 14.

9.2.6 Non-Alzheimer dementias

Less well researched are the pragmatic disruptions associated with non-Alzheimer dementias. Some of the most common of these dementias include frontotemporal dementia, vascular dementia, Lewy body disease dementia, and Parkinson's disease dementia (Reilly et al. 2010). Speech and language presentations are diagnostically significant in terms of differentiating these different subtypes of dementia (Cycyk and Wright 2008; Garrard et al. 2005; Grossman et al. 1996), and pragmatic

disorders have specific potential as diagnostic markers (Cummings 2012). Patterns of pragmatic presentation in these disorders are discussed in detail in Chapter 15.

9.2.7 Parkinson's disease

There is a recent and growing body of research which has been investigating the pragmatic language abilities of people with Parkinson's disease without dementia. A range of pragmatic disruptions have been described in individuals with Parkinson's disease, including difficulties in conversational appropriateness, turn-taking, prosody, and impairments in metaphor comprehension (Monetta and Pell 2007; McNamara and Durso 2003). These difficulties have been linked to frontal lobe dysfunction or executive function deficits (e.g. Monetta and Pell 2007; McNamara and Durso 2003). It has been suggested that individuals with Parkinson's disease have difficulty allocating cognitive resources to the complex task of communication (Pell and Monetta 2008).

9.3 Pragmatic deficits and strengths in clinical populations

Clinical domains tend to focus on deficits – what has been disrupted in relation to typical functioning, resulting in a clinical diagnosis. These profiles and patterns of impairment may be diagnostically significant (Cummings 2012) and clearly have a role in informing intervention. However, a systematic identification of strengths arguably has an equally important role to play. Cummings (2005) highlights the notion of pragmatic strengths, suggesting that 'the clinical picture that emerges from these studies is more complicated (and optimistic) than is suggested by terms like 'deficit' and 'impairment'' (254). The recognition of strengths is not only important in relation to clinical implications (building on strengths in intervention, for example), but also has theoretical implications.

Not only has clinical research often neglected to recognize the pragmatic strengths of patients, but it has also arguably 'over-pathologised' aspects of communication breakdown. The notion that not all communication 'failure' is as a result of pathology is a distinct but related issue. Perkins (2014) argues that pragmatic impairment is best considered, not as a diagnostic category in its own right, but 'as a

result of complex interactions at many levels – including the sociocultural and that of moment-by-moment social interaction between individuals, as well as the neurological, cognitive and linguistic’ (131). Instances of breakdown in communication occur frequently in typical talk and, therefore, extracting instances of ‘failure’ in participants and comparing them to an ideal norm with little consideration of the conversational and situational ‘context’ is an exercise in fiction. There is a real risk in clinical pragmatics that the populations of interest are investigated within a vacuum – ‘errors’ and ‘impairment’ are sought out, often within contrived tasks, and these deficits are compared against an ideal norm (Duchan et al. 1999).

While these criticisms are far from novel, the solution has remained complex. One potential solution that has been proposed is that methods of analysing conversational performance in context be used in conjunction with more traditional structured assessments or quantitative approaches. The need to investigate linguistic ability within conversation has long been recognised in speech and language therapy (e.g. Beeke et al. 2003; Perkins 1995) and is of particular importance when investigating pragmatic ability (e.g. Chantraine et al. 1998; Friedland and Miller 1998; Perkins et al. 1998). Using methods to analyse utterances and interaction in conversation, it is argued, increases the ability of the clinician/researcher to situate performance alongside consideration of contextual factors, which may mitigate against judgments based on contrived tasks. However, this approach does not guarantee a balanced view of strengths and difficulties, an issue which will be addressed in section 9.6.

Aphasia has, perhaps, the unique distinction of being the communication disorder in which identification of pragmatic strengths has been most highlighted (or taken for granted), with pragmatics typically listed as a relative strength against the backdrop of the profile of language impairment. Indeed, people with aphasia demonstrate particular skill in drawing on pragmatic abilities to compensate for their linguistic difficulties. As remarked by Holland (1977), people with aphasia ‘communicate better than they speak’ (173).

Pragmatic strengths have also been the focus of some of the clinical literature on communication in dementia. Literature addressing intervention with this clinical population is likely to consider the notion of pragmatic strengths. This is perhaps due to the fact that a substantial number of intervention approaches rely specifically on capitalising on spared abilities while minimizing demand on impaired abilities. It is well recognized that people with dementia have individual presentations of impaired abilities and preserved skills (e.g. Müller and Guendouzi 2005). These individuals often display retention of routine forms of language, including politeness strategies and 'small talk' or phatic communication (e.g. Guendouzi and Müller 2002, 2006; Davis and Guendouzi 2013; Schrauf and Müller 2013). Even in the late stage of Alzheimer's dementia, the individual may remain responsive to their name and social pleasantries, despite other linguistic communication being very severely restricted (Bayles et al. 2000). The synthesis by Guendouzi and Savage (Chapter 14, this volume) suggests that pragmatic strengths typically involve talk in which responses offer flexibility from a set of formulaic responses. In addition, these authors highlight how strengths, which may be evident to a researcher in the field, may not be so obvious to carers and family members, an issue which has implications for intervention.

Discourse strengths in RHLA have arguably been overshadowed by the clinical expectation of deficits. While pragmatic disruption is well documented, as discussed in section 9.2.2, some studies have documented strengths in conversational discourse. There may be little notable difference between people with RHLA and controls (e.g. Kennedy 2000; Mackenzie et al. 1997), particularly where personal narratives or familiar material is being conveyed. While subtle differences may be documented in specific phases of the talk, for example in terminating the conversation (Kennedy 2000), the picture is one of communicative strength in the context of familiar material. The nature of the analysis may obscure subtle deficits, but equally, the naturalistic nature of tasks may allow for these individuals to demonstrate strengths that are masked by task demands in more traditional

assessment processes. These issues are explored in detail by Blake (Chapter 11, this volume).

Pragmatic strengths have also been documented in people with schizophrenia (e.g. McCabe et al. 2002, 2004; Walsh-Brennan 2001; Jagoe 2012). In the context of clinical conversation, McCabe et al. (2004) demonstrated that people with schizophrenia engaged in 'anticipatory interactive planning', using ToM skills in the development of the conversation. Using a relevance-theoretic approach, Jagoe (in preparation) demonstrated similar communicative behavior. The abilities revealed by most of the people with schizophrenia in her study were remarkably similar to what is described by McCabe and colleagues. Findings point to a sophisticated pragmatic skill reliant on the ability to, in some way, anticipate the communicative needs and future 'moves' of the conversational partner. The pragmatic deficits expected in people with schizophrenia may, in some instances, be an artifact of how the conversation partner engages in the talk. Unless analysis addresses collaboration in meaning making, all conversational breakdown may be misattributed to the individual with the clinical diagnosis (Jagoe 2015). Strengths in 'small talk' and casual conversation have also been identified in people with schizophrenia (e.g. Walsh 2007), as well as in people with TBI (e.g. Bogart et al. 2012). Given the role of small talk in rapport building and social connections, these strengths deserve attention, both in terms of identification in profiling these populations, but also in building pragmatic skills in intervention.

People with TBI may also display pragmatic strengths. Indeed, Bosco et al. (2015) argue that the fact that the population is identified as being heterogeneous suggests that there is an inherent profile of strengths and deficits within individuals. People with TBI have been shown to be able to take on the role of information-giver across a number of real-life contexts (Togher et al. 1996). They also have skills in engaging in casual conversation with familiar others (Bogart et al. 2012). The performance of people with TBI in these studies was reported to be similar to that of matched controls. Relative pragmatic strengths may present concurrently with deficits within an interaction. For example, Dardier et al. (2011) demonstrated that while

participants with TBI had poor topic maintenance, they displayed turn-taking ability and an ability to interpret indirect requests.

Clinicians require a thorough and up-to-date understanding of the clinical profiles of the populations they serve. The literature relating to pragmatic strengths serves as a reminder that a comprehensive profile of pragmatic ability should acknowledge both the disruption and the relative strengths which inevitably exist.

9.4 Impact of pragmatic disorders

The ability to communicate successfully is fundamental to maintaining social relationships and pursuing life goals, including vocational and leisure activities. Pragmatic disruption, therefore, poses a significant risk to the maintenance of relationships, and social and vocational engagement. Acquired communication disorders which involve disruption of pragmatic abilities represent a change from prior function and may have a considerable impact on an individual's ability to engage in chosen life roles, with consequences for psychosocial wellbeing, identity, engagement and participation more broadly.

The impact of pragmatic disruption in adulthood has lacked systematic investigation. What research there is tends to focus exclusively on psychosocial impact, with little consideration given to wider implications (Cummings 2014). Where psychosocial impact has been explored, it has typically been within specific clinical groups, with little consideration given to the broader issues that may be common to these populations. More recently, Cummings (2011, 2014) has addressed the issue of the impact of pragmatic disorders. She categorises possible impacts to include psychological, social, academic, occupational or vocational, behavioural and forensic impact. Although Cummings highlights the fact that these domains are interrelated, a descriptive classification of this type is useful in emphasizing the scope of impact in an area which has received limited attention. Some of these areas have had very limited formal investigation, specifically with regards to people with pragmatic disruption with onset in adulthood.

9.4.1 Psychological impact

The psychological impact of acquired communication disorders has been widely recognized in the literature (Brumfitt 2010). There is some debate as to whether the psychological sequelae documented in neurological conditions are a direct result of the neurological insult (which can result in acquired communication disorders), or a reaction to the circumstances and changes which the individual must now face (Brumfitt 2010). There is limited research specifically related to the psychological wellbeing of adults with pragmatic difficulties. In relation to psychological status in adults with acquired communication disorders, depression in people with aphasia is arguably the most researched psychological issue (Code and Herrmann 2003). Depression has also been documented in individuals with TBI and communication disturbances (e.g. Galski et al. 1998).

9.4.2 Impact on social interaction and life participation

With the centrality of language and communication to social interaction and engagement, pragmatic disruption has an obvious impact on social functioning. Participation restrictions have been associated with social communication deficits in those with TBI (e.g. Rispoli et al. 2010) and conversational performance and social communication have been linked to measures of social integration post-TBI (e.g. Struchen et al. 2011). Changes, specifically losses, in life roles have been documented in people with TBI (e.g. Hallett et al. 1994) and people who have had strokes (e.g. Satink et al. 2013). Much of this research has come from the field of occupational therapy. There has been limited investigation into the impact of pragmatic disruption on the maintenance or change of life roles. It is likely, however, that given the documented changes in the general population of people with brain injuries, those with pragmatic impairments will have an equal or even more significant impact to their ability to engage in pre-morbid life roles.

Communication is the medium through which individuals maintain a sense of identity. It is crucial to the ability of older adults to maintain social roles and relieve loneliness, depression, and anxiety (Lubinski 1995). The implications of pragmatic disruption in people with dementia are, therefore, far-reaching with regards to

psychosocial function. Social isolation is considered “a pressing concern in dementia care” (Müller and Mok 2012:14). The cognitive-communication difficulties associated with the progression of the disorder impact on the ability of individuals with dementia to maintain existing social relationships (ibid).

Pragmatic disruption impacts on how individuals access services, including clinical services and commercial or leisure services. Pragmatic difficulties have very specific implications for how individuals engage in the opportunities available to them. One example is access to or full participation in clinical services. Chan and Mak (2012: 540) argue that pragmatic skills of people with schizophrenia, including ‘the verbal communication skills to effectively and efficiently present their own concerns and needs [...] in interaction with the provider’, may have a significant impact on the ability of these individuals to engage in shared decision making as part of the cornerstone of good psychiatric care. While this is a participation restriction, the outcome of having less opportunity to engage in shared decision making may also negatively impact on psychological wellbeing. There has been limited research into the impact of acquired communication disorders on the ability of individuals to engage with commercial services. One exception is the work of Goldblum and Alant (2009) which has demonstrated that individuals with TBI may have challenges in engaging in retail encounters and that training of staff may increase access.

9.4.3 Impact on employment

Employment and return-to-work after an injury or diagnosis that results in pragmatic disruption is likely to be challenging. Evidence to support this hypothesis has emerged from research in people with TBI and those with schizophrenia. Interpersonal skills, which rest on pragmatic ability, are associated with return-to-work outcomes in people with TBI (Struchen et al. 2008), and communicative abilities are predictive of employment status in this population (Isaki and Turkstra 2000). Indeed, employment stability is associated with communication ability after TBI, with a specific contribution of social inferencing ability and speed of verbal reasoning (Meulenbroek and Turkstra 2016).

Social communication is an independent predictor of vocational success for people with schizophrenia (Dickinson et al. 2007). An exploration of the return-to-work experiences of people with RHD suggests that the process is challenging (Koch et al. 2005). The functional limitations which people with RHD reported to have an impact on their return to work included aspects which indicated executive function deficits such as difficulties staying on task, disorganization, and impaired decision making. While Koch et al.'s study does not report specifically on pragmatic disruption, executive function deficits may have been linked to changes in pragmatic ability. The impact of pragmatic disruptions on occupational and vocational functioning in adults warrants further exploration in these and other populations.

9.4.4 Academic impact

The academic impact of pragmatic disorders has largely been of concern to those working with children. However, given that the conditions associated with pragmatic disruption in adulthood may affect an individual in early adulthood (e.g. schizophrenia and some neurodegenerative disorders), these disorders may have an adverse impact on the ability to engage with or complete higher education. However, research in this area is lacking.

9.4.5 Forensic impact

The forensic impact of pragmatic disorders is an area which is significantly under-researched. Work which addresses the language and communication needs of young offenders is most established. However, research within the adult domain is sparse, particularly with regards to specific investigations of language and pragmatic variables in relation to forensic issues. The cognitive substrates that underlie pragmatic difficulties may in some cases make an individual more vulnerable to engaging in risk-taking or criminal behaviours. The pragmatic disorder, then, co-occurs with the risk-taking behaviour due to a common underlying deficit in executive function. Pragmatic disruption may also be a contributor to problematic behaviours. Turkstra et al. (2003) point out that the cognitive-communicative presentation of many people with TBI may make them vulnerable to misperceiving a situation or communicating in a manner that is misinterpreted by others. Also, they

may lack the communication skills that are needed to address conflict situations in a meaningful way. All of these would put the individual at risk of engaging in behaviour that could result in a criminal act.

The relationship between criminality and TBI is complex. The individuals most at risk of TBI are often risk-takers, perhaps those who are already within social contexts in which antisocial behaviours are occurring. A recent meta-analysis suggested that the rates of TBI in the offender population are very high at 60.25% (Shiroma et al. 2010). People with dementia may also be vulnerable with regards to forensic issues. The executive function deficits and changes in social awareness (including ToM abilities) that occur in dementia may make people with dementia more susceptible to engaging in behaviours that are viewed by society as criminal (Liljegen et al. 2015). Frontotemporal dementia in particular has been associated with criminal behaviour (Mendez 2010; Diehl-Schmid et al. 2013). Indeed, criminal behaviour is more common in frontotemporal dementia than in Alzheimer's dementia and may be one of the first manifestations of the condition (Liljegen et al. 2015).

Communication is central to all aspects of forensic services, and the impact of pragmatic disruption goes far beyond the potential for some individuals to engage in criminal behaviour. Good language and communication abilities are required in the full range of services, from situations in which police take statements from victims or interview suspects, to assessments of fitness to stand trial and legal proceedings themselves (Cummings 2016). Access to police, legal and justice services is hampered by communication disability (Communication Disabilities Access Canada 2015). Pragmatic disruption, therefore, may impact on how an individual engages with the law enforcement and justice systems as a victim, witness or defendant.

9.4.6 Impact on conversation partners

Disruption in pragmatic ability is a clinically significant factor in how adults with communication disabilities re-engage in life, as discussed above. These pragmatic changes, however, also impact on significant others and carers of those with such disorders. 'Third-party disability' is defined as the disability experienced by family

members as a consequence of the health condition of their significant other (World Health Organization 2001). While this might be conceptualized as 'social impact', it is important to recognize that there is a distinct impact on family members and carers of the individual with a pragmatic disability. Viewing the impact through this wider lens may enable clinicians to provide more holistic intervention (or relevant onward referral) that addresses the specific impact on significant others or carers.

The impact for the significant others of people presenting with pragmatic disruption may fall into many of the categories discussed above. For example, if return-to-work is impacted for an individual with a pragmatic disorder, there are likely to be financial implications for the immediate family. The impact, therefore, is felt beyond the impact on the individual. Similarly, many of the domains of impact discussed above involve a resultant change in life roles. Again, significant others are therefore directly impacted by virtue of the need to adopt new roles themselves.

Given the central role that conversation plays in human relationships, where interactions are evaluated as less satisfying or more frustrating, there is likely to be a negative impact on the relationship between the individual and their significant other, changes in family functioning and psychological distress. Communication disturbances are one of the factors linked to psychological distress in family caregivers of people with TBI (Kreutzer et al. 1994; Anderson et al. 2002). In addition, conversation partners of individuals with TBI report that conversations are less rewarding, less appropriate and more effortful (Bond and Godfrey 1997), a finding which may suggest that significant others could experience loneliness of their own, or be less likely to engage with their family member.

Conversations with people with dementia have been reported to become less fulfilling for both conversation partners when the memory impairment affects the ability of the person with dementia to remember previous conversations or even the significant others with whom they converse (Nussbaum 2000). Such communication difficulties are associated with increased challenges in caring for a person with dementia (e.g. Orange and Colton-Hudson 1998; Dunn et al. 1994), and

communication problems and behaviours that challenge have been linked to both caregiver stress and burden (Savundranayagam et al. 2005; Savundranayagam and Montgomery 2009). A reduction in reciprocal dyadic communication between a person with dementia and a spouse has been associated with increased rates of depression in the spousal caregiver (Braun et al. 2010). Marital satisfaction is an important facet which may be impacted by pragmatic disruption. The decrease in the ability of some people with RHD to interpret emotion from prosody and facial expression has been shown to impact negatively on marital satisfaction (Blonder et al. 2012).

9.5 Cognitive substrates of pragmatic disruption

The role that abilities such as theory of mind and executive functions play in utterance interpretation has been explored in clinical populations. It has also been the focus of theoretical efforts in approaches such as relevance theory (Sperber and Wilson 1986/1995), cognitive pragmatics theory (Bara 2010) and modular pragmatics theory (Kasher 1991). In this section, theory of mind and executive function will be briefly discussed as a precursor to the in-depth analysis provided in Chapter 24.

9.5.1 Theory of mind and recovering intentions

The ability to attribute intentions, thoughts and beliefs (all types of mental states) to the minds of others has been called 'theory of mind' (ToM). While there are debates about the nature of ToM, most scholars agree that humans are able to predict the behaviour of others based on attribution of mental states. The false belief task has become the standard test of ToM. This task stems from the notion, put forward by Dennett (1978), that the ability to predict the behaviour of an agent based on attributing them with a false belief would indicate the presence of ToM (Dennett 1987; Frith and Frith 2003). First-order ToM is the ability to entertain mental states about states of affairs in the world, while second-order ToM is the ability to reflect on beliefs about beliefs (Leiser and Bonshtein 2003).

Most models of pragmatics assume that the process of utterance interpretation is an inferential one, in which inferences are made about the speaker's intentions during utterance interpretation. Intuitively, if one has to infer what a speaker intends to communicate, this process must involve reference to a speaker's intentions and, hence, involve ToM abilities. This notion is foundational in Gricean and post-Gricean pragmatic theories. Consideration of a speaker's intentions is seen by most pragmatists as a process grounded in ToM abilities.

Clinical pragmatics has provided impetus for this line of investigation, with seminal studies by Happé (1993) and others demonstrating ToM impairment in children with autism, and associating this impairment with pragmatic deficits. Neuroimaging studies seem to provide some support for this relationship. ToM (or 'mentalizing', as it is sometimes called) is strongly associated with the medial prefrontal cortex (Frith and Frith 2003). Importantly, neuroimaging studies on pragmatic function implicate the same cortical region (e.g. Ferstl and von Cramon 2002; Kampe et al. 2003). These studies have been interpreted to demonstrate that 'the relationship between communicative and mentalizing functions is remarkably close' (Frith and Frith 2003: 469). Advances in neuropragmatics will be discussed in detail in Chapter 23.

While neuropragmatics may support the relationship between ToM and pragmatic ability, research associating impaired ToM with pragmatic disruption and social functioning in children and adults has been both replicated (e.g. Frith 2004; Roncone et al. 2002; Champagne-Lavau and Joanette 2009; Corcoran and Frith 1996) and challenged (e.g. Astington 2003; Bloom and German 2000; Boucher 1996; Happé and Loth 2002; O'Neill 1996). Such findings seem to support Astington's (2003) assertion that false-belief understanding is 'sometimes necessary [but] never sufficient' for the range of behaviours making up 'social competence' (13). Indeed, critics question whether ToM deficits are primary, or secondary to processing overload, attentional deficits, or related to working memory difficulties (e.g. Bloom and German 2000; McCabe 2009), that is, whether ToM deficits might be observed due to executive function disturbances.

9.5.2 Executive function and pragmatic ability

Executive function is the second cognitive substrate that is considered to underpin pragmatic ability. While a single definition of executive function does not exist, it can be defined as those “higher-level’ cognitive functions involved in the control and regulation of ‘lower-level’ cognitive processes and goal-directed, future-oriented behavior’ (Alvarez and Emory 2006: 17). These processes enable individuals to plan, initiate and monitor behaviours, and to problem solve and respond flexibly (Alvarez and Emory 2006; Royall et al. 2002). Component ‘skills’ of executive function include inhibition, sustained and selective attention, initiation and working memory. Sparrow and Hunter (2012: 262) highlight the degree of complexity of executive function, pointing out the seeming contradictions inherent in the description of these abilities: the ability to be flexible and adaptable, while at the same time being persistent; the ability to inhibit and to initiate. A high degree of executive function is demanded by ‘novel, nonroutine, and unstructured situations’ (Sparrow and Hunter 2012: 262). Conversation is one such situation; hence, the deployment of pragmatic abilities is likely to be reliant on executive function.

While the literature on executive function deficits in clinical populations is extensive, studies exploring both executive function and pragmatic ability are less well developed. Documented executive function deficits in clinical populations could be assumed to be associated with pragmatic disruption. However, this assumption belies the complexity of the relationship and the likely specificity of the nature of the executive function disturbance and resultant pragmatic presentation. Indeed, recent research in the domain of TBI has suggested that deficits in ToM may in fact reflect deficits in specific aspects of executive function which themselves are required for adequate ToM function (e.g. McDonald et al. 2014; Honan et al. 2015).

9.6 Pragmatic language assessment

Like demarcating the domain of pragmatics itself, drawing a distinction between typical pragmatic ability and pragmatic impairment is a challenge to the field (Cummings 2007b; Perkins 2007). In the attempt to identify pragmatic disability, clinical pragmatic research and practice has seen the development of checklists and

profiles. While these assessment methods have clinical value, they have also been criticized (Cummings 2009). In response, conversation analytic and discourse analytic approaches to assessment have increased, adding to social, interactional and sociolinguistic perspectives on a range of clinical concerns (e.g. Ferguson 1996; Perkins 2007; Perkins 1995; Tarling et al. 2006; Walsh 2007, 2008; Wilkinson et al. 2010). At the same time, descriptions of pragmatic impairments in terms of their neurological, cognitive and behavioural substrates are also increasing. It is through this context of burgeoning models, descriptions, research approaches and clinical applications that the clinician and client must navigate.

9.6.1 Tools and methods for evaluation of pragmatic abilities

Methods for evaluating pragmatic skills differ in their focus and approach and have typically been classified as falling into one of three categories: profiles or checklists; pragmatics tests; and discourse or conversation analysis. Penn (1999) profiles a useful matrix to conceptualise the dimensions across which pragmatic evaluations differ. Evaluations differ in the following dimensions: (1) profile/single skills – whether the evaluation focuses on discrete skills or generates a profile; (2) assessment/test – whether the evaluation tests skills in a decontextualised task or assesses in a defined context; and (3) process/product – whether the evaluation is focused on the presence or absence of a skill or on the interaction process involved. Each dimension can be considered to be a continuum, and each evaluation can be considered along each of the dimensions.

Pragmatics profiles and communication checklists are characterized by their use of ‘a descriptive taxonomy of pragmatic behaviours’ (Cummings 2009: 180), and typically draw on a pragmatic theory as their base for identifying the behaviours listed. The range and disparate nature of these behaviours are in part testament to different perspectives on pragmatics, but also to the array of abilities which are brought to bear on pragmatic function (Perkins 2014). Profiles and checklists of pragmatic abilities are typically used in the context of observations by an examiner who judges the presence or absence, or appropriateness or inappropriateness, of specific abilities designated as pragmatic. Some checklists, however, are designed to be used

by significant others or the individual with the pragmatic disorder themselves, with the interpretation of the responses undertaken by the clinician. The fact that these instruments are based on observation (or self-perception) is argued to add to the naturalness and authenticity of the behaviours captured. Examples of such instruments include Prutting and Kirchner's (1987) Pragmatic Protocol, The Profile of Communicative Appropriateness (Penn 1985) and the La Trobe Communication Questionnaire (Douglas et al. 2000). These instruments are discussed in detail by Saldert (Chapter 22, this volume).

Tests of pragmatic language ability are relatively easy to administer and are predictable in terms of the time that is required for their administration, scoring and interpretation. However, they have been criticized for their lack of ecological validity. Also, the subtlety of some pragmatic dysfunction belies assessment on formal tests, but may emerge through a careful analysis of conversational and monologic discourse (Cummings, 2009). Discourse analysis and conversation analysis have both been applied to this domain. While research using these methodologies is extensive, their clinical application arguably remains much more limited. Supporting Partners of People with Aphasia in Relationships and Conversation (Lock et al. 2001) and the Conversation Analysis Profile for People with Aphasia (Whitworth et al. 1997) provide the clinician with a structured approach to eliciting conversational data and analyzing it for intervention purposes. Both of these tools were designed for use with people with aphasia and their conversation partners.

9.6.2 Judgments of appropriacy in pragmatic assessment

Even where assessment data is conversational in nature, there is a risk of misconstruing a participant's pragmatic performance, as shown in Cummings' (2007b) critique of the field. That is, the researcher or clinician may fail to acknowledge their own role in constructing the individual's profile of ability or disability, both within the process of clinical interaction (Duchan et al. 1999) and within the process of analysing conversational data more generally (Cummings 2007b). Where the pragmatic analyst is the clinician involved in the conversation, there is the potential that the nature of the interaction may construct the individual

as pragmatically incompetent. For example, it is recognised that in speech and language therapy clinics the person with a communication disorder may easily be cast in the role of 'error-maker' (Kovarsky et al. 1999: 293), and that an interaction may be constructed in a manner which is unlikely to be representative of the client's ability and may even mask pragmatic skill. Similarly, the practice of asking 'test questions', in which it is manifest to both parties that the clinician knows the answer, may erode the true pragmatic nature of the task and result in responses which are appropriate in the 'test-question' context, but 'inappropriate' if construed (and analysed) as typical question-response sequences.

Even when the interaction is approached with sensitivity to pragmatic features and the analysis incorporates considerations of resourcefulness alongside instances of difficulty, making judgments on appropriacy has been demonstrated to be potentially contentious (Leinonen and Smith 1994). In addition, designating pragmatic behaviours as 'inappropriate' is not likely to be helpful in either descriptive or explanatory accounts of pragmatic disorders. Garcia et al. (2001) make the point that judgments of inappropriateness (or 'irrelevance' in this case) must be made with caution. The implication is that the role of analysts in judging appropriateness may be just as powerful as whether the speaker is in fact inappropriate (or 'irrelevant') at all:

'It is important to ask how judgments of irrelevance are being made. We need to be able to specify what inferences are derived from the conversation to arrive at our clinical diagnoses and what kind of adaptive strategies are useful for intervention. If we do not seek to answer these questions, clinical hypotheses that are made during assessments may be wrongly confirmed. [...] the role of the hearer must not be neglected in developing such tools. Relevance may very well be in the eye and ear of the beholder and not reside so much with the speaker' (Garcia et al. 2001: 34-35).

The importance of considering the conversation partner and the broader context of deployment of pragmatic abilities cannot be overstated. However, equally, it should not be assumed that merely through the analysis of conversational data (rather than ‘test’ data) an accurate portrayal is guaranteed. Pragmatic assessment may be best achieved with a combination of tools and approaches, with a clear understanding of the theoretical underpinnings and practical limitations of each method.

9.7 Pragmatic language intervention

One way to approach the range of interventions addressing pragmatic abilities in adults is to classify them according to their therapeutic focus. They include: (i) interventions directly targeting the pragmatic skills of patients; (ii) interventions targeting the cognitive substrates assumed to be responsible for the pragmatic presentation, and (iii) interventions focused on the skills or behaviours of communication partners. This section will briefly outline examples of intervention approaches in each of these categories. Saldert addresses pragmatic intervention in adults in detail in Chapter 22, this volume.

9.7.1 Interventions targeting pragmatic skills

This category of intervention approaches encompasses techniques in which conversation skills are explicitly taught to the individual. This is often as part of a social skills training programme or as part of group therapy in which pragmatic skill training or practice is the focus. During both activities, role play with a focus on the development of skills identified as pragmatic may be used. Social skills training is a core feature of intervention for people with pragmatic impairments. It includes training in conversation skills such as initiating conversation, topic maintenance and small talk. It typically involves a range of skill areas and entails:

‘The systematic teaching of interpersonal skills through the process of breaking complex behaviors into their constituent elements, demonstrating (modeling) those skills in role plays, engaging clients in role plays to practice those skills, providing positive and corrective feedback to improve performance, additional role play practice, and

developing assignments to practice those skills in naturally occurring interactions in clients' lives' (Mueser and Bellack 2007: 549).

The evidence for the effectiveness of SST is generally accepted and acknowledged to impact on behaviour skills and social functioning (e.g. Bellack, 2004; Kurtz & Mueser, 2008). However there are still debates about the magnitude and significance of such improvements (Mueser & Bellack, 2007). In addition, generalisation of skills has been recognised as a significant challenge (Pilling et al., 2002).

Group therapy is considered to be a context in which functional communication is promoted and in which group members get the opportunity to practice pragmatic skills in a more natural setting (Elman 2007; Braden 2014). Studies of group therapy with people with TBI have demonstrated improved pragmatic skills and social communication skills more generally (e.g. Dahlberg et al. 2007; McDonald et al. 2008). Indeed, in addressing pragmatics in people with TBI, the most current evidence appears to support group treatment, with fewer studies on individual interventions appearing (Braden 2014).

9.7.2 Interventions targeting cognitive substrates

Interventions targeting the cognitive substrates of pragmatic impairments have included a focus on theory of mind, specific aspects of executive function and, more recently, affective states such as anxiety. ToM has been a target for pragmatic intervention, although this has most often occurred in intervention with children with autism. Work on ToM in people with schizophrenia has been undertaken, although this is not always with explicit reference to communication or pragmatic abilities. Jagoe (forthcoming) proposes that any intervention in this regard needs to be carefully constructed and tailored to capture the moment-by-moment contribution of ToM to a conversational exchange. A 'catch-all' ToM intervention, it is argued, is unlikely to have clear or transferrable effects to pragmatic ability.

There has been limited consideration given to addressing specific executive functions in interventions for pragmatic disruption. One example is an intervention targeting attention in people with TBI. The intervention was compared to one targeting social skills in a multiple treatment comparison design with two participants with TBI (Youse and Coelho 2009). The findings suggest that attention may be a reasonable focus for intervention, possibly being most appropriate for individuals in acute rather than chronic stages of TBI, and for those with less severe injuries. In addition, the authors highlight that in order to maximize the outcomes, intervention of this nature should include natural contexts in a generalization phase.

Cognitive pragmatic treatment, an intervention approach based on cognitive pragmatic theory (Bara 2010), is designed to address ToM, executive function and inferential abilities as they relate to pragmatic language (Gabbatore et al. 2015). The intervention itself occurs within a group setting and is structured by topic over 24 sessions. The majority of sessions are focused on specific communicative tasks, including sessions on 'general communicative ability', 'linguistic ability', 'extralinguistic ability' and 'paralinguistic ability' for example. Executive function is targeted in two sessions where the specific focus is on the cognitive ability of *planning*, with the assumption that planning underpins effective communicative behavior. Theory of Mind is similarly addressed over two sessions through discussion of video-taped scenes and engaging in role play to enhance the patients' ability to formulate metarepresentations of mental states. CPT is a recently developed intervention and has been shown to be efficacious in a study addressing pragmatic abilities in people with TBI (Gabbatore et al. 2015) and a second study involving people with schizophrenia (Bosco et al. 2016).

More recently, clinicians have begun to explore how to address affective states such as anxiety which may impact on pragmatic function in adults. In people with schizophrenia, the presence of anxiety disorders is common and relates to poorer social functioning (Blanchard et al. 1998). On one view, social skills difficulties (incorporating pragmatic disruption) are related to social anxiety and the affective states of the individual (Bellack et al. 1997). The application of cognitive behaviour

approaches, such as cognitive behavioural therapy (CBT), is relatively novel in speech and language therapy with adults with pragmatic disruption, although it has been applied in other areas such as fluency disorders (e.g. Fry 2013) and voice disorders (e.g. Miller et al. 2014). Brophy (forthcoming) outlines how incorporating strategies from this approach can assist the speech and language therapist to conceptualise the communication (largely pragmatic) difficulties of people with schizophrenia in relation to unhelpful thinking or self-perceptions.

Generalisation to social communication of the skills gained by targeting cognitive substrates of pragmatic ability remains challenging and brings into question the utility of such approaches (Cummings 2009). However, improved tailoring of these interventions to target cognitive processes with specific reference to pragmatics may show more promise (Jago forthcoming).

9.7.3 Interventions targeting communication partners

This group of interventions targets the carers and significant others of people with a range of communication disorders that impact on pragmatic function, including aphasia, dementia and TBI. Training materials are used which are designed and validated for the specific purpose of partner intervention. Alternatively, interventions may use detailed individual assessment profiles, such as those generated through conversational analysis, to intervene on specific behaviours within a conversational dyad. The nature of training varies. Many programmes are didactic in nature or are focused on discussion. Some programmes incorporate an element of one-on-one training or feedback on performance, while other programmes only use one-on-one tailored training and feedback. Efficacy data on these interventions varies. While most studies report a positive impact of training, the manner in which this is measured may be significant. Some studies measure an increase in awareness of communication strategies, however, those that include conversational data and observation of behaviours pre- and post-training are more compelling. The nature of the training is likely to be significant in terms of skill acquisition and maintenance, with some evidence that didactic training should be accompanied by criterion-based performance training (in which training of specific

skills is undertaken and performance is monitored against pre-determined criteria of proficiency with feedback provided) (e.g. Bourgeois et al. 2004).

Interventions such as Supported Conversation for Adults with Aphasia (Kagan et al. 2001) are based on the principle that aphasia masks an inherent communicative competence. Training conversation partners in strategies, which are designed to allow the individual to capitalise on their communicative strengths, results in improved communicative interactions (Kagan et al. 2001). Supporting Partners of People with Aphasia in Relationships and Conversation (Lock et al. 2001) and the Conversation Analysis Profile for People with Aphasia (Whitworth et al. 1997) are both based on a detailed conversation analysis of recorded conversations and are thus highly tailored to the individual dyad. By training conversation partners and significant others, the nature of the interaction can be influenced to reveal competence and capitalise on pragmatic strengths.

In the case of dementia, working with conversation partners typically involves teaching strategies to reduce the demand on impaired cognitive systems and thus maximize opportunities for successful engagement. Examples of such programmes include FOCUSED (Ripich et al. 1995) and the Nursing Assistant Communication Skills Program (McCallion et al. 1999). Training of conversation partners has been demonstrated to be effective for staff caring for those with dementia (e.g. Ripich et al. 1995; Done and Thomas 2001; Maxim et al. 2001) and for significant others, and is recognized to be a core role of the speech and language therapist by the Royal College of Speech and Language Therapists (2014). Müller and Mok (2012) highlight the importance of providing opportunities for successful and enjoyable communicative engagement for people with dementia. They examine features of conversations that may allow individuals with dementia to participate more fully. Despite improvements in conversations as a result of these interventions, carers' perception of burden may not change (Behn et al. 2012).

Training conversation partners of people with TBI has also been undertaken, although arguably in a less systematic, programmatic manner. In a novel

intervention, Togher et al. (2004) trained police officers in techniques to enhance their interactions with people with TBI. Training of caregivers of people with TBI in conversational strategies has also been demonstrated to be successful, resulting in conversations that were judged to be more rewarding and appropriate (Behn et al. 2012). A recent systematic review concluded that conversation partner training can be an effective intervention to improve communication outcomes for people with TBI (Wiltshire and Ehrlich 2014). Evidence for the efficacy of conversation partner training in this population is accumulating (e.g. Togher et al. 2004, 2013).

The existing body of research on conversation partner training has implications for the types of strategies, principles and beliefs that are incorporated into training for carers and conversation partners more generally. It is notable that the research on intervention approaches that specifically set out to highlight or capitalise on pragmatic strengths are largely focused on aphasia – where pragmatic ability is assumed to be relatively intact – and dementia – where the progression of the condition means that compensation naturally forms a part of the intervention plan. Capitalising on pragmatic strengths and recognizing the collaborative nature of conversation could arguably benefit all patients with pragmatic disorders. Thus, conversation partner training in some form is of relevance across this domain.

9.8 Summary

Pragmatic disruption in adulthood is associated with a range of neurological and psychiatric disorders. Pragmatic presentations are heterogeneous across populations, and variability exists even within aetiological groupings. Research on the impact of pragmatic disorders is small but growing, and suggests that the impact of these disorders can be pervasive. While much of this research has focused on the psychosocial consequences of acquired communication disorders, impact may extend to occupational, academic and forensic domains. The impact of pragmatic disruption is experienced not only by the individual with the disorder, but also by their significant others, an area which is underrepresented in research. Despite a focus on pragmatic deficits in clinical populations, an analysis of pragmatic strengths is also important in clinical practice and has theoretical significance. A balanced view

of pragmatic strengths and difficulties should be obtained during pragmatic assessment and inform intervention choices.

Pragmatic disruption in adulthood represents a vast and complex field in which nuances and variability are the norm. It is only through strong theoretical accounts and systematic research that addresses pragmatic impairment and its consequences that the field of clinical pragmatics can adequately serve the individuals living with these disorders. The chapters which follow present the current state of research in relation to specific clinical populations, while synthesizing existing issues in the field and pointing to new developments.

Author's Draft

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