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Exploring the Conceptual Foundations of Social Communication in Preschool and School-aged Children

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EXPLORING THE CONCEPTUAL FOUNDATIONS OF SOCIAL COMMUNICATION IN
PRESCHOOL AND SCHOOL-AGED CHILDREN

(Integrated Article)

by

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Abstract

Introduction: Social communication is a complex and dynamic construct that is an important component of human functioning. However, an agreed upon conceptual understanding of social communication within the field of Speech-Language Pathology has been a persistent challenge. Among main issues that obscure our current understanding are those pertaining to terminology, classification, and the boundaries of social communication within social skill. All three impede the advancement of knowledge and sound clinical application. Therefore, the objective of the current study was to investigate the conceptual foundations of social communication.

Method: Two approaches were taken to begin to address these issues. The Delphi technique, an iterative survey method intended to obtain consensus, was employed in Study 1. A panel of 9 social communication experts worked to attain consensus on the key features of social communication in comparison to the related term 'pragmatics' through 3 rounds of questioning. In Study 2, 56 speech-language pathologists rated social skills using a visual analog scale for their representativeness of social communication.

Results: The results of Study 1 indicated that social communication and pragmatics are distinct terms, despite sharing all key features and drawing from the same knowledge/processing domains. Participants also proposed future directions for investigating how the terms differ. The results of Study 2 showed that social skills are nuanced in their representation of social communication. Peer-related skills of leadership and empathy, as well as others that entailed expressive speech acts, were the social skills most representative of social communication, and social skills involving compliance to adult-imposed tasks and activities were least representative of social communication. Social skills involving response to speech acts, self-management, and compliance to adult-imposed rules and expectations were not clearly distinguished as

representative or not of social communication.

Conclusion: The integrated results of Study 1 and Study 2 have shown that the issues of terminology, classification, and boundaries are interdependent. Initial advances towards addressing these issues were made by determining that social communication and pragmatics are distinct but related, and that the boundaries of social communication and social skill are nuanced. Future directions for the continued investigation of social communication are discussed.

Keywords

Co-Authorship Statement

All works contained in this dissertation were prepared by the Doctoral Candidate (K. I.). Feedback from the Candidate's doctoral supervisor was provided during the preparation of these manuscripts. These manuscripts are mainly the work of the Candidate, thereby ensuring that the integrity of the academic dissertation and the Candidate as an independent researcher are maintained.

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Chapter 1

1 Introduction

"Humans enter a social world at birth and make their way through the world by successfully negotiating decades of social exchanges" (Odom, McConnell, & McEvoy, 1992, p. 4). When we have navigated such exchanges, we are judged to be 'socially competent' (Gresham, 1986). Social competence is studied in many varied ways, although it is consistently described as a judgment made by others that an individual has behaved in a socially appropriate way (e.g., Gresham, 1986; Hart, Olsen, Robinson, & Mandleco, 1997; Merrell & Caldarella, 2002; Merrell, 2003). A dynamic application of social, cognitive, and linguistic knowledge in an *effective* and *appropriate* manner while considering the social expectations of the immediate context is required to achieve social competence (Merrell & Caldarella, 2002; Merrell, 2003; Odom et al., 1992).

For children, becoming socially competent is dependent on the development of social skills, which are defined as observable behaviours that achieve social outcomes (Gresham, 1986). Early social skills emerge in infancy with the use of simple social skills (e.g., joint attention) and continue to develop and evolve in complexity as the child develops more complex social, cognitive, and linguistic abilities (Ladd, 2005). As the child moves from infancy to preschool, their social skills develop and mature. In parallel, the contextual demands that dictate social competence also evolve. For example, a toddler may request a cookie in a developmentally appropriate and socially competent way through the use of a grasping gesture while saying "cookie". In contrast, a 5-year old would be expected to employ more complex and developmentally appropriate skills to make a request in a socially competent manner; for

example, by using polite word forms and complete sentences (e.g., "Can I have a cookie, please?"). That is, it is both developmentally appropriate and socially competent for a toddler to use a gesture-word combination; this is not so for a 5-year old.

The development of language and the development of social skill share a reciprocal relationship (Nelson, 2005). Infants are able to acquire linguistic knowledge through exposure to social contexts (Tomasello, 1992). And, as the child learns more about his/her language, they are able to access more social interactions, affording them with more opportunities to participate in and negotiate social exchanges and acquire more language. For example, through participation in regular social interaction routines such as feeding and bathing, young children learn the words, social scripts (i.e., the typical content and sequence of utterances and events), and social skills appropriate to such routines (Nelson, 2005, 2007; Nelson et al., 2003; Nelson, Plesa, & Henseler, 1998). After acquiring their first words, toddlers begin to participate in their social worlds by engaging in play and narratives. They begin to practice the words, scripts, and skills they have learned through previous interactions. Children show an emerging understanding of social competence by the time they reach preschool, as is demonstrated by their ability to identify others' violations of the scripts associated with social routines (Bates, 1976; Eskritt, Whalen, & Lee, 2008; Pea, 1982; Skarakis-Doyle, Campbell, Terry, Jasinska, & Gillespie, 2008; Skarakis-Doyle, Campbell, & Wells, 2009; Skarakis-Doyle, Izaryk, Campbell, & Terry, 2014; Skarakis-Doyle, 2002). That is, appropriate language use in social interaction, i.e., social communication, contributes to a child's social competence – a notion that gained momentum in the field of Speech-Language Pathology during the 'pragmatic revolution' of the 1980s (e.g., Prutting, 1982).

Social communication, sometimes referred to as 'pragmatics', is the appropriate use of language in social interaction. Given its social roots and role, social communication requires a complex combination of linguistic, social, and cognitive knowledge while taking into account context and conversational partners. Examples of social communication skills include maintaining appropriate physical distance, entering and taking turns in conversation, repairing miscommunications, requesting clarification, using proper terms of address, staying on topic, avoiding redundancy but still providing adequate information, and reading non-verbal signals.

Effective social communication affords children with several important developmental opportunities that contribute to their development of social competence. For example, effective social communication allows a child to initiate play and conversation with others, and thus participate in group activities. Participation in these activities yields opportunities to learn from peers, benefiting a child's early academic and social development (Williams, 2001). Indeed, social communication/pragmatic abilities have been shown to contribute to social/emotional skills, which are one of two major factors impacting children's school success (Pentimonti, Murphy, Justice, Logan, & Kaderavek, 2013). Furthermore, children with good social communication skills tend to be well accepted by their peers, and have the ability to form and maintain friendships of good quality (Fujiki, Brinton, Hart, & Fitzgerald, 1999; Gertner, Rice, & Hadley, 1994). Forming peer relationships is an important contributor to social competence (Gresham, 1986; Odom et al., 1992; Redmond, 2004). As such, children with poor social communication skills will likely experience several social consequences.

Difficulty using language in social interaction is a common problem in several clinical groups, including children with language impairment, Autism Spectrum Disorders (ASD), Attention Deficit Hyperactivity Disorder (ADHD), Fetal Alcohol Syndrome (FAS), and learning

disabilities (Adams, Baxendale, Lloyd, & Aldred, 2005; Ash & Redmond, 2014; Brinton, Fujiki, & Higbee, 1998; Brinton & Fujiki, 2005; Gerber, Brice, Capone, Fujiki, & Timler, 2012; Redmond, 2002; Rice, 1993; Staikova, Gomes, Tartter, McCabe, & Halperin, 2005; Timler, Olswang, & Coggins, 2005). Children with ineffective social communication skills may experience several negative social and academic consequences, such as low self-esteem (Jerome, Fujiki, Brinton, & James, 2002) and lower rates of peer acceptance (Gertner et al., 1994). Children with social communication difficulties may also experience challenges making new friends (Fujiki et al., 1999). When friendships are made, these children tend to have fewer friendships and/or friendships of poor quality (Fujiki et al., 1999). These children may also struggle to transition to school (Gertner et al., 1994). Once they are in a school setting, children with poor social communication skills may behave differently than their peers. Indeed, in a collaborative problem-solving task, children with less advanced language skills showed higher rates of off-task chat, and asked broader, non-specific questions than their language-proficient peers (Murphy, Faulkner, & Farley, 2014). As such, teachers may perceive children with social communication difficulties as social immature and/or less cognitively advanced (Rice, 1993).

Several longitudinal studies have shown that the social consequences of difficulties using language in childhood can persist into adolescence and adulthood. Children who were diagnosed with language impairment more often experienced friendships of poor quality in their teenage years (Durkin & Conti-Ramsden, 2007). Adults who had received childhood diagnoses of language impairment experienced lower rates of remunerative employment, poorer quality of social life, had a poor perception of self when compared to their typically-developing siblings (Clegg, Hollis, Mawhood, & Rutter, 2005), and experienced higher rates of anxiety in adulthood (Beitchman et al., 2001).

Thus, effective social communication allows children to participate in their social worlds and succeed in school; that is, to be able to function in the daily activities that are important to the quality of their lives. Thus, social communication is a key component of a child's social competence and overall functioning. Difficulty with social communication impacts social competence by impeding one's ability to form and maintain interpersonal relationships and participate in his/her social world. It follows, then, that the child's overall functioning can be improved by improving a child's social communication skills. Indeed, Speech-Language Pathologists (SLPs) have long sought to improve a child's everyday functioning (Brinton & Fujiki, 2005; Prutting, 1982). However, there have been several issues concerning the conceptualization of language use and disorders of it from the very start of the pragmatic revolution (Brinton, Craig, & Skarakis-Doyle, 1990) and persisting until present day.

1.1   Key issues with the conceptualization of social communication

A clear conceptual foundation for social communication is necessary to accurately assess social communication and its impairments, and thus improve a child's overall functioning. However, difficulties in clearly conceptualizing social communication are prominent in the literature on assessment and intervention of social communication disorders. A recent systematic review of social communication interventions for children highlights these issues (Gerber et al., 2012). Gerber and colleagues reviewed studies examining the effect of 11 possible approaches to intervention for language use in social interaction. Only 8 studies were found to meet their criteria. Together these 8 studies examined only 3 of the 11 intervention approaches they sought to investigate. Furthermore, of the studies that were reviewed, all were appraised as exploratory, meaning none demonstrated evidence strong enough to adequately inform clinical best practice for disorders of language use in social interaction. Thus, the review by Gerber and colleagues

revealed that there is limited research on clinical approaches to social communication deficits,

and the research that is available is at best exploratory. Thus, evidence was not sufficient to make

recommendations for best practice. Instead, Gerber et al. raised questions pertaining to the

current state of understanding of social communication. Specifically, they queried the best way

to conceptualize social communication treatment, the best methods for identifying social

communication difficulties and tracking progress during treatment, and which treatment methods

fit in an SLP's scope of practice (Gerber et al., 2012).

The limited knowledge pertaining to the assessment and treatment of social communication

disorders is rooted in a lack of understanding of social communication itself. Concepts are the

building blocks of empirical research, and drive the development of the theories and models that

advance research and inform clinical practice (Portney & Watkins, 2008). Gerber et al.'s review

suggested that the field of Speech-Language Pathology does not currently have the conceptual

foundation necessary to inform clinical decision-making. As such, an understanding of the

conceptual basis of social communication is necessary before what characterizes a *social*

communication disorder can be distinguished and applied in clinical settings. A review of the

social communication literature has revealed three key issues that impede our understanding of

the conceptual bases of social communication: 1) issues of terminology; 2) issues of

classification; and 3) issues of the boundaries between social communication and the broader

domain of social skills.

1.1.1   Terminology

A common language and shared terminology is essential for communication between and

among researchers and clinicians. Social communication and pragmatics share similar

definitions: the former is defined as language use in social interaction (Gerber et al., 2012) and

the latter is defined as language use in context (Bates, 1976). The terms 'social communication' and 'pragmatics' are sometimes used interchangeably and are sometimes described as distinct constructs, in both research and clinical applications. For example, some researchers treat pragmatics as a component of social communication that combines with social behaviours and language in peer interaction (e.g., Adams, 2005; Fujiki & Brinton, 2009). This view is one that has been adopted by the American Speech-Language-Hearing Association (ASHA; 2013). In comparison, Gerber et al. (2012) note their conscious decision to use both terms to mean language use in social interaction, drawing no distinction between the two terms in order to include the breadth necessary for their systematic review. Norbury (2014) also describes the two terms as similar but related. O'Neill (2012) does not use the term 'social communication' at all, instead opting for the terms 'language use' and 'pragmatic competence', despite citing several 'social communication' studies.

Similarly, various language use assessments use the terms interchangeably. For example, Izaryk, Skarakis-Doyle, Campbell, and Kertoy (n.d.) reviewed 11 parent-report tools that are available for assessing social communication in children. They found that assessments were not consistent in their use of the terms 'social communication', 'communication', 'pragmatics', and 'language use'. For example, the *Children's Communication Checklist-2* (Bishop, 2003) is a screening tool used to identify language impairment, pragmatic language impairment, and autism. The *Language Use Inventory* (O'Neill, 2009) is used to measure pragmatic deficits. The Pragmatics Profile from the *Clinical Evaluation of Language Fundamentals* (Wiig, Semel, & Secord, 2013) is a normed assessment tool for verbal and nonverbal social communication skills. Despite the varying use of the terms 'pragmatics', 'language use', and 'social communication' in

the titles and the user manual descriptions of these assessment tools, Izaryk et al. (n.d.) found

that all 11 measured the same behaviours.

Thus, there is no consistent use of the various terms used to refer to language use in social

interaction. Shared terminology is important for the process of knowledge translation between

researchers, clinicians, and policy makers; and as follows, the lack of a common language is

detrimental to the knowledge translation process (Vivanti et al., 2013). The inconsistent use of

terminology also proves problematic for the classification of social communication disorders

(Norbury, 2014).

1.1.2 Classification

Classification systems provide a means for describing the characteristics of clinical

populations. Currently, there is disagreement on how to classify social communication in

populations of children with a variety of impairments. This is exemplified by the differing

classifications of social communication disorder in the most recent version of the *Diagnostic and

Statistical Manual of Mental Disorders* (*DSM-5*) (American Psychiatric Association, 2013a) and

the beta-version of the most recent revision of the *International Classification of Diseases* (*ICD-

11*) (World Health Organization, n.d.). These two classification schemes are used worldwide

both in research and clinically as a means for identifying and grouping populations of individuals

who share similar deficits, as well for policy making and resource allocation. As such, the *DSM*

and *ICD* influence how disordered populations are conceptualized in research and policy

planning.

In previous versions of the *DSM*, pragmatic language disorders were included as a sub-type

of developmental language disorders. However, in the latest revision of the *DSM* (*DSM-5*), it

was proposed that pragmatic disorders become their own "stand alone" disorder. During the

development of the *DSM-5,* ASHA (2012) argued that a disorder of language use is still, at its core, a *language* disorder. As such, ASHA advocated for the continued inclusion of social communication/pragmatic disorders under umbrella term of Language Impairment, thus maintaining the same classification of social communication/pragmatic disorders as was in the *DSM-4*. Despite these recommendations, the *DSM*-5 includes "Social (Pragmatic) Communication Disorder" (SPCD) as its own diagnostic category to account for disorders of language use in the absence of other neurodevelopmental disorders (American Psychiatric Association, 2013b). SPCD is characterized by "…a primary difficulty with pragmatics, or the social use of language and communication…" (American Psychiatric Association, 2013b, p. 48). Diagnostic criteria for SPCD include difficulty changing communication to match different social contexts or to match the needs of the listener, difficulty following the rules of conversation and for creating narratives, difficulty making inferences in conversation, and difficulty understanding non-literal or ambiguous language. Notably, all of these criteria require core language skill.

Several researchers have expressed concerns regarding this "stand alone" treatment of social communication disorders in the *DSM*-5 (Ash & Redmond, 2014; Norbury, 2014; Tager-Flusberg, 2013; Trembath, 2014; Vivanti et al., 2013). For example, Trembath and colleagues raise concerns about the criteria for SPCD in relation to ASD (Trembath, 2014; Vivanti et al., 2013). Specifically, the social and communication symptoms from previous versions of the *DSM* have been combined into a composite 'social communication' symptom. As a result, core language deficits have been removed as a symptom of ASD, a change that has met criticism because children with ASD are known to also have core language deficits (ASHA, 2012). Additionally, children must now meet *two* criteria for restricted and repetitive interests and

behaviours (RRIBs), a change from the *DSM-4* guidelines whereby only *one* RRIBs criterion was required for an ASD diagnosis. Children who do not meet any RRIBs criteria but do demonstrate social communication symptoms will now be diagnosed with SPCD. However, children who meet one RRIBs criterion and have social communication deficits qualify for neither ASD nor for SPCD, resulting in a group of children who are left without a clinical diagnosis, and consequently, without funding for services. Norbury (2014) raises the same concerns, adding that social communication deficits are also common in other neurodevelopmental disorders such as ADHD. Therefore, she argues that the new category for social communication disorders may foster more confusion rather than helping to resolve the classification issues pertaining to the overlap of social communication disorders with other clinical groups (Norbury, 2014). Indeed, Ash and Redmond (2014) provide empirical evidence to support these concerns. Ash and Redmond (2014) found that only 9 children in a sample of 122 met criteria for SPCD, and 8 of these 9 children were also receiving clinical services for ADHD, behavioural/emotional disorders, or speech/language impairment. They conclude that it was difficult to disambiguate the difficulties of children with SPCD from other co-occurring difficulties such as ADHD. These results provide support for Norbury's argument that "…social communication and pragmatic language impairments are best conceived of as symptoms, rather than a diagnostic entity" (p. 213). Thus, the current conceptualization of social communication deficits in the *DSM-5* contributes to the conceptual obscurity of social communication.

The approach to social communication disorders in the *ICD-11* adds to the concerns about SPCD in the *DSM-5*. In contrast to the "stand-alone" SPCD category in the *DSM-5*, the beta-version of the most recent revision of the *ICD-11* maintains the inclusion of social communication/pragmatic impairments under the parent term 'Developmental language

disorders' (WHO, n.d.). The *DSM-5* and the *ICD-11* do not differ significantly and use near identical wording in their descriptions of the characteristics of social communication disorders; however, their *classification* of children with these characteristics differs greatly. Importantly, the *ICD* is primarily used in Europe and the *DSM* is primarily used in North America and Australia. Should social communication continue to be included as a subtype of developmental language disorder in the *ICD-11*, then social communication/pragmatic disorders will be conceptualized differently in different parts of the world and communication between researchers and clinicians would be impeded (Vivanti et al., 2013), and advances in understanding and treating impairments of language use in social interaction would be hindered.

1.1.3   Boundaries

A third issue obscuring our current understanding of social communication is its relationship to social skill. Recall that social skills are defined by Gresham (1986) as specific observable behaviours that can achieve a social outcome, and are thought of as part of the broader construct of social competence. Social communication is the venue through which a child enters his/her social world, and as such, is also an important contributor to social competence (Brinton & Fujiki, 2005; Hart et al., 1997; Prutting, 1982).

The notion that social communication and social skills are related has been well documented. Both refer to the effective execution of a given behaviour in social interaction, and as such, both are types of behaviours that can achieve social competence. Several researchers have noted that social communication is embedded in the broader realm of social skills (Brinton & Fujiki, 1993; Gresham & Elliott, 1990; Redmond, 2002, 2004). Social communication has commonly been defined as the intersection between language and social skills (Brinton & Fujiki, 2005; Gerber, Brice, Capone, Fujiki, & Timler, 2012; Timler, Olswang, & Coggins, 2005). This

definition implies that social communication and social skills overlap to some degree. However, the distinction between social communication and social skills is not well understood at the conceptual level or at the clinical level. In research, models of social competence vary in their approach to social communication in relation to social skills. Some models of social competence do not explicitly distinguish social communication from other social skills (e.g., Caldarella & Merrell, 1997; Crick & Dodge, 1994). Others models identify language or communication overtly, but as explicitly differentiated from broader social skill i.e., as a kind of social skill (e.g., Beauchamp & Anderson, 2010; Guralnick, 1992). The lack of distinction between social communication and social skills may limit the explanatory power of models of social competence, and these models guide hypotheses in research. Research indicates that social communication contributes to social competence (Brinton & Fujiki, 2005; Hart et al., 1997; Prutting, 1982). Models serve as analogies for real-life phenomena (Portney & Watkins, 2008), and as such, models of social competence that include an overt recognition of social communication are more representative of the real-life phenomenon of social competence.

A lack of clarity of social communication and social skill also exists in clinical application. Studies investigating the relationship between language and social-behavioural intervention demonstrate a lack of clarity pertaining to the boundaries between social communication and social skill (e.g., Law, Plunkett, & Stringer, 2011; Redmond, Ash, & Hogan, 2015). Despite clinical classification (e.g., ASD, ADHD) and the known heterogeneity within these groups, language interventions resulted in positive outcomes. This highlights the fuzzy boundaries between clinical groups defined by language and social deficits, as well as fuzziness with language and social interventions.

Furthermore, social skill assessments often include items that measure language skills; however, these assessments are not typically administered or interpreted by SLPs (Redmond, 2002). As a result, children with language impairments are often over-identified as having social deficits while being under-identified for their true underlying language impairment. That is, social skill assessments do not differentiate between children with language impairment and those with social deficits, and therefore do not bring clarity to the conceptual basis of social communication. This fosters confusion when defining clinical scope of practice, particularly for multi-disciplinary teams (e.g., SLPs, psychologists) who treat children with *both* social skill and social communication deficits.

It is widely acknowledged that social communication and social skills play a role in social competence; however, the roles of social communication and social skill are not distinguished in models, assessment, or intervention. As a result, our conceptual understanding of social communication is limited.

1.2 Overall Objective

Obscurity in the conceptualization of social communication, stemming from issues with terminology, classification, and boundaries with social skills, is persistent in the literature and in clinical applications. In research, concepts and constructs are the basis for developing theories and models, and are manipulated as variables to test hypotheses; ultimately these concepts and constructs are applied clinically (Dollaghan, 2008; Portney & Watkins, 2008). As such, both research and clinical practice benefit from a well-founded understanding of the concepts and constructs that inform theories and models. Furthermore, knowledge translation between researchers and clinicians will benefit. Given the persistent conceptual inconsistencies in the area of social communication, an investigation of the conceptual foundations of social communication

is warranted. Thus, the overall objective of this project is to advance an understanding of the constructs that comprise social communication in preschool and school-aged children.

To begin to understand the complexities of social communication's conceptual basis, an innovative approach is necessary. Brinton and Fujiki (2003) highlight the importance of blended research approaches in the field of Speech-Language Pathology. Though quantitative approaches are traditional in the field of Speech-Language Pathology, a combination of innovative, quantitative and qualitative approaches may be more appropriate for complex issues (Brinton & Fujiki, 2003). Social communication is a complex and dynamic concept that crosses disciplinary boundaries (Brinton & Fujiki, 2005; Hart et al., 1997; Prutting, 1982), and the field of Speech-Language Pathology has faced persistent challenges with conceptualizing it. As such, two approaches are taken to address the issues of terminology, classification, and boundaries pertaining to social communication. The first approach employs a qualitative approach and advances a consensus on key concepts of social communication by consulting experts about social communication and its relation to pragmatics. This manuscript will undertake the issues of terminology and classification. The second approach employs a quantitative method and addresses issues of boundaries by attempting to distinguish social communication from social skills. Collectively, these two manuscripts will contribute to a basis for resolving the issues of the conceptualization, terminology, and boundaries of social communication in children.

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Chapter 2

2 Exploring the key concepts of social communication: A Delphi study

2.1 Introduction

In any field, science is successful when its researchers share the assumption that they "know what the world is like" (Kuhn, 1962, p. 5). That is, scientific knowledge is advanced when scientists agree on a paradigm. The paradigm determines the field's values and aims, and offers a set of ways to address scientific questions within that field. Through these shared values and aims, scientific progress can be made. Naturally, not all scientific evidence can be accounted for by a given paradigm, and anomalous evidence can accumulate over time. When this anomalous evidence becomes pervasive, a new paradigm is necessary (Gorham, 2009; Kuhn, 1962). A 'scientific revolution' occurs, a new consensus is developed, and it is at this point that knowledge is advanced and scientific progress is made (Kuhn, 1962). Approximately thirty years ago, the field of Speech-Language Pathology experienced a scientific revolution – the "pragmatic revolution", in which the focus of the field began to shift from structural language (e.g., syntax) to language use in context (i.e., pragmatics) (Prutting & Kirchner, 1983). As Brinton, Craig, and Skarakis-Doyle highlighted in 1990, neither pragmatics nor pragmatic impairment had a widely accepted paradigm at the time. The lack of consensus on the underpinnings of pragmatics was permeating to the clinical level. "Our difficulty characterizing pragmatic functioning in normal language development spills over into our approach to disorder" (Brinton et al., 1990, p. 7).

Nearly 25 years later, their observations are still true. There is still little consensus on what pragmatics entails (O'Neill, n.d.), something that has been confounded by the introduction of the

related term 'social communication' to the literature. Social communication is commonly

defined as language use in social interaction (Gerber, Brice, Capone, Fujiki, & Timler, 2012), a

definition quite similar to that of pragmatics, i.e., language use in context (Bates, 1976).

Effective social communication skills allow children to participate in their social worlds,

affording them excellent opportunities for social, linguistic, and academic development.

Therefore, social communication skills play a crucial role in a child's overall development.

However, as there is with pragmatics, there is lack of a common understanding of what social

communication entails. Furthermore, given their similar definitions, the overlap between

pragmatics and social communication is not well understood. That is, there is neither consensus

on what each term entails nor is there agreement on how these terms might overlap. Without

consensus, advancing knowledge in this area will be difficult and the process of knowledge

translation to the clinical realm will be hampered. Agreement on the conceptual foundations of

these terms is necessary to advance our knowledge of pragmatics and social communication, and

subsequently to translate this knowledge to the clinical level; that is, to guide the assessment and

treatments of pragmatic and social communication *impairments*. Despite the call for consensus in

1990 by Brinton, Craig, and Skarakis-Doyle, several issues currently persist in the

conceptualization of both pragmatics and social communication. It is the purpose of this paper to

move towards a common conceptualization of these terms. First, an outline of the use of the

terms 'social communication' and 'pragmatics' in research and conceptual models, in

classification systems, and in clinical practice is provided.

Terminology in research and conceptual models

The terms 'pragmatics' and 'social communication' are used in different ways in the

research literature to capture the notion of 'language use in social interaction'. Indeed, Gerber

and colleagues (2012) noted that 'language use in social interactions', rather than 'pragmatics' or 'social communication', would be used for the purposes of their review to "…best encompass the language problems of interest" (footnote, p. 236). However, in their discussion of the challenges children with disorders of language use may experience, Gerber et al. (2012) distinguish pragmatic skills (e.g., turn-taking, topic maintenance) from social communication situations (e.g., entering peer groups, resolving conflicts). Fujiki and Brinton (2009) outline two theoretical positions on the definition of pragmatics. First, they present the formalist definition of pragmatics (e.g., Berko Gleason, 2005), which focuses on the use of language form in context. Formalists define pragmatics as the use of language in social contexts. Fujiki and Brinton compare this view with the functionalist view of pragmatics, where the term extends beyond the use of language form to include social cognition and social interaction (e.g., Bates & Macwhinney, 1979; Bates, 1976). Brinton and Fujiki purport that when extended beyond the use of language form, pragmatics becomes social communication. Social communication is the "intersection" of language and social behaviours in peer interactions, and encompasses the use of language in interpersonal interactions and the incorporation of social and cognitive knowledge. Thus, for Fujiki and Brinton (2009), social communication and pragmatics are different - but related - concepts. Norbury (2014) also draws a distinction between pragmatics and social communication. She defines pragmatics as the use of linguistic context, and social communication as the use of language in social contexts. She argues that impairments of pragmatic language and disorders of social communication are "…not necessarily one and the same" (p. 205). Note that Norbury's definition of *social communication* is identical to Brinton and Fujiki's description of the formalist definition of *pragmatics*. In her examination of pragmatic assessment for children, O'Neill (n.d.) states explicitly that she uses the terms

'pragmatic competence' and 'language use' synonymously, while also referencing several 'social communication' studies as support for her discussion of pragmatic competence. The inconsistent use of these two terms in both research and in clinical assessments obscures the conceptual basis of social communication.

Furthermore, the inconsistent use of these two terms extends into proposed models of social communication and/or pragmatics. Currently, there are several models available, each offering different frameworks for conceptualizing social communication and/or pragmatics. Coggins and Olswang (2001) model social communication as the overlap of four knowledge bases: social communication behaviours, social-cognitive abilities, language abilities, and processing abilities/executive function. In this model, social communication behaviours are observable communication behaviours that are executed in social interactions. Socio-cognitive and language abilities work together to support social communication behaviours. Each of these components draws on processing abilities/executive function, which "…are the necessary underlying processing operations that enable a child to utilize and manipulate his/her existing knowledge, along with organizing, managing and implementing incoming information" (Coggins & Olswang, 2001). Coggins and Olswang treat pragmatics as one facet of language ability, among syntax and semantics, which children combine to engage in social situations, i.e., social communication.

Taking a different approach, Adams (2005) singles out pragmatics as one of four components that comprise social communication, in addition to social interaction, language processing (both expressive and receptive), and social cognition. Social interaction focuses on a child's ability to identify others as "social beings" (Adams, 2005, p. 183). Social cognition encompasses a child's ability to use their knowledge of the social environment, the people within

it, and the knowledge those people bring to an interaction. Pragmatics involves the "contextual influences on the use of language forms" (Adams, 2005, p. 183). Lastly, language processing involves the decoding of others' messages and the encoding of the messages the individual wishes to contribute to a conversation. Adams (2005) emphasizes that social communication is the synergistic product of its components.

In her model of pragmatics, O'Neill (2012) outlines three components of pragmatics (social, mindful, and cognitive). These three components are informed by social knowledge, cognitive knowledge, and general pragmatic knowledge *as they are employed in conversational interaction*. O'Neill emphasizes that, in her model, the three pragmatic components "… constitute pragmatic competence and the active, ongoing, dynamic event of communication with others" (2012, p. 263). O'Neill does not explicitly address social communication or its relationship to pragmatics in her model; she does, however, include the influence of cognitive and social knowledge on language use, much like models by Adams and by Coggins and Olswang. Thus, O'Neill (2012) does not clearly differentiate pragmatics from social communication.

The contribution of social, cognitive, and linguistic knowledge is recognized in each of the models outlined above, with varying emphasis on the role of social interaction. What is pertinent is that each of these current models conceptualizes the relationship between social communication and pragmatics in different ways, and thus further hinder an understanding of these terms.

Terminology in classification systems and clinical assessment

Moreover, two major classification systems vary in their usage of the terms social communication and pragmatics. In previous versions of the *Diagnostic and Statistical Manual of*

Mental Disorders (DSM), disorders of language use were a subcategory of developmental language impairment. However, the most recent version of the *DSM* (*DSM-5*) (American Psychiatric Association, 2013a) includes Social (Pragmatic) Communication Disorder (SPCD) (American Psychiatric Association, 2013b), a diagnostic category for disorders of language use in its own right. "Social (pragmatic) communication disorder is characterized by a primary difficulty with pragmatics, or the social use of language and communication…" (p.48). The use of both 'pragmatics' and 'social communication' in the title and definition of SPCD indicates that, in terms of a clinical diagnosis, the American Psychiatric Association (APA) views the two terms as interchangeable. In contrast, the proposed revision to the *International Classification of Diseases* (11th revision, Beta phase; *ICD-11*) (World Health Organization, n.d.), includes the category of "developmental language disorder with impairment of mainly pragmatic language", a category that was not included in the previous version of the World Health Organization's (WHO) classification system, the *ICD-10* (WHO, 1992). Unlike the *DSM-5*, the *ICD-11* continues to include pragmatic language difficulties under the parent category of "Developmental language disorder". In the *ICD-11*, pragmatic language impairment is described as involving "…difficulties in understanding meaning in context (e.g. making inferences, verbal humour, and resolving ambiguities) as well as using language appropriately for social communication in conversation and narrative discourse" (WHO, n.d.). Thus, the WHO appears to draw a distinction between pragmatics and social communication, although the distinction is not defined in the beta draft of the *ICD-11*. That the WHO and the APA do not classify disorders of language use in the same manner is of major importance (Vivanti et al., 2013). This discrepancy could intensify confusion should the WHO maintain the way it classifies disorders of language use in the final version of the *ICD-11*.

Additionally, there is prominent use of overlapping or similar terms in the titles of assessment tools for children. Assessments of appropriate language use include the terms 'pragmatics', '(social) communication', or 'language use' in their titles, such as the *Language Use Inventory* (*LUI;* O'Neill, 2009), the *CELF Pragmatics Profile* (Semel, Wiig, & Secord, 2003, 2012; Wiig, Secord, & Semel, 2004), the *Children's Communication Checklist* (*CCC*-2; Bishop, 2003) and the *Social Communication Questionnaire* (*SCQ;* Rutter, Bailey, & Lord, 2003). A closer look at the questions included in these assessments indicates a large conceptual overlap. For example, "The student avoids use of repetitive/redundant information" (item 10, *CELF-4 Pragmatics Profile;* (Semel et al., 2003)) vs. "When answering a question, provides enough information without being over-precise" (item 61, *CCC-2;* (Bishop, 2003)) are both items that tap into avoiding redundancy; i.e., understanding a conversational partner's point of view. This is just one example to suggest that these assessment tools are tapping into similar (or potentially identical) underlying constructs, despite the different terminology used in their titles.

Impact on research, assessment, and treatment

Although it has been several decades since the field of Speech-Language Pathology embraced an emphasis on language use in context despite what it is called, the field has yet to agree on a new paradigm that can organize and inform research questions pertaining to social communication and pragmatics. Thus, the ability to advance our understanding of these terms is impeded. As it was in the 1990s, the inconsistent use and conceptualization of the terms that describe 'language use' is still evident. Given this, it is no surprise that confusion pertaining to the identification, assessment, and treatment of social communication/pragmatic disorders also persists. A systematic review of social communication assessment for children found only eight social communication research studies that met inclusion/exclusion criteria (Gerber et al., 2012),

indicating a narrow breadth of research in the appropriate use of language in social interaction. As a result of this review, Gerber et al. raised several clinical questions pertaining to the conceptualization of disorders of language use and how to approach disorders of it clinically. Specifically, Gerber et al. (2012) noted a lack of consensus on how to identify, assess, and treat disorders of language use. O'Neill (n.d.) also describes this lack of consensus and outlines the challenges it creates for accurate assessment of social communication and pragmatics. Notably, O'Neill raises issues that parallel the questions raised by Gerber et al. (2012), such as differing approaches to and definitions of language use and a lack of extensive knowledge of pragmatic competencies in children to pragmatic assessment. Norbury (2014) also discusses several issues with the conceptualization of pragmatics and social communication, including "…inconsistencies in terminology and diagnostic criteria, a paucity of reliable, culturally valid assessment tools supported by adequate normative data, and limited comparison of social communication profiles across different neurodevelopmental disorders" (2014, p. 204). Thus, it has been widely acknowledged that there is confusion with the conceptualization of pragmatics and social communication.

Objective

In light of the persistent confusion surrounding impairments of social communication, the need for consensus on the conceptual foundations of social communication impairment and its relationship with pragmatics has recently been acknowledged (Adams, Lockton, Freed, et al., 2012; Gerber et al., 2012; Norbury, 2014). Certainly, without a well-grounded understanding of the bases of both social communication and pragmatics, sound research that can be translated to the assessment and treatment of social communication and pragmatic disorders in preschoolers and school-aged children will advance slowly at best. In order for scientific research to be

transferred into clinical practice, a process of knowledge translation must occur. Knowledge translation is defined by the Canadian Institutes of Health Research as a "…dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system" (CIHR, 2005). In models of knowledge translation, scientific research is how new knowledge is generated (Graham et al., 2006). For knowledge translation to be effective, there must first be a sound base of scientific knowledge that can then be applied in clinical settings and policy making. That is, consensus on the constructs of social communication and pragmatics in their own right is necessary before we can understand the concepts that underlie *deficits* or *impairments* in these two constructs. The purpose of this study is to clarify the key concepts of social communication and its relationship with pragmatics for preschool and school-aged children in an effort to move towards consensus.

2.2   Method

This study employed the Delphi technique, "…a group facilitation technique, which is an iterative multi-stage process, designed to transform opinion into group consensus" (Hasson, Keeney, & McKenna, 2000, p. 1). The Delphi method has been successful for gaining consensus in a number of different fields for both policy planning and conceptual development (Bartlett, Lucy, & Bisbee, 2006; Castro & Pinto, 2013; Delbecq, Van deVen, & Gustafson, 1986; Gill, Leslie, Grech, & Latour, 2013; Hasson et al., 2000; Linstone & Turoff, 2002; Okoli & Pawlowski, 2004; Palisano, Rosenbaum, Bartlett, & Livingston, 2008). The Delphi technique allows panel members to express their expert opinions anonymously and without the influence of others (in contrast to a focus group) (Okoli & Pawlowski, 2004). This method also permits the panel members with time for careful consideration of the questions posed. The Delphi process

affords participants with the opportunity to review and comment on the responses of other participants in each new round. In doing so, areas of agreement and disagreement and areas requiring clarification are highlighted, making it a useful starting point for clarifying the relationship between pragmatics and social communication.

2.2.1 Participants

A panel of 12 'social communication experts' was initially recruited via email to participate in this study. Participants were selected based on their research and/or clinical expertise in the area of children's social communication/pragmatic skills. Participants confirmed their participation in the study via email and were provided with a unique participant identification number. All participants provided informed consent. Ten of 12 invited participants responded to Round 1. Figure 2.1 illustrates the response rate from participants across all three rounds.

A description of the ten participants who completed Round 1 can be found in Table 2.1. All participants held clinical credentials in Speech-Language Pathology. Participants also had a breadth of clinical and research expertise as a group, including the social communicative and/or pragmatic skills of typically developing children, children with language impairment, Fetal Alcohol Spectrum Disorder, Autism Spectrum Disorder, and/or Attention Deficit Hyperactivity Disorder, and children from diverse cultural and linguistic backgrounds. All but one participant had several peer-reviewed publications in the area of social communication and/or pragmatics.

Table 2.1. Description of panel members who completed Round 1.

Country:	*USA:*	6	*Canada*:	4
Highest degree held (in SLP or related field):	*Ph.D.:*	9	*M.Cl.Sc:*	1

Years of clinical experience:	*10 to 25*: 2	*25+:* 8
Years of research experience:	*10 to 25:* 3	*25+:* 6

Figure 2.1. Questionnaire response rate.

Round 1	12 participants invited	10 responses completed[1]
Round 2	10 participants invited	8 responses completed[2]
Round 3	9 participants invited	8 responses completed
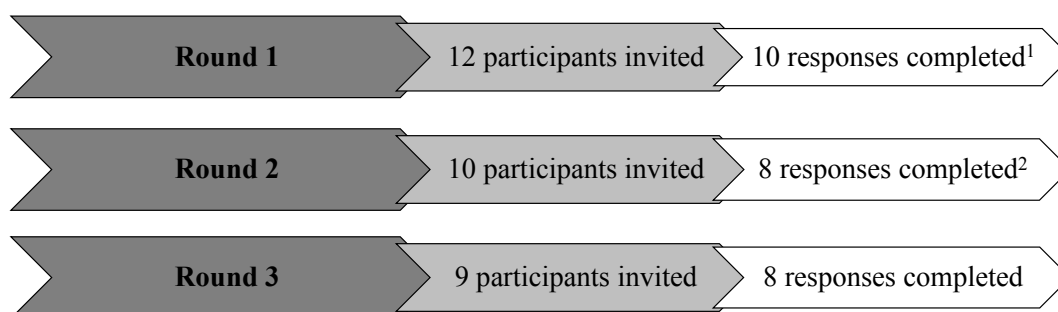
Note: [1]The tenth participant submitted Round 1 responses after analysis had already taken place; as such, this participant's responses were not incorporated into the Round 1 analysis. This participant expressed interest in continuing their participation in the study, and was therefore included in the second round. [2]A ninth participant was unable to complete Round 2 for personal reasons, but asked to be included in Round 3.

2.2.2 Procedure

Participants completed a series of three iterative questionnaires via online survey software (SurveyGizmo.com). For each round, participants were emailed a unique link to the questionnaire, which included three or four open-ended questions to which they responded in free-text boxes. No word limit was imposed on participants' responses. A summary of the previous round(s) accompanied the second and third round questionnaires, and participants were asked to comment if they felt the summary had adequately captured their comments from the previous round. Each questionnaire also included the option for participants to ask questions or provide additional comments. An initial deadline of two weeks was set for each round. One

reminder email was sent out for each round, in which a one-week extension was offered to participants who had not yet completed the questionnaire. Participants who did not respond to a questionnaire within the extended deadline were presumed to have withdrawn, and thus were not emailed links for participation in subsequent rounds.

2.2.2.1 Questions

The first questionnaire of a Delphi process is typically based on broad, open-ended questions (Hsu & Sandford, 2007). Thus, a review of the developmental pragmatic and social communication literature (summarized in section 2.1) was conducted to inform the development of three broad questions that comprised the first questionnaire. The questions that comprised the Round 2 and Round 3 questionnaires were developed from the results of the subsequent round(s). Figure 2.2 provides an outline of the questionnaire content for each round. Complete versions of the questionnaires can be found in Appendices 2A, 2B, and 2C.

2.2.3 Analysis

Inductive thematic analysis was employed for this study, using guidelines from Braun and Clarke (2006). Inductive thematic analysis is a qualitative method "…for identifying, analyzing, and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79). Braun and Clarke (2006) recommend six steps for conducting a thematic analysis: 1) familiarize yourself with the data; 2) generate initial codes; 3) search for themes; 4) review themes and sub-themes; 5) define and name themes and sub-themes; and 6) produce a report. For each round of responses, K. I. conducted steps 1), 2), and 3) by first reading and re-reading data to become familiar with it, and then by generating codes according to common keywords in each data set. These codes were grouped together according to common underlying ideas (Step 3). To ensure inter-coder reliability, E. S.-D. then reviewed the groups of coded items independently, working to identify

any areas in which she disagreed with the groupings. Any differences were discussed until agreement on the groupings was reached. Together, the researchers reviewed groups of codes (Step 4), and then named and defined themes and subthemes within these groups (Step 5). The questionnaire for the subsequent round was developed from these themes (Step 6). This process of analysis took place after each round in order to formulate questions for the subsequent round as per the recommended Delphi procedure (Delbecq et al., 1986; Hsu & Sandford, 2007; Linstone & Turoff, 2002). Analysis lasted approximately two weeks per round. Details on the analysis of each round can be found in Figure 2.2.

Round 1

In Round 1, participants were asked to comment on the key features of social communication and those of pragmatics, in addition to stating whether or not they viewed the terms of synonymous. Analysis in Round 1 involved identifying those features recognized as unique to either pragmatics or social communication and those that were given in response to both terms (see Table 2.2 for guidelines). These features were plotted on a Venn diagram as a thematic map of the features identified in participants' responses (see Figure 2.3).

In addition to listing features (e.g., verbal, reciprocal, conversational management skills), participants also mentioned different knowledge or processing domains that played a role in social communication and pragmatic skills (e.g., social cognition, executive function). The distinction between features and knowledge/processing domains is reflected in several models of social communication and pragmatics (e.g., Adams, 2005; Coggins & Olswang, 2001) wherein language use is considered to draw from several different domains. Thus, these knowledge/processing domains were defined as a theme separate from the features in our analysis of Round 1.

Lastly, comments on the synonymy of these terms were also analyzed. In addition to stating whether or not s/he viewed social communication and pragmatics as synonymous, some participants speculated on the theoretical origins of the terms as a way to justify why the terms were or were not synonymous.

Table 2.2. Guidelines for plotting features on Venn diagram.

Uniquely social communication	Participants identified it as key to *only* social communication.
Uniquely pragmatics	Participants identified it as key to *only* pragmatics.
Fully overlapping	The number of participants who identified it as key to one term was *equal to* or *within one point* of the number of participants who identified it as key to the other term.
Between overlap and social communication	A number of participants identified the feature as key to social communication, but fewer identified it as pragmatics. The difference was *two or more points*.
Between overlap and pragmatics	A number of participants identified the feature as key to pragmatics, but fewer identified it as social communication. The difference was *two or more points*.

Figure 2.2. Questionnaire content and analyses

Literature Review

Round 1 Questions:

List:

-Key features of social communication

-Key features of pragmatics

-Comment on synonmy of terms

Analysis of Round 1 Responses:

-coding, definition, and naming of unique and shared terms

      -plotted on Venn diagram

-coding, definition, and naming of additional themes:

      -knowledge/processing domains

      -pragmatic theories and social communication models

Round 2 Questions:

Comment on:

-placement of features identified in Round 1

-relevant knowledge domains for social communication and pragmatics

-distinction of theoretical groundings of pragmatics vs. existing models of social communication

Analysis of Round 2 Responses:

-coding, definition, naming, and incorporation of suggested revisions to key features, plotted in table format

-coding, definition, and naming of knowledge/processing domains

-coding, definition, and naming of addtional themes:

      - propositions for relationship between social communication and pragmtatics

      -influence of other disciplines

Round 3 Questions:

Comment on:

 -revised placement of features

-potential relationships between social communication and pragmatics

-influences on use of social communication and pragmatics

Analysis of Round 3 Responses:

-coding, definition, naming, and incorporation of final revisions to key features

-coding, definition, and naming of possible relationships between social communication and pragmatics

-coding, definition, and naming of influences on social communication and pragmatics

Final results

Round 2

In Round 2, participants were asked to comment on the placement of key features in the Venn diagram, the relevant knowledge/processing domains, and the distinction between theories and models as it influences social communication and pragmatics. Analysis of Round 2 responses involved the incorporation of panel's suggested revisions of key concepts of social communication and pragmatics. Using these suggestions features were re-plotted in table format (see Appendix 2B, Table 1), so as not to confuse a thematic map of responses with a specific model. Participants' suggestions for specific knowledge and processing domains key to social communication and/or pragmatics were also analyzed. Their suggestions were incorporated to create a list of key knowledge and processing domains (see Table 2.3).

An additional level of analysis was conducted after Round 2, examining responses from both Round 1 and Round 2. Recurring themes were identified and used to formulate a question for Round 3. Specifically, in both rounds participants proposed explanations for the potential relationship between social communication and pragmatics and speculated on influences on our use of these terms.

Round 3

In Round 3, participants were asked again to revise the key features of social communication and pragmatics, to comment on the proposed potential relationship between social communication and pragmatics, as well as on what influences our use of these terms.

Participants' final comments on the placement of key features of social communication and pragmatics were analyzed. Suggested revisions were applied to the table of key features of social communication and pragmatics to comprise a final list of features.

Participants' comments on the potential relationships between social communication and

pragmatics were analyzed. A list of suggestions for potential relationships was compiled.

The same process of analysis was applied to participants' responses pertaining to the influence of other disciplines on the terms pragmatics and social communication. Participants' perceptions on the influences on social communication and pragmatics were coded, named, and defined.

2.3 Results

There were several themes that were revealed in the analysis, including those that extended beyond the original purpose of this study – i.e., to clarify the key concepts of social communication and pragmatics. Indeed, participants did clarify these concepts. However, participants also speculated on how the two terms may be related, what has influenced our current use of these terms, and how definitions of language and of communication might relate to social communication and pragmatics.

2.3.1 Clarification of key features and knowledge/processing domains of social communication and pragmatics

In the first round, the panel was asked to comment on the key features of social communication and pragmatics. Analyses revealed the continued clarification of the key features of social communication and pragmatics as a persistent theme over all three rounds.

In Round 1, participants identified 15 key features of social communication and pragmatics with various degrees of overlap (see Figure 2.3), and addressed if they viewed the terms as synonymous. Three of nine participants identified the terms as synonymous, and therefore only listed features for one term. The features listed by these participants were included in the tally for features of social communication *and* in the tally for features of pragmatics, in order to reflect

their views on the synonymy of these terms. This information was presented to participants in a Venn diagram format in the Round 2 questionnaire (Appendix 2B).

Participants proposed both the addition and movement of features in response to the Round 2 questionnaire. First, one participant suggested the addition of other conversational management skills, providing the following rationale: If 'initiation of interaction' is singled out, then other conversational management skills such as 'maintenance of interaction' and 'conversational repair' should also be specifically identified (Participant 3). This participant also suggested the addition of conflict resolution as part of social communication. Thus, these features were added to the list.

Secondly, several cogent arguments were offered for moving features to the conceptual area that social communication and pragmatics share. One participant suggested that 'purposeful transmission of a message' and 'social goal' should also be key to pragmatics, and not just social communication with the following rationale:

> If pragmatics is the study of the communicative functions of language and the appropriate
> use of language in context, then the purposeful transmission of a message is implicit in
> these definitions. In speech act theory, an utterance is defined in terms of its illocutionary
> force (intentions of the speaker) and perlocutionary force (effect of the listener). I think
> that both the purposeful transmission and social goal of a message are implied in the
> multiple levels of understanding an utterance. (Participant 6)

By applying the same logic, this participant also suggested moving 'interpersonal and minimally dyadic', which was originally listed as key to only social communication, to the shared column. This participant noted that 'interpersonal' is a core concept of many of the seminal theories of pragmatics. Three other participants used similar logic to propose that higher

Figure 2.3. Key concepts of social communication and pragmatics after Round 1.

1. Purposeful transmission of a message
2. Social goal

3. Function of language/communication
4. Higher order linguistic skills (e.g., irony, sarcasm, figurative language)

5. Interpersonal and minimally dyadic

6. Modifying language considering contextual variables

7. Verbal
8. Non-verbal
   8a. Specific non-verbal skills – pitch, prosody, intonation, proxemics
9. Shared attention
10. Reciprocal
11. Different discourse genres (e.g., narrative, expository)
12. Awareness of partner's knowledge/perspective
13. Conversational management skills
    13a. Initiation of interaction

= identified with social communication

= identified with pragmatics

= more strongly identified with one construct over the other

= identified equally with both pragmatics and social communication

order linguistic skills (e.g. sarcasm, irony) must also be social communicative, and not solely

pragmatic. Using figurative language "…provides a 'bond' between the listener and speaker as

others who don't share common background knowledge may not be able to understand the utterance. Nothing is more social in communication than that" (Participant 11).

In contrast, one participant proposed that 'different discourse genres' should be solely pragmatic, suggesting that certain genres (e.g., expository) do not have social purpose. Thus, this feature was moved from the overlap to the uniquely pragmatics column for Round 3.

Furthermore, Round 2 responses indicated that the panel did not agree on the placement of 'function of language/communication'. Specifically, two participants noted that although they could see pragmatics and social communication sharing all other features, this feature should remain solely pragmatic. Yet two other participants argued that it could not be separated from social communication, with one making the following counter-argument:

> While "function of language/communication" is central to how we define pragmatics, I'm not sure it's possible to separate this concept from social communication. If social communication involves shared attention, reciprocal interaction, the use of language to tell a story (narrative) or explain a concept (expository), awareness of partner's knowledge/perspective (and therefore how to modify one's message to achieve a communicative purpose), and knowledge and use of conversational management skills, then it is implicit that language is being used to serve specific communicative functions. (Participant 6)

The results after the suggestion revisions from Round 2 were taken into account can be seen in Figure 2.4.

Figure 2.4. Revised key concepts of social communication and pragmatics after Round 2.

1. Purposeful transmission of a message
2. Social goal
3. Function of language/communication
4. Higher order linguistic skills (e.g., irony, sarcasm, figurative language)
5. Interpersonal and minimally dyadic
6. Modifying language considering contextual variables
7. Verbal
8. Non-verbal
    8a. Specific non-verbal skills – pitch, prosody, intonation, proxemics
9. Shared attention
10. Reciprocal
11. Different discourse genres (e.g., narrative, expository)
12. Awareness of partner's knowledge/perspective
13. Conversational management skills
    13a. Initiation of interaction
    13b. Maintenance of interaction
    13c. Repair/revision of conversational breakdowns

■ = identified with social communication

■ = identified with pragmatics

■ = identified with both pragmatics and social communication

▢ = new feature identified

In Round 3, participants were asked to comment on the revised placement of features (see Appendix 2C for the Round 3 questionnaire). Seven of the eight respondents commented on the revised placement, offering additional suggestions for movement of features. Five participants suggested that different discourse genres could be a 'shared' feature. For example, one participant noted that "telling a good story" has a social aspect and thus would belong in the

'social communication' column. Another posited that perhaps the *existence* of genres is not social, but *selecting the appropriate genre* for the given social interaction is social. That is, these participants all suggested that different discourse genres do have a social nature, thus may be more appropriate listed as a shared feature. No participants suggested that 'discourse genres' remain unique to pragmatics; thus, this feature was moved to the shared column. Additionally, in Round 3, one participant supported the inclusion of 'social goal' as a shared feature.

> Referring back to one expert's comments about the illocutionary and perlocutionary forces, it seems difficult to separate social goal from speech act… I can imagine a scenario whereby a peer asks you to do something that you don't want to do at the moment. My social goal might be 'I'm still hoping to become friends with him' and my immediate (short term) illocutionary intent is to politely decline the request so that he might ask me to do something again (rather than stating a flat out rejection). (Participant 3)

Additionally, in Round 3, participants were presented with the above argument and were asked to comment on where they might place "function of language/communication". Six participants responded to this particular question; and five of those six participants thought it should also be a shared feature. Two of these five participants noted that the function of language is consistent with the social goal of communication, and thus should be important to both pragmatics and to social communication. Another supported this view, stating "pragmatics/social communication focuses on the functions… of communication and language, rather than on linguistic forms" (Participant 5). Therefore, 'function of language/communication' was moved to

the shared column, resulting in a final list wherein pragmatics and social communication share

all key features (see Figure 2.5).

Figure 2.5. Final results: key concepts of social communication and pragmatics.

1. Purposeful transmission of a message
2. Social goal
3. Function of language/communication
4. Higher order linguistic skills (e.g., irony, sarcasm, figurative language)
5. Interpersonal and minimally dyadic
6. Modifying language considering contextual variables
7. Verbal
8. Non-verbal
    8a. Specific non-verbal skills – pitch, prosody, intonation, proxemics
9. Shared attention
10. Reciprocal
11. Different discourse genres (e.g., narrative, expository)
12. Awareness of partner's knowledge/perspective
13. Conversational management skills
    13a. Initiation of interaction
    13b. Maintenance of interaction
    13c. Repair/revision of conversational breakdowns

= identified with social communication

= identified with pragmatics

= identified with both pragmatics and social communication

2.3.1.1   *Key knowledge/processing domains*

In addition to identifying key features (as listed above) in Round 1, participants also

identified knowledge/processing domains key to pragmatics and social communication.

Participants were asked to comment on these knowledge bases in Round 2. One participant

viewed pragmatics as a component of social communication, and thus included it as one of the

knowledge/processing domains for social communication. Other participants also suggested

additional knowledge bases that underlie social communication and pragmatics (see Table 2.3).

In general, participants suggested that social communication and pragmatics likely share the

same knowledge/processing domains; however, they did not exhaustively list such domains. One

participant, however, did note the importance of separating knowledge domains from processing

domains, likening a knowledge domain to "language *knowledge*" and a processing domain to

"language *processing*".

Table 2.3. Key knowledge/processing domains, as identified in Round 2.

Knowledge/Processing Domains	# of participants who identified it
Social cognition	4
Receptive and expressive language skills/processing	4
Executive function	3
Social emotion regulation	1
Social interaction	1

Knowledge of the social function to be performed	1
Pragmatics	1

In summary, after three rounds of responses, the panel indicated that social communication and pragmatics share the same set of features (see Figure 3.5). Notably, as support for the sharing of features, many participants referred to the social nature of features that were originally identified as 'pragmatic'. Indeed, it was noted that "[b]ased on the rationales (of participants) and the broad use of the term pragmatics… it is difficult to think of an communicative behavior or aspect that is uniquely pragmatic" (Participant 11). Furthermore, most participants agreed that pragmatics and social communication likely draw from the same knowledge/processing domains (Table 2.3). That is, participants came to consensus that social communication and pragmatics share the same key features and knowledge/processing domains. However, despite sharing key features and knowledge domains, participants expressed that social communication and pragmatics are still distinct in some way, although consensus on *how* the terms differ was not achieved as this extended beyond the scope of the present study.

2.3.2   Suggestions for the relationship between social communication and pragmatics

Analyses of participants' responses also revealed additional themes beyond describing the key features of social communication and pragmatics. One theme revealed was participants' suggestions for describing the relationship between social communication and pragmatics. Specifically, after Round 2, it was noted that participants had responded to questions not only by: a) listing the key features of pragmatics and social communication (i.e., specific observable

behaviours, such as initiation of interaction), henceforth called "*minimal descriptive units*"; but also by b) listing *knowledge/processing domains* that appeared to be broader in nature than minimal descriptive units (e.g., cognitive knowledge, which may be used for executing other non-communicative skills); and by c) identifying larger 'integrated' units, henceforth called *events*, that incorporate (a) and (b) (e.g., resolving conflict; making friends). For example, one participant suggested that, "…if you are skilled at conflict resolution, you probably are skilled at many of the other skills listed…" (referring specifically to verbal and non-verbal skills, shared attention, reciprocity, and awareness of partner's knowledge/perspective). In this case, 'conflict resolution' is an *event* that, in order to be successfully executed requires several *minimal descriptive units* (e.g., verbal and non-verbal skills, reciprocity, etc.).

In Round 3, we presented the relationship proposed above to participants. First, they were asked to comment on the proposed distinction between *minimal descriptive units* and *knowledge/processing domains*. Seven participants agreed that this distinction had the potential to be clinically useful. However, these participants also noted that much work remains to be done before its utility can be determined. For example, one participant raised the issue that we do not currently have evidence (tests of psychological reality) to separate out the knowledge/processing domains from the minimal descriptive units. Another participant posited that the utility of this distinction is dependent on how the minimal units are defined. Yet another noted that knowledge/processing domains listed are employed for more than just social communication/pragmatics; thus, a definition of these domains specific to social communication/pragmatics would be necessary. Furthermore, one participant posited that which domains and how they are employed would likely vary based on the minimal unit. Although seven participants thought that the distinction between minimal descriptive units and

knowledge/processing domains was useful, the eighth participant disagreed. This participant suggested that minimal units seem to be "example behaviors that have tendrils reaching into a variety of social-cognitive, pragmatic, and language abilities" (Participant 2).

Several suggestions for clarifying minimal descriptive units, knowledge/processing domains, and events were also made. Additionally, participants speculated about the necessity for minimal descriptive units, knowledge/processing domains, and events to be described in a developmentally sensitive way. Specifically, participants acknowledged that different minimal units and knowledge/processing domains would be employed depending on the child's stage of development. For example, a pre-linguistic infant engaging in joint attention will access different elements of Figure 2.5 and Table 2.3 to engage socially than a preschooler would access when interacting with a classmate. "Children with very limited language comprehension and no language production abilities can and do engage in social communication…" (Participant 11). This participant goes on to note that language processing abilities become more important as the child ages. Another participant noted that a developmental approach makes sense, as it is an approach used in other areas of language development (e.g., syntax). However, s/he noted, minimal units would need to be sorted out first, then empirical studies of the development of minimal descriptive units could help ascertain developmental trajectory of these units.

Participants also made alternative proposals to the one made in a, b and c, as suggestions to better capture the relationship of pragmatics and social communication. For example, one participant proposed that perhaps pragmatics refers to some deeper level of analysis, whereas social communication is something that is analyzed on the surface level. Another participant suggested that perhaps pragmatics is the existence of or study of the specific minimal units, whereas social communication is the application of these units in a social interaction. Participant

6 suggested "…perhaps social communication encompasses the interaction among the processing/knowledge domains and minimal units in the execution of events, while pragmatics provides the explanatory theories of why and how this occurs". Participant 11 stated that s/he had always thought of pragmatics as a term that referred to language, whereas social communication is used to describe "…all processes/behaviours that do not fit the definition of language". Another participant viewed pragmatics as a component of social communication, wherein pragmatics is narrower than social communication. "I tend to define pragmatic behaviors more narrowly than this table does, however, limiting it to language function (think speech acts or communication acts) and the management of conversation. I realize that considering "pragmatics" leads one directly into social communication, however" (Participant 2).

In summary, participants agreed that a multi-level conceptualization of the minimal descriptive units, knowledge/processing domains, and events has potential. Participants also agreed that this multi-level conceptualization must take development into consideration. Several participants made suggestions for how social communication and pragmatics fit into such a multi-level conceptualization, in addition to alternatives for describing the relationship between social communication and pragmatics. In doing so, participants have both identified several areas of agreement as well as indicated that much work remains to be done to understand how social communication and pragmatics are conceptually related.

2.3.3 Influences on the distinctive use of the terms 'social communication' and 'pragmatics'

As participants listed the key features of social communication and pragmatics, a third theme was revealed: influences on the distinct uses of the terms 'social communication' and 'pragmatics'. Specifically, participants referred to the disciplinary origins of the two terms, and

commented on the accessibility of the terms to other health professionals and the public as well as the influence of other clinical groups on the use of these terms.

First, in Round 1, participants referred to the different disciplinary origins in their responses. Specifically, participants referred to linguistic theory when discussing pragmatics and to the behavioural sciences when discussing social communication. One participant referred to several different pragmatic theories (e.g., Grice's Cooperative Principle (Grice, 1975)), though others referred to models of social communication (e.g., (Adams, 2005) and social information processing (e.g., Crick & Dodge, 1994). To explore the influence of disciplinary origins, in Round 2 panel members were asked to comment on the role of theories and models in our current use of these terms. Panel members generally did not draw a strong distinction between theories and models; however, all agreed that both theories and models impact our clinical approaches and research questions. One participant suggested "…we should not aim for a distinction between theory and modeling but rather an integration of theory and modeling in both research and clinical applications" (Participant 3). Thus, participants agreed that pragmatics was discussed from a 'theoretical' lens whereas social communication was discussed from a 'model' perspective. Furthermore, they came to consensus that this distinction is a relic of the disciplinary origins of the terms and does not affect current uses of the terms.

In both Round 1 and in Round 2, participants suggested that the term 'social communication' is more accessible than 'pragmatics' to other health professionals, educators, and lay people. Specifically, participants suggested that social communication is a more "user-friendly" term to use when communicating with clients and families. For example, in Round 1, one participant wrote "…social communication is a more accessible term for most people; pragmatics is unfamiliar to 'lay people' and even within the field, poorly (or at least diversely)

defined" (Participant 5). Similarly, in Round 2, this participant suggested that social communication, as a less obscure term to the general public, is replacing pragmatics. "…[T]he choice of term is governed partly by discipline (i.e., continuance of the term pragmatics by theoretical linguistics but greater use of [social communication] in clinical fields, including psychology, psychiatry, and SLP)" (Participant 5). Participants were asked specifically to comment on the impact of such influences on the use of the terms pragmatics and social communication in Round 3. One participant agreed that social communication is a term better understood by SLPs, and another speculated that the general public also understands social communication better than pragmatics. Another participant noted "…the term 'social communication' is more reflective of what really has to happen in communication. I would also agree that it is probably more accessible to others with whom we work" (Participant 1). Thus, of those who specifically commented, participants came to consensus that 'accessibility' certainly influences current uses of the terms pragmatics and social communication.

In addition, in the initial rounds, some participants speculated that the increased focus on populations with prominent social functioning difficulties, such as ASD, is another driving force behind the differential use of these terms. In Round 1, one participant noted that the term 'social communication' was frequently used interchangeably with 'pragmatics' in the ASD literature. In Round 2, another suggested that the disciplines of special education and clinical psychiatry use the term 'social communication' to describe language use deficits in children with disabilities, such as ADHD and conduct disorders. When asked to comment on this in Round 3, two participants agreed that ASD has had a large impact of the use of the term 'social communication'. One participant noted that s/he had observed resistance in the ASD community to using 'pragmatics' and 'social communication' synonymously, because those in the ASD

community think of social communication as a subset of social skills. Other participants noted that the new *DSM-5* criteria for ASD, as well as the new category of Social (Pragmatic) Communication Disorder, have influenced our use of these terms. For instance, one participant commented on the potential impact of the *DSM-5* on our conceptualization. "I am concerned about the SLP role in the new *DSM-5* social (pragmatic) communication disorders… how will we discriminate children whose social communication problems are behavior-based rather than (or perhaps in addition to) linguistically based" (Participant 3).

In summary, participants came to consensus on the potential influences on our current use of the terms social communication and pragmatics. First, the panel indicated that the disciplinary origins of the terms did not affect the current use of these terms. The panel also acknowledged that the accessibility of the term 'social communication' in comparison to pragmatics has influenced our use of the terms. Additionally, they speculated that 'social communication' has become more widely used due to the influence of clinical populations such as ASD, which is characterized by difficulties with social functioning. Lastly, participants raised concerns as to how the DSM-5 will impact how we use these terms.

2.3.4 Language vs. communication in relation to social communication vs. pragmatics

A final theme that was revealed was the role of 'language' and 'communication' in our conceptualization of social communication and pragmatics. One participant considered the requirements for *social* communicative vs. communicative behaviours, specifically questioning whether the size of the audience and purpose of the message influence if 'communication' can be classified as 'social communication'. Another noted that our current use of the term 'pragmatics' could have implications for the distinction between 'language' vs. 'communication'. "Elizabeth Bates introduced pragmatics as 'rules governing the use of language in context' back in 1976.

This was quite a restricted view/use of this term. When Prutting (1982) proposed that pragmatics is a more general term referring to social competence, this appears to be the use of the term that has emerged from [this] series of questions" (Participant 11). This participant then expressed concern that the more general use of the term 'pragmatics' may blur the lines between the definitions of language vs. communication. An additional participant also commented on the distinction between language and communication, specifically noting its importance for describing people with ASD. Thus, participants drew attention to another facet of the distinction between social communication and pragmatics; that is, the distinction between language and communication.

2.4 Discussion

Several steps towards consensus have been made in the present study, although much work remains to be done to fully understand the conceptual bases of social communication and pragmatics. To review, several issues currently obscure our understanding of social communication and pragmatics. The distinction between social communication and pragmatics is not consistent across various models of these constructs, and a similar barrier is apparent in classification of language use disorders, with two major classification manuals (*DSM-5*, *ICD-11*) using different terminology to describe similar disorders. The lack of conceptual clarity has extended to the clinical level, calling into the question the conceptual bases of social communication/pragmatic assessment and intervention, as well as SLPs' scope of practice when treating social communication/pragmatic disorders (Gerber et al., 2012; Norbury, 2014; O'Neill, n.d.). The results of the current study begin to address some of these issues.

First, this study expands on the literature by achieving consensus from this panel of experts that minimal descriptive units and knowledge/processing domains are *shared* by both social

communication and pragmatics. Participants indicated that pragmatics and social communication share all minimal units and knowledge/processing domains that they as an expert panel listed. These minimal units and knowledge/processing domains are consistent with the literature; however, notably, no single source in the literature included all of the features brought forth by participants in the current study. That is, the study resulted in a comprehensive list of features that are listed across several different sources in the literature, although it did not reveal any new features of social communication/pragmatics. The different knowledge/processing domains listed by participants are also consistent with conceptual models of social communication/pragmatics, although more domains were listed in the present study than are listed in the literature. Many models of social communication include <u>social cognition</u>, <u>language skills</u>, and <u>executive function</u> as components (cf., Adams, 2005; Coggins & Olswang, 2001), components that were reflected in the knowledge domains listed by participants.

Features of social communication/pragmatics listed by participants also align with the features listed in classification systems. For example, SPCD in the *DSM-5* is characterized by difficulty with <u>verbal</u> and <u>non-verbal</u> language use, challenges <u>changing language according to the listener's needs</u>, deficits in <u>understanding non-literal language</u>, and deficits in <u>using language appropriately for a social purpose</u>. The description of pragmatic language impairment in the beta-version of the *ICD-11* is also consistent with that of the participants by including deficits <u>understanding meaning in context</u> (e.g., making inferences, verbal humour, and resolving ambiguities), and difficulties <u>using language appropriately in conversation and narrative contexts</u>.

Thus, the minimal descriptive units and knowledge/processing domains listed in this study are consistent with those listed in the social communication and pragmatics literature. As such,

the current study has expanded on previous research by expressly identifying minimal units and knowledge/processing domains as *shared* by both pragmatics and social communication.

Second, by accomplishing the above, the results of the present study also advance our understanding by drawing attention to the relationship between social communication and pragmatics. Specifically, the panel reached consensus in that social communication and pragmatics differ in some way despite sharing key features, although consensus on *how* the terms differ was not reached[1]. Results do, however, lend support to literature that attempts to differentiate the terms (e.g., Fujiki & Brinton, 2009; Gerber et al., 2012; Norbury, 2014). Additionally, results validate models of social communication that differentiate between the two terms. Some existing models of social communication indeed draw this distinction by including pragmatics as a contributor to social communication. For example, Adams (2005) distinguishes the two by including pragmatics as a component of social communication. In their model of social communication, Coggins and Olswang (2001) propose that social communicative behaviours draw from social cognitive abilities and language abilities, by which pragmatics, syntax, and semantics are subsumed. Norbury (2014) also posits that social communication and pragmatics are not one in the same; specifically, she proposes that pragmatics is much more closely related to language structure, a distinction that is also clearly indicated in the Coggins and Olswang model and early functional models of pragmatics (e.g., Prutting, 1982). The results of the current study strengthen the distinction outlined by these authors by highlighting both the shared features and the persistent distinction between social communication and pragmatics.

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[1] This theme was revealed after Round 3; however, several participants expressed that their time would be limited going forward, and as such, we were unable to pursue this notion further in a 4th round.

Additionally, the results of this study suggest that classification systems that distinguish between pragmatics and social communication may be better representative of the conceptual foundations of these terms than classification systems that do not make such a distinction. For example, a distinction between social communication and pragmatics is reflected in the *ICD-11*'s classification of language disorders with primarily pragmatic difficulties, wherein *pragmatic* difficulties arise when using language appropriately for *social communication*. That is, the *ICD-11* aligns with the results of the present study as a classification system that differentiates social communication from pragmatics; however, this distinction is not explicitly delineated and more research is necessary before this distinction can be clearly defined. Thus, the present study supports a distinction between pragmatics and social communication, lending credence to models and classifications of social communication and pragmatics that also distinguish these terms.

Third, the present study has called attention to influences outside of speech-language pathology on pragmatics and social communication. For example, participants in this study acknowledged other disciplines, such as linguistics, psychology, and psychiatry, in addition to other healthcare professionals (e.g., specialists in ASD), as having an influence on how we use the two terms. Indeed, the influence of other fields on our conceptualization of pragmatics and social communication is widely acknowledged in the literature. In models of social communication/pragmatics, components such as executive function highlight the influence of psychology on our conceptualization. Further, "…the rise of more usage-based and functional views of language acquisition and competence" has been raised as factors influencing the growing need for assessment pragmatic difficulties (O'Neill, n.d.). For example, concerns about distinguishing between the classification of SPCD and other clinical groups that are characterized by their social functioning deficits have been recently voiced (e.g., Norbury, 2014;

Vivanti et al., 2013). That is, the classification of a clinical group with social functioning limitations has directly impacted how social communication/pragmatic disorders are conceptualized.

Therefore, this study has advanced our current understanding of the conceptual distinction between social communication and pragmatics and as such, has also begun to address the clinical issues raised by Gerber et al. (2012), O'Neill (n.d.), and Norbury (2014). However, the distinction between pragmatics and social communication still needs much investigation before a sound conceptual understanding is attained. One participant noted, "It is difficult to separate features, characteristics, and behaviors that are so overlapping and interdependent" (Participant 2). Participants in this study identified several areas of future research as next steps in the difficult task of understanding these overlapping and interdependent features.

First, the next stages of investigation should delve deeper into the association or relationship between social communication and pragmatics. Specifically, future research should strive to better understand the distinction between the two terms. A logical starting point may be the continued investigation of models that reflect a multi-level conceptual distinction between social communication and pragmatics. Furthermore, as the conceptual distinction between social communication and pragmatics begins to be sorted out, it will be important to also consider the language vs. communication distinction as it relates to social communication and pragmatics.

Additionally, an investigation of how disciplines outside of SLP conceptualize social communication and pragmatics may be beneficial to advancing our current conceptualization. Participants of this study identified 'social communication' as a term influenced by the ASD community, and as a term more accessible to the general public than 'pragmatic'. An investigation of how 'social communication' and 'pragmatics' are used in areas outside of

speech-language pathology, including the general public, will contribute to a more thorough understanding of these terms. Furthermore, knowledge of how others use the terms can facilitate knowledge translation in inter-professional environments and when interacting with clients and families. That is, by understanding the influences on the terms social communication and pragmatics, knowledge translation can be facilitated and the clinical issues raised by Gerber et al., O'Neill, and Norbury can be better addressed. For example, SLPs' scope of practice when treating and assessing social communication and pragmatics in children can be better defined, and assessments of social communication and pragmatics can be improved.

In conclusion, the current study has advanced the field of Speech-Language Pathology towards consensus on the conceptual foundations of social communication and pragmatics; first, by explicitly identifying the complete overlap of the key features of these terms; and second, by emphasizing that these terms are still distinct despite sharing key features. Furthermore, the expert panel in this study has explicitly called attention to areas that require future research. In achieving these things, this study has moved towards a common paradigm and begun to address the conceptual and clinical concerns raised by Brinton, Craig, and Skarakis-Doyle more than 30 years ago.

Limitations of the study

There were some limitations to this study. First, due to the nature of the Delphi method, there was no ability to ask specific participants to clarify their comments before the release of the next round's questions. Thus, responses (or parts of responses) that were unclear required the researchers to interpret them without any possible "real-time" clarification from the participant. Additionally, external time constraints prevented additional rounds of questions. Specifically, the

end of Round 3 coincided with the beginning of a new academic year, and as such, many participants indicated that going forward, their time would be limited.

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2.6   Appendices

Appendix 2A

Round 1 Questionnaire

1. Currently, there is not a consensus in the field of Speech-Language Pathology regarding
    the essential features of social communication. Below, please list and comment on the
    essential features that qualify an interpersonal exchange as 'social communication'.

2. The term 'pragmatics' has also been used to describe language use in context. Please list
    the core concepts of pragmatics. If these terms are synonymous to you, please indicate so.

3. If 'pragmatics' and 'social communication' are NOT synonymous, are there particular
    situations or instances of use where one term would be preferred over the other? If so,
    please elaborate.

4. Please provide any additional comments you have.

Appendix 2B

Round 2 Questionnaire

1. In Round 1, you and the other participants were asked to list the key concepts of social communication and pragmatics. Using keywords/key phrases to group responses together, several core concepts for each construct emerged. Generally, all participants indicated some overlap between social communication and pragmatics. However, the degree of overlap of the two terms was not consistent, ranging from complete synonymy to only a few overlapping or related concepts. In Figure 1, the key concepts that emerged from participants' responses are plotted on a Venn diagram.

   Please comment on the overlap of the concepts that emerged for social communication and for pragmatics. Which concepts would you plot differently on the Venn diagram? Why?

Figure 1. Results of Round 1 – key concepts of social communication and pragmatics

1. Purposeful transmission of a message
2. Social goal
3. Function of language/communication
4. Higher order linguistic skills (e.g., irony, sarcasm, figurative language)
5. Interpersonal and minimally dyadic
6. Modifying language considering contextual variables
7. Verbal
8. Non-verbal
    8a. Specific non-verbal skills – pitch, prosody, intonation, proxemics
9. Shared attention
10. Reciprocal
11. Different discourse genres (e.g., narrative, expository)
12. Awareness of partner's knowledge/perspective
13. Conversational management skills
    13a. Initiation of interaction

■ = identified with social communication

■ = identified with pragmatics

☐ = more strongly identified with one construct over the other

☐ = identified equally with both pragmatics and social communication

2. Several domains of knowledge, such as social cognitive, social emotional, language processing, and executive function, were listed as knowledge bases that both pragmatics and social communication draw upon. Which would you include or exclude as relevant to social communication? To pragmatics? Why?

3. The foundations of each construct also emerged as a theme. Generally, pragmatics was discussed in terms of its foundations in multiple theories of language use (e.g., Searle's speech act theory, Grice's theory of conversational implicature, etc.), whereas social

communication was modeled in terms of the components and processes that it draws upon (e.g., social cognition, language processing, executive function, etc.). Thus, some participants noted the distinction between the established *theoretical* groundings of pragmatics when compared to the existing *models*[2] of social communication. Comment on the veracity of the distinction that emerged between pragmatic *theory* and *models* of social communication. Does the way in which we organize our knowledge (both currently and historically) of these two constructs have implications for how we use the terms clinically and in research? How so?

4. Have I adequately captured your insights from Round 1? If not, please describe what is missing.

5. Any additional comments?

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[2] **Theory**: a coherent statement of propositions that explain a phenomenon by organizing known data and predicting future data.

  Model: a structural and symbolic representation of elements within a system (e.g., concepts and processes).

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Appendix 2C

Round 3 Questionnaire

The purpose of this study is to understand the *essential features of social communication* and

its *relation to pragmatics*. You, an expert panel, were asked:

In **Round 1**, to list the ***key concepts*** of social communication and pragmatics.

To summarize your **Round 1** responses:

- In addition to listing *features* such as non-verbal skills, conversational management

  skills, etc., panel members also included other *interacting knowledge/processing domains*

  (e.g., social cognition, executive function) that were fundamental to pragmatics and

  social communication.

- In listing these key elements, panel members referenced pragmatic theories and social

  communication models.

In our summary of these responses, we separated the *features* from the *knowledge/processing*

domains because the latter seemed to be broader terms; yet, we recognized that both types of

elements were considered fundamental or key.

- We plotted the features using a Venn diagram, in an attempt to succinctly summarize and

  present the panel's responses. The Venn diagram was not intended as a suggested model

  for pragmatics and social communication.

- Separately, we created a list of different knowledge domains that panel members had

  identified as fundamental to both social communication and pragmatics.

In **Round 2**, you were asked to comment on the following:

- How theories and models impact how we use the terms 'social communication' and 'pragmatics'

- The knowledge/processing domains identified as key concepts for each of social communication and pragmatics; and

- The Venn diagram that plots the key features of social communication and pragmatics.

To summarize the panel's **<u>Round 2</u>** responses:

- Panel members generally did not draw a strong distinction between theories and models; however, all agreed that both theories and models impact our clinical approaches and research questions.

- Panel members (largely but not entirely) agreed that the knowledge/processing domains key to social communication and to pragmatics were similar (see Table 1 for a list).

Table 1: Key knowledge/processing domains.

• Social cognition
• Receptive and expressive language skills/processing
• Executive function
• Social emotion regulation
• Social interaction
• Knowledge of the social function to be performed

- Many panel members agreed with the placement of key features within the summary Venn diagram as presented in the **Round 2** questionnaire. However, several cogent arguments were made to suggest **the addition and movement of features**. To incorporate those suggestions and to avoid the appearance of creating a model rather than a summary, we have created a table to represent the categorization of key features (see Table 2).

i. First, the **addition** of other features was suggested, with the following rationale:

    - If <u>initiation of interaction</u> is singled out, then other conversational management skills such as <u>maintenance of interaction</u> and <u>conversational repair</u> should also be specifically identified.

ii. Secondly, several arguments were offered for **moving features** to the conceptual area that social communication and pragmatics share, with the following rationales:

    - If pragmatics is defined as language use in context, and an utterance is defined in terms of its illocutionary and perlocutionary forces (i.e., the *speaker's intent* and the *effect the utterance has on the listener*), then it follows that "<u>Purposeful transmission of a message</u>" and "<u>Social goal</u>" should also be key to pragmatics, and not just social communication. Given this, it also follows that "<u>interpersonal and minimally dyadic</u>" should also be key to pragmatics, and not just social communication.

- The purpose of <u>metalinguistic skills</u> (e.g. sarcasm, irony) is to flout conversational expectations for a *social purpose* (e.g., to be sarcastic or ironic); as such, these skills must also be social communicative, and not just pragmatic.

iii.   Thirdly, the panel **did not agree** on the placement of "<u>Function of language/communication</u>". Some participants noted that although they could see pragmatics and social communication sharing all other features, this feature should remain solely pragmatic. Yet, a counter-argument to this point was made:

- "If social communication involves shared attention, reciprocal interaction, the use of language to tell a story (narrative) or explain a concept (expository), awareness of partner's knowledge/perspective (and therefore how to modify one's message to achieve a communicative purpose), and knowledge and use of conversational management skills, then it is implicit that language is being use to serve specific communicative functions."

Table 2: Representation of the key features of social communication and pragmatics, with Round 2 responses integrated.

Uniquely social communication	Uniquely pragmatic	Shared
	- <u>Different discourse genres (e.g., narrative, expository)</u>[B]	- <u>Purposeful transmission of a message</u>[SC]

- <u>Social goal</u>[SC]

- <u>Higher order linguistic skills (e.g., irony, sarcasm, figurative language)</u>[P]

- Interpersonal and minimally dyadic

- Modifying language considering contextual variables

- Verbal

- Non-verbal

  - Specific non-verbal skills – pitch, prosody, intonation, proxemics

- Shared attention

- Reciprocal

- Awareness of partner's knowledge/perspective

- Conversational management skills

  - Initiation of interaction

  - *Maintenance of interaction*

- *Repair/revision of*

  conversational breakdowns

Note: An underline denotes that the feature has changed location based on Round 2's responses. The superscripts denote from which position on the Venn diagram the feature moved. (SC=social communication; P=pragmatics; B=overlap of P&SC). Italicized items are suggested new additions.

QUESTION 1:

Please comment on Table 2. Considering your peers' rationales, do you agree or disagree with the revised placement of these features? Where might you place "<u>Function of language/communication</u>**"?**

As we reviewed the panel's **Round 2 responses**, we also revisited the **Round 1 responses**. An interesting trend emerged as we **integrated** the responses from both rounds.

- When asked about the key concepts of social communication and pragmatics, the panel was responding to questions with multiple levels of detail:
    a. By listing the key features of pragmatics and social communication (i.e., specific skills, such as initiation of interaction). These features, as represented in Table 2, could be considered "*minimal descriptive units*" that comprise social communication and pragmatics.

b. Among the key features, panel members also listed *knowledge/processing domains* (listed in Table 1), yet these terms appeared to be broader in nature than those listed on Table 2. They seem to entail many basic elements themselves, some or all of which may interact with the minimal descriptive units described on Table 2.

QUESTION 2:

In your view, when defining social communication/pragmatics, how best should the distinction between what we have called *minimal descriptive units* and *knowledge/processing domains* be characterized? If this is a useful distinction, why/how?

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c. The panel also identified larger 'integrated' units, which could be called "*events*" (e.g., resolving conflict; making friends), that are integral to everyday *social functioning* as key concepts. It appears that such *events* may involve several different *minimal units*.

- As one participant pointed out, "…if you are skilled at conflict resolution, you probably are skilled at many of the other skills listed…" (referring specifically to verbal and non-verbal skills, shared attention, reciprocity, and awareness of partner's knowledge/perspective).

It could be proposed that the *minimal descriptive units* in Table 1 and Table 2 come together in order to successfully engage in *events* such as conflict resolution.

- Further, participants suggested that the *features* and *domains* that are used for a particular event is developmentally sensitive. Specifically, participants acknowledged that different *minimal units* and *knowledge/processing domains* would be employed depending on the child's stage of development.
  - For example, a pre-linguistic infant engaging in joint attention will access different elements of Table 1 and Table 2 to engage socially than a preschooler would access when interacting with a classmate.

QUESTION 3:

Comment on the proposition made in (c.). If you agree, what conclusions do you draw pertaining to the relationship between social communication and pragmatics?

- A final theme that emerged through both rounds of questioning was the role of other influences on the evolving use of the terms 'social communication' and 'pragmatics'.
  - For example, some participants have suggested that the term "social communication" is more accessible than "pragmatics" to other health professionals, educators, and lay people.
  - Some participants speculated that the increased focus on populations with prominent social functioning difficulties, such as ASD, is another driving force behind the differential use of these terms.

QUESTION 4:

Please comment on the impact of such influences on our evolving use of the terms 'social

communication' and 'pragmatics'.

<u>QUESTION 5:</u>

Please provide any additional comments or questions.

Chapter 3

3 Social communication in the domain of social skills

3.1 Introduction

The ability of humans to use language in social interaction distinguishes us from other species (Tomasello & Vaish, 2012). Certainly, many other species communicate (e.g., dolphins whistle to warn their pods of danger); however, human communication is different from animal communication in that humans communicate specifically by *using language* for social purposes. Humans communicate not only to achieve our own goals, but also to achieve the goals of our community and to form and maintain the interpersonal relationships that create our social worlds (Tomasello & Vaish, 2012). The unique ability to use language appropriately in social interaction, what has come to be known as social communication, allows us to do so. When we use our social skill repertoire and our language appropriately in social interaction, we are judged to be socially competent (Gresham, 1986). *Both* social skills and social communication contribute to social competence. However, the boundaries between social skills and social communication are not clear, despite social communication being unique to humans as a species.

In definitions of children's social communication, it is described it as the intersection of language use and social skills during peer interaction (Brinton & Fujiki, 2005; Gerber, Brice, Capone, Fujiki, & Timler, 2012; Timler, Olswang, & Coggins, 2005). Social communication requires the language user to employ core language skills (e.g., syntax, morphology) and social cognitive functions (e.g., Theory of Mind, knowledge of social scripts) while considering the social context and the needs of their listener to achieve social goals, such as initiating peer

interactions and making friends. As discussed above, humans have the unique ability to achieve such social goals through the use of verbal and/or non-verbal forms of communication.

When using verbal means of communication, language users create speech acts (Austin, 1975; Searle, 1976). Speech acts express the intention of the speaker's utterance (illocutionary force) and, as such, are meant to have a particular effect on the listener (perlocutionary force). For example, a speaker may say "It's cold in here" with the intention of having the listener close the window (illocutionary force). The effect of this utterance on the listener – i.e., that the listener closes the window – is the perlocutionary force. Speech acts are often identified by the presence of an explicit performative verb, whereby when a speaker utters the verb, s/he is also *doing* something by saying something, i.e., the act of communication achieves a social goal (Crystal, 1985). Performatives can be categorized as either explicit or implicit (Austin, 1975). Implicit performatives are utterances whereby an action is performed in uttering the sentence without the presence of a performative verb. For example, in the utterance 'Go to your room', the speaker is making a command but without explicitly using the verb 'command', as in "I command you to go to your room". Gallagher noted the importance of speech acts to children's social interaction and social needs, observing that "[c]hildren use language to meet many interpersonal needs including asserting, requesting, negotiating, clarifying, directing, and objecting" (1999, p. 8).

The response of the listener, as the recipient of the speaker's performative speech act, is equally important to effective social communication. In using a speech act, the speaker anticipates a certain effect on the listener. There are social expectations that govern this effect, and an effective listener will be aware of the socially appropriate response as s/he responds to the speech act. Children develop an understanding of what is socially appropriate via language use

and by engaging in social interaction (Brinton & Fujiki, 2005; Rice, 1993; Schieffelin & Ochs, 1986). As such, explicit and implicit speech acts and the appropriate response to these acts, are inherent to social communication and moreover, are important for achieving social goals.

For children, the interdependence between language and social skills is particularly important as they learn to become "a competent member of society" (Schieffelin & Ochs, 1986, p. 168). "The language [children] use supports their social functioning, and the social interaction supports their language development" (Brinton & Fujiki, 2005, p. 158). Typically developing children engage in effective social communication with little difficulty; however, social communication can be a challenging task for children with language impairment (LI) or other developmental disorders for which social deficits are characteristic (e.g., Autism Spectrum Disorder (ASD); Attention-Deficit/Hyperactivity Disorder (ADHD)) (Brinton & Fujiki, 1993; Rice, 1993). Rice (1993) describes the impact of the interrelatedness of language and social skills on children with LI. She observes that children with LI can become caught in a "negative social spiral", wherein their language deficits prevent effective social interaction, and a lack of meaningful social interaction limits their exposure to language and its use in various social contexts. Indeed, children with LI, when compared to their typically developing peers may have fewer friends, have friendships of poor quality, feel lower self-esteem, and experience impeded success at school (Brinton, Fujiki, & Higbee, 1998; Fujiki, Brinton, Hart, & Fitzgerald, 1999; Gertner, Rice, & Hadley, 1994; Jerome, Fujiki, Brinton, & James, 2002; Rice, 1993). These negative social consequences are also experienced by children with ASD, ADHD, and other developmental disorders (Botting & Conti-Ramsden, 2003; Castro & Pinto, 2013; Coggins, Timler, & Olswang, 2007; Ketelaars, Cuperus, Jansonius, & Verhoeven, 2010; Kjellmer & Olswang, 2013; Nixon, 2001; Norbury, 2014; Staikova et al., 2005).

Thus, empirical studies highlight that social skills *and* social communication are interrelated in their roles in social competence. However, our understanding of how social communication and social skills are distinct remains obscured at both the conceptual level and in clinical application. Conceptually, definitions of social communication and social skills are not distinct, with both referring to the effective execution of a skill in social interaction (Coggins et al., 2007; Rose-Krasnor, 1997). Conceptual models of social competence focus on social skills but do not necessarily recognize a unique contribution of language, and hence do not recognize social communication. As such, social communication in relation to social skill is generally not well defined, which also impedes our clinical understanding of *deficits* in social skills and social communication. Thus, it is the purpose of this paper to investigate the role of social communication in the domain of social skill.

Conceptual issues

As previously discussed, social communication plays a role in more general social skills and as such, it is also contributor to social competence. Indeed, several models of social competence recognize social communication as a component, albeit with varying levels of detail - either as indistinct from social skills (Caldarella & Merrell, 1997; Crick & Dodge, 1994) or with limited recognition of it (Beauchamp & Anderson, 2010; Guralnick, 1992).

Crick and Dodge (1994) propose a cyclical model of social information processing, throughout which children access a database of memory, acquired rules, social schemas, social knowledge. In this model, social communication is an implicit component. Crick and Dodge do not specifically address how social communication fits into this model; instead, it is assumed that social communication would be processed in the same way as other social skills. That is, the model does not distinctly recognize social communication. However, Crick and Dodge's model

has been successfully applied in the conceptualization of social communication (e.g., Coggins & Olswang, 2001; Timler, 2008). Yet, applying this model to either social skills, as Crick and Dodge have done, or to social communication skills, as Coggins and Olswang (2008) and Timler (2008) have done, does not clearly capture the interrelatedness of these two constructs.

Caldarella and Merrell (1997) conducted a large-scale synthesis of several factor analyses pertaining to the social skills of children and adolescents. In the resulting taxonomy, five dimensions of social skills were identified: Peer Relations, Academic, Self-Management, Compliance, and Assertion Skills. Notably, communication is not among them. Instead, the items in the taxonomy are described as subsuming specific skills such as independence, self-care, and communication (Merrell, 2003); and as such, items covering communication are represented as one of a variety of skills contributing to major dimensions of social skill. Indeed, many of the specific behaviours identified within each major dimension are social communication skills, and several of the other behaviours use social communication as a scaffold (Redmond, 2004). Those that are social communication skills can be identified by the presence of a speech act. For example, the Peer Relations dimension includes social behaviours such as "Compliments/praises/applauds peers" and "Invites peers to play/interact". The Assertion dimension includes items such as "Initiates conversations with others" and "Expresses feelings when wronged". Each of these items involves the appropriate use of language in social situations, and several items feature performative verbs (e.g., compliments, invites). Despite this, the unique contribution of social communication is not overtly recognized in Caldarella and Merrell's taxonomy of social skills.

Beauchamp and Anderson (2010) move closer toward an overt recognition of social communication in their 'socio-cognitive integration of abilities' ('SOCIAL') model, a

biopsychosocial model of social function by including a communication component. The SOCIAL model focuses on the neural (biological) underpinnings of social function while also incorporating cognition (psychological) and the internal and external environmental (social) factors that impact social function. Communication is overtly identified within the 'cognitive functions' component along with attention, executive function, and socioemotional skills. These cognitive functions are moderated by internal (e.g., personality, physical attributes) and external factors (e.g., family environment, cultural upbringing, socioeconomic status) to contribute to social skills/function. Communication is represented as another cognitive mechanism that is processed in the same way as social-emotional skills. Thus, though Beauchamp and Anderson include a communication component in their model, the contribution of communication to social competence is not uniquely recognized.

The most overt identification of social communication in the domain of social skill can be found in Guralnick's (1992) hierarchal model of peer-related social competence. The Social/Communicative Skills component, which includes social skills requiring the integration of language, cognition, affect, and motor abilities, is the first of two major levels in his model. The second major level of Guralnick's model is the Social Task component, which involves the use of Social/Communicative skills with socio-cognitive skills and emotion regulation to solve social tasks such as entering peer interactions. When social tasks are successfully solved, social competence has been achieved. In other words, Guralnick's model conceptualizes social competence as a composite 'event' that is comprised of smaller skills and draws from multiple bases of knowledge, a notion that was also noted as characteristic of social communication in the results of Study 1. Furthermore, Guralnick notes that research on the impact of Social/Communicative skills on social competence varies depending on the lens of the

researcher. That is, those interested in communication focus on language and speech acts, while those interested in social development focus more on a how a child uses a peer as a resource (Guralnick, 1992). Nevertheless, Guralnick (1992) recognizes contribution of language to the social/communicative component. Furthermore, he recognizes the contribution of speech acts and other social skills to achieving social tasks, although he does not distinguish communication from social skills.

Thus, models of social competence certainly include (or minimally, subsume) social communication skills. However, these models at best make a limited distinction between social communication and social skills, an issue that extends from the conceptual level into clinical assessment and intervention of social skills.

Clinical issues

The overlap of language and social skills is well documented in clinical populations. Children with LI, ASD, ADHD, and/or other developmental disorders also experience social deficits. However, the exact nature of the overlap between social communication impairment and social skills deficits is not well-understood, and as such accurate classification, assessment and intervention is challenging for children with LI and other socioemotional disorders (Brinton & Fujiki, 1993).

For example, in the most recent version of the *Diagnostic and Statistic Manual of Mental Disorders* (*DSM-5*) (American Psychiatric Association, 2013a), Social (Pragmatic) Communication Disorder (SPCD) has been added as a way to distinguish children with social communication problems from those with other social deficits (American Psychiatric Association, 2013b). However, criticisms have been made pertaining to the lack of clarity between the diagnostic criteria for SPCD and criteria for other neurodevelopmental disorders that

are, at least in part, characterized by difficulties with social skills (Norbury, 2014; Tager-Flusberg, 2013). Indeed, a recent study has provided empirical evidence to support these concerns. Ash and Redmond (2014) found a large overlap in membership between SPCD and other diagnostic categories such as ASD and ADHD. That is, several children in their study who were classified as having SPCD were also classified as having ADHD, behavioural/emotional problems, and/or LI. Thus, the criteria used to diagnose SPCD did not clearly differentiate children with social communication difficulties from other clinical groups with broader social deficits. Thus, this current diagnostic category does not clarify the boundaries between social communication and social skills.

Similarly, social skills assessments do not clearly differentiate between social communication and social skill. Redmond (2002) examined five commonly used behavioural rating scales for socioemotional disorders for their overlap with language-related items. Redmond (2002) found that several of the items on these five behavioral rating scales measured language skills. For example, "Tells jokes and riddles" or "Does not follow instructions" are items from two different socioemotional assessments, and both social skills entail substantial language skills. Children with LI will score poorly on such items, and thus may be over-identified as having socioemotional difficulties. Speech-Language Pathologists (SLPs) are not often involved in the assessment of a potential socioemotional disorder (Redmond, 2002) and other professionals may miss the implied connection, despite the knowledge that language and social behaviour are interrelated.

Law, Plunkett, and Stringer (2011) acknowledge the overlap of language and social skills in their systematic review of language and social skills interventions. Law et al. (2011) reviewed 19 studies that examined intervention techniques for children with LI and social, emotional, and

behavior difficulties. They found communication interventions to be beneficial for children with socio-emotional difficulties, despite the heterogeneity of the children who participated and wide variety of outcome measures that were utilized in these studies. Furthermore, these studies were all appraised as exploratory, indicating that more research is necessary before a link between language and social-behavioral interventions can be established. More recent studies investigating the relationship between language and social behaviour have also shown varied results in terms of the language and social needs of children with both language and social deficits (e.g., Redmond, Ash, & Hogan, 2015). Thus, the results of these studies do not bring to light whether and how language and social skills are distinguishable from one another. Indeed, Law et al. (2011) note the overlap of language and social skills, and emphasize that "…[t]he potential overlap between speech/language/communication needs and social/emotional/behavioural difficulties needs to be widely recognized by practitioners, and the implications for practice of this overlap explored more fully" (p. 20).

Objective

Both social communication and social skills contribute to social competence. However, whether the contribution from these two constructs is identical, complementary, or unique is unclear. Current conceptual models, which typically do not make a distinction between communication and social skills, do not clarify the contribution of language and social skills to social competence. This issue carries into the classification and assessment of children with social communication disorders, wherein current classification tools and assessments do not clearly distinguish children with social communication deficits from those with other social difficulties (e.g., ASD, ADHD). Studies vary when reporting social communication strengths and needs of clinical groups characterized by difficulties of social competence. This is problematic

for the identification, assessment, and treatment of children with social communication disorders, particularly for defining the scope of practice of SLPs and other professionals. Clarifying the relationship between the uniquely human phenomena of social communication and more general social skills may help to better conceptualize social communication. In doing so, the classification, assessment, and treatment of children with social communication disorders can be better informed. Thus, the objective of this study is to identify and characterize social skills for their representativeness of social communication.

3.2 Method

3.2.1 Participants

English-speaking SLPs with experience working in the area of paediatric social communication disorders were recruited to judge social skills for their representativeness of social communication using an electronic visual analog scale. This study was approved by the Western University Research Ethics Board. Participants were initially recruited in two ways: in person by either of the authors or via a message board posting on the online discussion forums of provincial, national, and international professional associations for SLPs. Participants accessed a brief description of the study and a live web link to the Letter of Information and the survey, either via email for those recruited in person or by viewing the summary via the online discussion forum. A "snowball" method served as a secondary means of recruitment; that is, additional participants were recruited by having received the study information from colleagues. A total of 91 participant survey responses were received. However, 30 surveys were only partially completed, and thus were excluded from analyses. Therefore, a total of 61 SLPs, all of whom self-identified as having experience treating social communication disorders, participated

in this online survey study. A description of the participant demographics can be found in

Figures 3.1 and 3.2.

Figure 3.1. Participants' country of practice (N = 61)
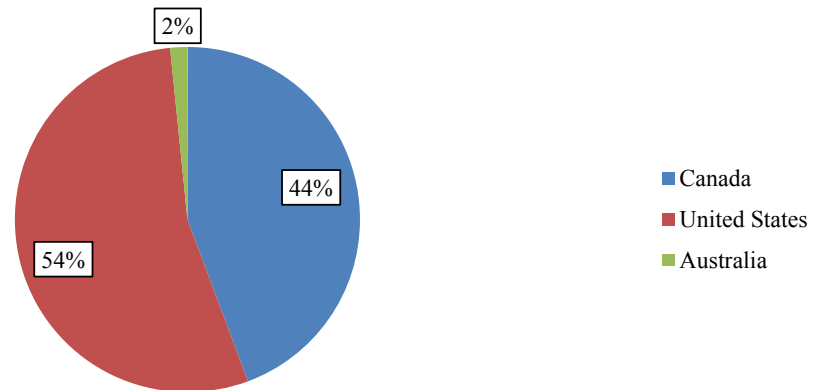
Figure 3.2. Participants' years experience (N = 61)
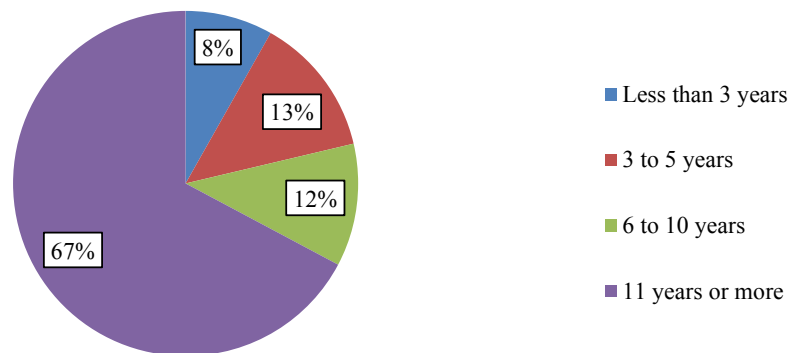
3.2.2   Materials

Questionnaire

An online questionnaire was created using web-based survey software (SurveyGizmo.com). The questionnaire was comprised of 56 items from the Social Skills scale of the *Preschool and Kindergarten Behavior Scales* (*PKBS*) (Merrell, 2003) and the Social Competence scale of the *Home and Community Social Behavior Scales* (*HCSBS*) (Merrell & Caldarella, 2002). The *PKBS* and *HCSBS* are both norm-referenced, standardized checklists designed to identify positive social skills and problem behaviours of children aged 3 to 6 and of school-age children, respectively. The *PKBS* and *HCSBS* each include two subscales: prosocial skills and problem behaviours; however, behaviours from the prosocial skills scale were the focus of this study. Both tools were developed from a taxonomy of social behaviors, which resulted from a large-scale factor analysis of social skills in children and adolescents (Caldarella & Merrell, 1997). Additionally, both of these parent- and teacher-report tools were designed to be developmentally sensitive to their designated age groups (Merrell & Caldarella, 2002; Merrell, 2003). Thus, these two tools share a conceptual basis and are especially appropriate for capturing the positive social behaviors that span these two developmental periods.

Further, both tools make the distinction between adult- and peer-related social behaviors in children, a distinction that is well supported by the literature (e.g., Brown, Odom, & Conroy, 2001; Caldarella & Merrell, 1997; Fujiki, Brinton, Mccleave, Anderson, & Chamberlain, 2013; Fujiki & Brinton, 2009; O'Neill, n.d.; Timler, Olswang, & Coggins, 2005). Adult-related behaviours are those that pertain to meeting expectations as imposed by parents, teachers, or other adults (e.g., completing chores without being reminded, following instructions from adults). Peer-related behaviours are those that pertain to appropriate interactions with peers and

contributing to peer groups in a positive way (e.g., having good leadership skills, making friends easily, comforting other children who are upset). Both are necessary for social competence in a preschool or school environment.

There were some identical or near identical items across the *PKBS* and the *HCSBS*, e.g., items with the same underlying meaningful concepts. These items are only represented once in the questionnaire (see Appendix 3A for a list of duplicate items). The final questionnaire included a list of 56 unique social behaviours. Of the 56 items, 23 were adult-related social behaviours and 33 were peer-related social behaviours (See Appendix 3B) but they were not identified as such for participants. Each item in this questionnaire was presented above a visual analog scale, which participants used to rate each item.

Scale

A visual analog scale was selected as the measurement tool for this study. A visual analog scale (as opposed to scales with preset intervals) is ideal for measuring constructs that exist on a continuum and thus, are not easily measured directly. (Gift, 1989; Lee & Kieckhefer, 1989). A visual analog scale is a 100 mm line anchored at each end by terms representing the extremes of the range of possibilities of the feature under investigation (Gift, 1989; Lee & Kieckhefer, 1989). The literature approaches social communication and social skills with varying degrees of overlap, and as such a visual analog scale was suitable for measuring how these two constructs are related. For the purposes of this study, this scale was converted to an electronic format, which has been shown to demonstrate comparable psychometric properties to a paper visual analog scale (Cook et al., 2004; Jamison et al., 2002; Sindhu, Shechtman, & Tuckey, n.d.). Each scale in this study was anchored at the leftmost point with "Not at all representative of

social communication" and at the rightmost point with "Fully representative of social communication".

3.2.3 Procedure

After following the link to the survey and reading the Letter of Information, participants were provided with instructions on how to rate using a visual analog scale. Three sample items, including explanations to support sample ratings, were provided to ensure participants understood the task (Appendix 3C). After participants had familiarized themselves with using the visual analog scale, they proceeded to the questionnaire.

Figure 3.3. Sample items from the questionnaire.

The electronic scale was 100 units in length and included a slider (seen at the leftmost point of the scale in item 1). Participants indicated their rating by clicking a point along the continuum. Once the rating had been made, the slider automatically denoted the point as selected by the participant and the line turned from grey to black, as is shown in item 2.

A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature.

Indicate how representative each item is of social communication by clicking a point along the continuum.

1. Is cooperative.

Not at all representative of social communication		Fully representative of social communication

2. Plays with several different children.

Not at all representative of social communication		Fully representative of social communication

As is shown in Figure 3.3, participants were given the following definition of social communication: "A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature" at the top of each page of the questionnaire. Then, participants were provided with the items and scales. Participants were asked to indicate how representative each social skill was of social communication by clicking a point along the continuum that captured their subjective rating of the item in relation to the anchoring terms.

3.2.4   Scoring

The leftmost end of the line was assigned a value of 1 and the rightmost point a value of 100. The distance between the leftmost end of the line and the point selected by the participant was calculated by the survey software, assigning a rating between 1 and 100 for each item for each participant. Values closer to the rightmost point (100) were considered to be most representative of social communication (SC), while values closer to the leftmost point (1) were considered to be least representative of social communication. Thus, for the purposes of the analysis and discussion presented here, these items were labeled as representative of social skills (SK). A score of 50, as the numeric midpoint of the 100-point scale, represents the point at which an item conceptually is neither representative of one anchor nor of the other because the visual analog scale used polar terms as anchors. Thus, items with scores near the midpoint of the scale had ratings that were not high enough to be clearly distinguished as representative of SC, nor were the ratings low enough to clearly distinguish these items as not representative of SC.

3.2.5   Analysis

Three levels of analysis were conducted. The first level of analysis was intended to investigate the reliability of participants' responses and provide a general description of

participants' ratings. The second level was conducted to identify and characterize SC within the realm of SK. The third level of analysis was to investigate distinctions uncovered in previous levels of analyses.

The first level of analyses was preliminary, investigating the reliability of participants' responses and providing a description of the entire response pool. The reliability of participants' responses was examined by investigating participants' overall use of the visual analog scale, which is key to measuring with such a scale. Responses from five participants were excluded from further analyses through this preliminary analysis process. One of these participants was excluded because, upon detailed investigation, it became clear that s/he had not followed instructions. Four participants were excluded because their ratings were statistical outliers[3] for at least 6 (10%) of the items. Thus, responses from 56 participants were included in any analyses going forward.

After excluding these responses, Cronbach's alpha was calculated as a measure of inter-rater reliability of participants' ratings. Next, descriptive statistics and grouped cumulative frequencies were calculated for each item in order to describe the distribution of each item's ratings. This analysis revealed that the distribution of ratings for most items was non-normal. Since the purpose of this study was to capture SLPs' understanding of social communication within social skills, the skewing of the data provided valuable information. Means and standard deviations are measures that can obscure extreme scores, whereas median scores are not impacted by extreme values. As such, the median for each item was used in any further analyses; however, means and standard deviations are reported in order to provide a full description of the data. Descriptive statistics and independent sample t-tests were then conducted to describe and

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[3] Using a boxplot, values that were 1.5 or more times the interquartile range were identified as outliers.

compare the ratings of adult vs. peer social behaviours. The adult vs. peer distinction is a result from the factor analyses on which the *PKBS* and *HCSBS* items are based (Caldarella & Merrell, 1997). Furthermore, this distinction is made in definitions and models of social communication, and thus, we hypothesized that it may be an important distinction to understanding the relationship between SC and SK.

The second level of analyses involved the identification and characterization of items that comprised each distribution pattern, specifically of those that were rated as representative of SC or not. First, items were described according to their distribution patterns. One-sample t-tests were also conducted to explore if differences existed between each pattern and the midpoint of the scale, which represents the conceptual boundary between SC and SK. Next, items within each of the three patterns were characterized by examining the distribution of peer- and adult-related social behaviours within the groupings. A two-way contingency table analysis and follow-up tests were conducted to investigate the potential relationship between the type of social behaviour (peer- vs. adult-related) and the distribution patterns.

The third level of analysis examined the presence of speech acts in the 56 items. Because speech acts are a verbal means for achieving a social goal, it follows that they should be identifiable among items rated as representative of SC. As such, items that included speech acts were identified. A two-way contingency table analysis and follow-up tests were conducted to investigate a potential relationship between the presence of a speech act and the pattern of distribution. Items that included speech acts were further characterized by specifying the type of speech act they contained, i.e., an expressive speech act or a response to a speech act. Lastly, an independent-samples t-test investigated if participants' ratings of expressive speech acts were different than their ratings of responses to speech acts.

3.3 Results

3.3.1 Preliminary analyses results

Ratings from 56 participants were analyzed for each of the 56 items. An examination of measures of central tendency for the entire data set revealed that the mean rating across the pool of responses was 64.5 ($SD = 31.9$), with a median rating of 74 and ratings ranging from 1 to 100. Thus, participants' ratings spanned the entire scale but overall were skewed towards the rightmost anchor "Fully representative of social communication", as can be seen in Figure 3.4. A Cronbach's α of .934 indicated strong consistency amongst the 56 participants' ratings.

Next, grouped cumulative frequencies were calculated for each item in order to explore the distribution of the data. Results showed that, overwhelmingly, the distribution of ratings for each item was non-normal, with 41 items (73%) having distributions that were skewed towards either the leftmost or the rightmost anchor. Of these 41 items, 9 items (16%) had ratings distributions skewed towards the leftmost anchor, "Not at all representative of social communication". Thirty-two items (57%) had distributions skewed towards the rightmost anchor, "Fully representative of social communication". The remaining 15 items (27%) had normal distributions, with medians and means falling near the midpoint of the scale (i.e., 50).

Figure 3.4. Distribution of median ratings.
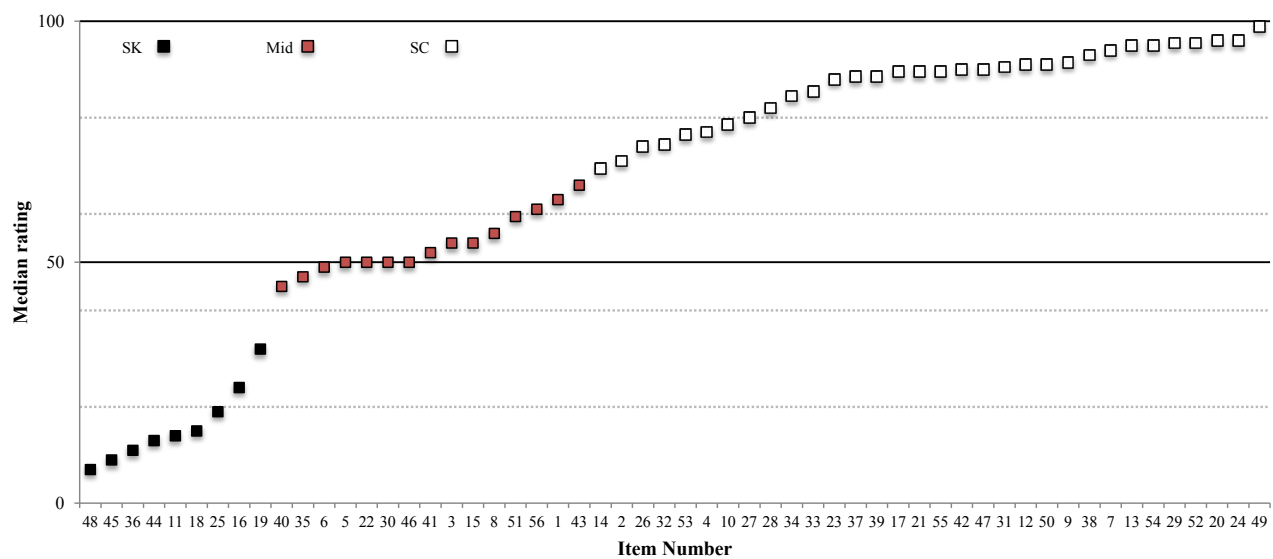
Note: Item descriptions can be found in Appendix 3C

Table 3.1. Description of ratings of adult- and peer-related social skills.

	M (SD)	Median	Range of Median Ratings
Adult-related (n = 23)	51.0 (32.8)	53	7-92
Peer-related (n = 33)	73.9 (27.6)	84	14-99

As the final preliminary analysis, ratings of peer- vs. adult-related social behaviours were investigated, as can be found in Table 3.1. An independent-sample t-test comparing the median ratings of adult- and peer-related items determined that adult-related social behaviours were rated as less representative of SC than peer-related items ($t(54) = -4.004$, $p < .001$, $d = -1.09$).

Thus, preliminary analyses indicated strong inter-rater reliability from participants. Furthermore, participants' ratings spanned the entire scale, and three patterns of distribution were identified. Results of preliminary analyses also provided evidence for the importance of the distinction between peer- and adult-related social skills. Next, we sought to identify items rated as representative of SC and describe the behaviours captured by these items.

3.3.2   Identification and characterization of SC behaviours

The next stage of analysis was intended to identify and characterize behaviours rated as representative of SC. In doing so, this stage of analysis sought to provide descriptions of those items representative of SC. Preliminary analyses had shown three distribution patterns and as such, items were grouped according to the distribution of their ratings. Items with left-skewed distributions were identified as the social skills that were the least representative of SC, and thus are described as representative of SK for the purposes of this discussion. Items with distributions skewed towards the rightmost "Fully representative of SC" anchor were identified as

representative of SC. Items with normal distributions and median scores that centered near the
midpoint between the two anchors were identified as neither fully representative of SC or nor as
representative of SK. Henceforth, items with this distribution pattern are called 'mid' items.

Table 3.2. Description of ratings of SK, mid, and SC items

	Median	Range of Median Ratings	*M* (SD)	Cronbach's α
SK (n = 9)	14	7-32	24.2 (24.7)	.866
Mid (n = 15)	52	45-66	51.1 (27.9)	.793
SC (n = 32)	89	70-99	82.1 (19.9)	.926

Table 3.2 provides a description of the overall ratings for the three patterns. Of the 56
items, 9 (16%) were rated as representative of SK, 15 (27%) were identified as 'mid', and 32
(57%) were rated as representative of SC. Internal consistency, as measured by Cronbach's α,
was strong for all three patterns, with the mid pattern having slightly lower inter-rater
consistency. Thus, within the broader domain of SK, participants considered more than half of
the survey items to be representative of SC. Only a small portion of items were rated as
representative of SK, and more than a quarter of the items were not clearly distinguishable as
representative of SC or not.

Next, one-sample t-tests were conducted to test if the medians of the patterns each
differed significantly from the midpoint of the scale (50) to determine if the patterns were
conceptually distinct from the boundary between SC and SK. The alpha value was corrected to
.01 using a Bonferroni correction to control for Type 1 error. The median scores of items
representative of SK were significantly lower than the midpoint of the scale (t(9) = -12.831, p <
.001, *d* = -4.277). The median scores of items representative of SC were significantly higher than

the midpoint (t(32) = 26.038, p < .001, d = 4.603). The median scores of the mid items did not

differ significantly from the midpoint of the scale (t(15) = 2.241, p = .042, d = .579). Large effect

sizes were found when both the SK and SC patterns were compared to the midpoint. These

results indicate that for participants the SC items and the SK items were conceptually distinct

from the midpoint of the scale, i.e., the conceptual boundary between SC and SK. However, the

mid items were not conceptually distinct from the boundary of SC and SK.

Having described the patterns of response, the next step of analysis sought to characterize

these items within these patterns in order to better understand the defining features of SC, i.e.,

what makes a behavior recognizably social communication. Thirty-two items were rated as

representative of SC. These items included behaviours involved in positive peer interactions,

such as achieving positive peer status (e.g., "Has good leadership skills", "Is accepted and liked

by other children") and empathy (e.g., "Understands problems and needs of peers", "Shows

affection for other children"). Nine items were rated as representative of SK. Generally, these

items involved independence in adult-imposed activities or tasks (e.g., "Works or plays

independently", "Produces work of acceptable quality for his/her ability level"). Fifteen items

within the mid pattern were identified. In general, these items were behaviours related to self-

management (e.g., "Shows self-control"), and compliance with adult-imposed rules and

expectations (e.g., "Follows rules", "Accepts decisions made by adults"). Descriptive statistics

for items in each of the distribution patterns can be found in Tables 3.3, 3.4, and 3.5.

Table 3.3. Descriptive statistics for SC items

Item	Type	Median	Range	*M* (SD)
Responds appropriately when corrected	Adult	79	15-100	77.3 (19.1)
Shares toys and other belongings	Adult	80	1-100	75.3 (21.9)
Asks appropriately for clarification of instructions	Adult	90	11-100	82.2 (20.7)
Asks for help in an appropriate manner	Adult	90	25-100	84.1 (15.9)
Takes turns with toys and other objects	Adult	91	19-100	84.6 (17.7)
Gives in or compromises with peers when appropriate	Adult	92	49-100	87.6 (12.3)
Is accepted and liked by other children	Peer	70	1-100	66.9 (24.0)
Plays with several different children	Peer	71	10-100	67.2 (23.4)
Seeks comfort from an adult when hurt	Peer	74	1-100	67.4 (25.9)
Is confident in social situations	Peer	75	1-100	71.0 (25.6)
Has good leadership skills	Peer	77	1-100	68.4 (28.7)
Is invited by other children to play	Peer	77	6-100	72.0 (20.4)
Stands up for his or her rights	Peer	82	1-100	76.2 (23.0)
Shows affection for other children	Peer	85	1-100	79.7 (18.8)
Is sensitive to adult problems ("Are you sad?")	Peer	86	1-100	82.0 (18.4)
Stands up for other children's rights ("That's his!")	Peer	88	30-100	84.3 (15.9)
Understands problems and needs of peers	Peer	89	34-100	83.2 (16.1)
Offers to help peers when needed	Peer	89	51-100	85.8 (13.1)
Asks for help from adults when needed	Peer	90	20-100	82.5 (18.9)
Makes friends easily	Peer	90	13-100	82.1 (19.3)

Is assertive in an appropriate way when he/she needs to be	Peer	90	34-100	83.8	(17.3)
Is sensitive to the feelings of others	Peer	91	1-100	82.5	(21.8)
Smiles and laughs with other children	Peer	91	30-100	85.0	(15.5)
Participates effectively in family or group activities	Peer	93	43-100	86.5	(15.4)
Invites other children to play	Peer	94	43-100	87.4	(14.5)
Notices and compliments accomplishments of others	Peer	95	47-100	89.0	(13.9)
Tries to understand another child's behavior ("Why are you crying?")	Peer	95	58-100	91.7	(9.4)
Apologizes for accidental behavior that may upset others	Peer	96	39-100	89.4	(13.2)
Enters appropriately into ongoing activities with peers	Peer	96	48-100	91.2	(11.6)
Comforts other children who are upset	Peer	96	60-100	91.9	(10.4)
Participates in family or classroom discussions	Peer	96	69-100	93.0	(7.7)
Is good at initiating or joining conversations with peers	Peer	99	36-100	95.8	(9.4)

Table 3.4. Descriptive statistics for SK items

Item	Type	Median	Range	M (SD)
Produces work of acceptable quality for his/her ability level	Adult	7	1-96	17.6 (25.3)
Completes chores or other assigned tasks on time	Adult	9	1-93	18.2 (21.9)
Completes chores without being reminded	Adult	11	1-79	20.2 (22.1)
Completes chores or other assigned tasks independently	Adult	13	1-100	23.1 (25.3)
Uses free time in an acceptable way	Adult	15	1-95	23.5 (22.8)
Cleans up his or her messes when asked	Adult	19	1-94	28.7 (24.4)
Works or plays independently	Peer	14	1-78	21.7 (21.1)
Attempts new tasks before asking for help	Peer	24	1-100	30.0 (26.8)
Is able to separate from parent without extreme distress	Peer	32	1-99	34.5 (26.3)

Table 3.5. Descriptive statistics for mid items

Item	Type	Med	Range	M (SD)
Remains calm when problems arise	Adult	45	1-92	41.5 (26.0)
Makes appropriate transitions between different activities	Adult	47	1-100	40.3 (27.1)
Behaves appropriately at school	Adult	50	1-94	47.0 (28.3)
Sits and listens when stories are being read	Adult	50	1-100	48.6 (29.0)

Accepts decisions made by adults	Adult	50	1-100	45.2 (24.8)
Listens to and carries out directions from parents or supervisors	Adult	52	1-100	52.0 (26.9)
Shows self-control	Adult	54	1-100	49.4 (29.2)
Follows instructions from adults	Adult	54	1-100	56.6 (25.8)
Follows rules	Adult	56	1-100	54.3 (23.1)
Controls temper when angry	Adult	60	1-100	55.3 (29.5)
Is cooperative	Adult	63	1-100	60.7 (25.7)
Has skills or abilities that are admired by peers	Peer	49	1-97	45.7 (26.6)
Adapts well to different environments	Peer	50	1-99	50.1 (25.9)
Is "looked up to" or respected by peers	Peer	61	1-100	58.4 (29.8)
Is accepting of peers	Peer	66	1-100	61.9 (28.3)

Figure 3.5. Proportion of adult- and peer-related items identified as representative of SK, mid, and SC.
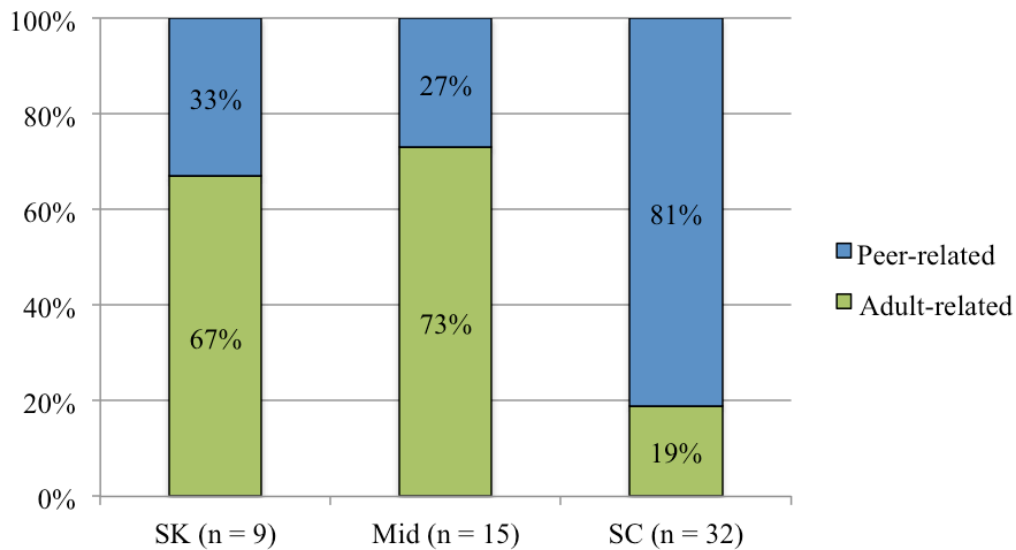
Next, the association between the type of behaviour (adult vs. peer) and the distribution pattern (either SK, mid, or SC) was investigated. The proportion of adult- and peer-related items with distributions patterns of either SK, mid, or SC is shown in Figure 3.5. The majority of the SC items were peer-related behaviours, while the majority of both the SK and mid groups were adult-related.

A two-way contingency table analysis (type of behavior x distribution pattern) test was conducted to test the association of peer- vs. adult-related social behaviours with the SK, mid, or SK patterns. This association was found to be statistically significant (χ^2 (2, N =56) = 16.097, *p* < .01). The strength of the relationship was .526 as indexed by Cramer's V, indicating a moderate relationship between the type of behavior (adult- vs. peer-related) and the distribution pattern. Follow-up pairwise comparisons were conducted to evaluate the difference among these proportions. The alpha value was corrected to .01 using a Bonferroni correction to control for Type 1 error. Significant differences existed between the proportions of adult- and peer-related items in the SC pattern when compared to both the SK (χ^2 = 7.791, p < .01, Cramer's V = .436) and mid patterns (χ^2 = 13.179, p < .001, Cramer's V = .530) That is, the probability of being a peer-related social behaviour was higher if the skill was rated as representative of SC.

3.3.3   Presence of speech acts

Each of the 56 items was categorized to investigate the occurrence of speech acts, as key components of social communication, in the domain of social skill. Thus, all items were analyzed for the inclusion of a speech act and the response to speech acts using Austin (1975) and Crystal's (1985) definitions (see section 3.1). Items were categorized as either involving a speech act (expressive or response to speech acts) or as not clearly involving speech acts. Two

independent raters (K.I. and E.S.D.) completed this task. Inter-rater agreement was 82.6%.

Disagreements were resolved via discussion; thus 100% agreement was achieved.

Of the 56 items, 23 (41.1%) were identified as involving a speech act. The proportion of speech acts identified within each distribution pattern can be seen in Figure 3.6. Thirty-three (58.9%) items did not involve speech acts. The items in the SK pattern did not include any speech acts. One third of the mid items and more than half of the SC items included speech acts.

Figure 3.6. Distribution of speech acts in SK, mid, and SC patterns.
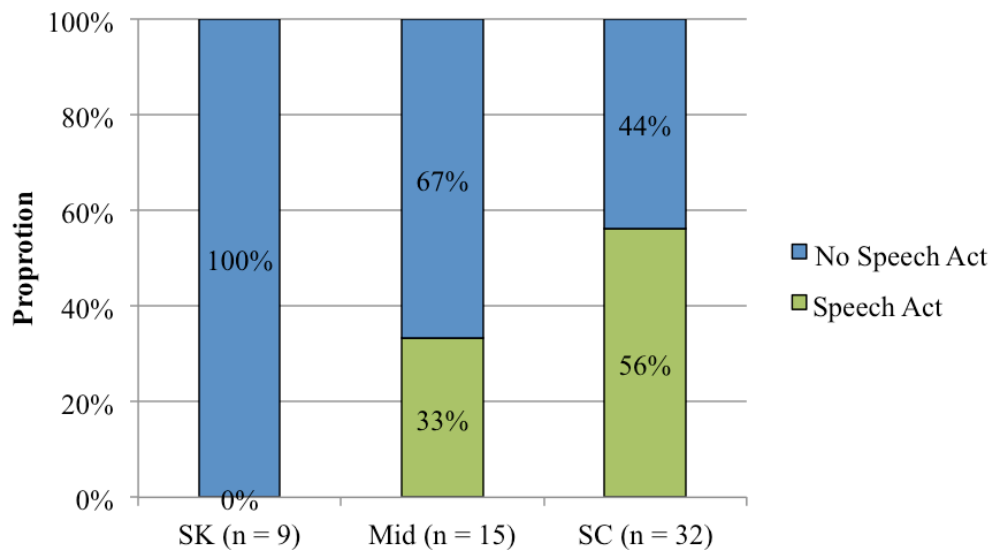
A two-way contingency table analysis (speech act x distribution pattern) test was conducted to test the association of the presence of a speech act and the distribution pattern, the proportions of which seen in Figure 3.6. This association was found to be statistically significant (χ^2 (2, N =56) = 12.882, $p < .01$). The strength of the relationship was .416 as indexed by Cramer's V, indicating a moderate relationship between presence of a speech act and the

distribution pattern. Follow-up pairwise comparisons were conducted to evaluate the difference among these proportions. The alpha value was corrected to .01 using a Bonferroni correction to control for Type 1 error. Significant differences existed between the proportions of speech acts in the SC pattern when compared to the SK pattern ($\chi^2 = 9.024$, $p < .01$, Cramer's V = .469). The difference between the SK pattern and the mid pattern approached significance ($\chi^2 = 3.789$, $p = .05$, Cramer's V = .397). That is, the probability of a behaviour including a speech act was higher if the skill was rated as representative of SC or of the mid distribution pattern.

Table 3.6. Items representative of either expressive speech acts or a response to a speech act

Speech Act	Pattern	Type	Item	Med	Range	*M* (SD)	
Expressive (n = 17)	SC	Adult	Gives in or compromises with peers when appropriate	92	49-100	87.6	(12.3)
			Takes turns with toys and other objects	91	19-100	84.6	(17.7)
			Asks for help in an appropriate manner	90	25-100	84.1	(15.9)
			Asks appropriately for clarification of instructions	90	11-100	82.2	(20.7)
	SC	Peer	Is good at initiating or joining conversations with peers	99	36-100	95.8	(9.4)
			Comforts other children who are upset	96	60-100	91.9	(10.4)
			Participates in family or classroom discussions	96	69-100	93.0	(7.7)

			Enters appropriately into ongoing activities with peers	96	48-100	91.2	(11.6)
			Apologizes for accidental behavior that may upset others	96	39-100	89.4	(13.2)
			Notices and compliments accomplishments of others	95	47-100	89.0	(13.9)
			Invites other children to play	94	43-100	87.4	(14.5)
			Participates effectively in family or group activities	93	43-100	86.5	(15.4)
			Asks for help from adults when needed	90	20-100	82.5	(18.9)
			Is assertive in an appropriate way when he/she needs to be	90	34-100	83.8	(17.3)
			Offers to help peers when needed	89	51-100	85.8	(13.1)
			Stands up for other children's rights ("That's his!")	88	30-100	84.3	(15.9)
			Stands up for his or her rights	82	1-100	76.2	(23.0)
Response (n = 6)	SC	Adult	Responds appropriately when corrected	79	15-100	77.3	(19.1)
	Mid	Adult	Follows rules	56	1-100	54.3	(23.1)
			Listens to and carries out directions from parents or supervisors	52	1-100	52.0	(26.9)
			Follows instructions from adults	54	1-100	56.6	(25.8)
			Sits and listens when stories are being read	50	1-100	48.6	(29.0)

Accepts decisions made by adults	50	1-100	45.2 (24.8)

Next, participants' ratings of the items identified as speech acts were characterized according to the type of speech act (i.e., expressive or response to speech act). Descriptive statistics for each speech act item can be found in Table 3.6. Of the 23 items that did involve speech acts, 17 (73.9%) represented an expressive speech act and 6 (26.1%) represented response to a speech act. All of the mid items were identified as a response a speech act. All peer-related behaviours rated as speech acts were expressive speech acts. The median score of expressive speech acts was 92, with medians ranging from 82 to 99. The median score of response to speech acts was 53, with medians ranging from 50 to 79. An independent samples t-test revealed that expressive speech acts were rated as significantly more representative of SC (i.e., had higher medians) than were responses to speech acts (t(53) = 7.579, p < .001).

3.4   Discussion

Despite that *language use* in social interaction, or social communication, is a uniquely human phenomenon, its conceptualization in most models of social competence is not separate from non-linguistic social skills. Furthermore, there are difficulties in clearly differentiating children with social communication disorders from children of other clinical groups who have characteristic social deficits (e.g., ASD, ADHD), at the levels of classification and assessment (Ash & Redmond, 2014; Law et al., 2011; Norbury, 2014; Redmond et al., 2015; Redmond, 2002; Tager-Flusberg, 2013). This suggests an underlying conceptual issue regarding the boundaries between social communication and social skill. Thus, in the present study whether social communication behaviours could be identified uniquely within the larger domain of social skill was investigated. SLPs were asked to rate social skill behaviours on their representativeness

of social communication with a visual analog scale, using the following definition of social communication: "A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature".

The literature suggests that although there are differences between social skills and social communication (e.g., Gallagher, 1999; Hart et al., 1997; Redmond et al., 2015) these differences are a matter of degree and not necessarily of kind. As such, this phenomenon was measured using a visual analog scale, which is an ideal scale for constructs that are continuous and are not easily measured directly (Gift, 1989; Lee & Kieckhefer, 1989). Indeed, results of this study support this literature by showing that SLPs perceived social skill behaviours as having nuanced differences in their representativeness of social communication. Notably, they did so with a high level of agreement ($\alpha = .934$). That is, SLPs generally agreed that social communication is represented in the domain of social skills variably, depending on the particular social skill in question. Some social skills were identified as more representative of social communication than others. The nuanced differences revealed through the use of the visual analog scale would not have been uncovered had a discrete scale, (i.e., a binary or Likert scale) been used. Such scales force a judgment into a singular categorical rating, and hence, the degrees of difference between the given categories would not have been discernable. The results of this study suggest that while social communication does have a discernible role in all social skill behaviours, it will vary in its extent.

Three patterns of distribution emerged from participants' ratings: 1) items with distributions skewed towards the rightmost anchor indicated clear representativeness of social communication, 2) those with distributions skewed towards the leftmost anchor indicated the least representativeness of social communication; and hence, were labeled as social skill; and 3)

those with items with normal distributions and medians falling near the midpoint of the scale indicated that the representativeness of social communication within these items is not clear. That is, items with this third pattern of distribution were not clearly representative of social communication nor were they clearly identified as *not* representative of social communication, yet social communication played a role in the behaviors depicted in these items. These patterns of distribution along a continuum provide a rich source of information for further characterizing social communication in the domain of social skills. Within each distribution pattern, the nuanced ratings can be further analyzed.

Social communication pattern

More than half (32 of 56) of the social skills included in this questionnaire had patterns that indicated that the item was essentially synonymous with social communication skills (i.e., had patterns skewing towards the rightmost anchor). The majority of these social communication skills were peer-related behaviours (e.g., "Invites other children to play", "Is good at initiating or joining conversations with peers"). Peer-related behaviours emerged as a feature of many items rated strongly representative of social communication by participants, despite that peer-related skills were not included in social communication definition provided in the survey. However, this feature is prominent in many existing definitions of and approaches to children's social communication and the results confirm it as part of SLPs' perceptions (e.g., Brinton & Fujiki, 2005; Gerber, Brice, Capone, Fujiki, & Timler, 2012; Timler, Olswang, & Coggins, 2005).

These peer-related items can be characterized thematically as behaviours related to empathy and for achieving positive peer status (e.g., "Is sensitive to the feelings of others", "Has good leadership skills"). The median ratings of these items generally clustered between 70 and 90. This suggests that SLPs consider empathy and leadership skills as highly representative of

social communication. A potential explanation for this finding can be linked to the social communication definition provided to participants (i.e., "…a positive social behaviour for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature"). Empathy and leadership skills involve (minimally) dyadic interaction. These skills also potentially involve verbal and/or non-verbal skills. For example, one participant noted that "…a respected, good leader needs to be able to communicate with those he is leading by giving directions or demonstrating the task, and by providing feedback to the other group members" (S129). However, it should be noted that using verbal ability was stated in the definition, although it may not have been made explicit in the wording of the questionnaire items, i.e., no performative verb was included. Thus, it is possible that SLPs identified these skills as representative of social communication because of their importance to positive social interaction and the *implied* involvement of language.

In addition, approximately half of the items with this distribution pattern were expressive speech acts, most of which were peer-related behaviours as opposed to adult-related. Items that were expressive speech acts generally had median ratings that clustered between 90 and 100 (i.e., these items were closest to the rightmost anchor "Fully representative of social communication"). This suggests that SLPs may be sensitive to the presence of a performative verb in their perceptions of the social skills items they considered most representative of social communication. This trend in participants' ratings may also have been influenced by the definition of social communication provided on the questionnaire. As noted previously, dyadic, verbal communication skills were overtly mentioned and by definition expressive speech acts involve dyadic, verbal communication (i.e., expressive language skills). However, no mention was made in the definition of performative verbs, yet all items including an expressive speech

acts were rated as highly representative of social communication. Taken together the skills that were considered most representative of social communication can then be contrasted with the social skills that were identified as least representative of social communication.

Social skill pattern

Less than one fifth of social skills (9 of 56) items on the survey had a distribution pattern that suggested they were not highly representative of social communication (i.e., skewed towards leftmost anchor). These behaviours were characterized as compliance to adult-imposed activities and tasks (e.g., "Completes chores and assigned tasks on time", "Uses free time in an acceptable way"). Again considering the definition provided to participants, these items have no obvious communication component nor do they have obvious dyadic component, which may account for SLPs ratings of these items towards the leftmost anchor of the scale ("Not at all representative of social communication"). However, the median ratings of items within this distribution pattern ranged from 7 to 32, indicating that SLPs perceived these skills had least a small contribution of social communication. One participant's comment offers a possible explanation: "I feel like everything has a social communication component - even completing homework on time... If they aren't completing it on time, why aren't they - is it a social communication issue?" (S94). Indeed, to be able to complete a task on time, minimally a child must have the language skills to understand the instructions for the task and knowledge of the social expectation that they will heed these instructions, in addition to having adequate attentional resources and a willingness to follow an adult's instructions. That is, there are implied communicative and social components to a child's compliance to adult-imposed tasks and activities. As such, SLPs may perceive social communication to underlie all social skills in a varying way, despite the absence of an obvious

dyadic, communicative feature. Indeed, it has been suggested in the literature that communication underlies all skills contributing to social competence (Hart et al., 1997).

Mid pattern

A third distribution pattern included social behaviours that had median ratings near the midpoint of the scale, and thus were rated as neither fully representative of social communication nor as "not at all representative of social communication". These items can be characterized as self-management (e.g., "Shows self-control") and compliance to adult-imposed rules and expectations (e.g., "Follows rules"). Notably, many of the skills that involved compliance to adult-imposed rules and expectations were also identified as response to speech acts. This indicates that both receptive language and the conversational rules that govern a response to a speech act are involved in these social skills. For example, "Follows instructions from adults" requires a child to access receptive language skills and the knowledge that a request requires a response. That is, these skills involve the child's *response* to a dyadic and communicative interaction (rather than an *expressive* contribution to a dyadic, communicative interaction). As such, they only partially meet a strict interpretation of the definition given. Additionally, these skills also require a willingness to comply with an adult. Thus, communicative abilities in the form of receptive language and conversation rules, as well as acknowledging the social expectation of compliance are represented in such items. This dual nature may be what is being reflected in these midscale ratings.

The other skills within this pattern were self-management skills (e.g., "Controls temper when angry"). These skills, as they are described in the questionnaire, have no overt communicative or dyadic component, and thus one might hypothesize that these skills are not representative of social communication when considering the provided definition of social

communication. However, participants tended to rate self-management skills near the midpoint of the scale, suggesting some representativeness of social communication within these skills. Though not necessarily involving an overt expressive or receptive language skill, self-management or emotion regulation has been shown to be related to social communication (see Chapter 2; also ASHA, 2013; Durkin & Conti-Ramsden, 2007; Kjellmer & Olswang, 2013; Prizant & Meyer, 1993). These social skills may involve a verbal (i.e., language) component in the form of self-talk, a strategy whereby the child uses language to regulate their emotions (Brinton & Fujiki, 1993; Prizant & Meyer, 1993). Indeed, it is not unusual for adults to encourage children to "use their words" rather than their actions to express their emotions. Another possibility for this rating is the acknowledgement that an inability to control one's temper will interfere with social status, as is exemplified in the vignette presented in Brinton and Fujiki (2003). Thus, self-management skills may also be of a dual nature. SLPs may have been attuned to the link between self-management and social communication, and thus rated social communication as having some representativeness in these skills.

The items that comprised this mid pattern all had normal distributions, with median and mean scores around the midpoint of the scale (medians ranging from 45 to 66) and ratings ranging the entire visual analog scale. However, participants rated these items as such with a high level of reliability ($\alpha = .793$). Given our participants' sensitivity to language (as SLPs), receptive language skills as in compliance, or the *potential* non-conversational role of language, as in self-talk, in a social skill may have influenced participants to rate these items near the midpoint.

Implications for social communication in models of social competence

In research, models are meant to be representations of complex, real-life phenomena that help advance our understanding of a construct (Portney & Watkins, 2008). Current models of social competence approach social communication skills as one of a variety of any other social skills. However, SLP participants in this study have identified more than half of the social skill in this questionnaire as prominently social communication. This suggests that in their view social communication contributes to social skill in a substantial way. Indeed, these results revealed the perception that some social skills items are in and of themselves social communication skills. With such a strong representation within the domain of social skills it follows that social communication strongly contributes to social competence as well.

Approximately half of the social communication items were expressive speech acts, and one third of the mid items were representative of a child's response to speech acts, i.e., a child's ability to produce a socially appropriate response to another's speech act. Importantly, expressive speech acts were among the social skills that were rated as most representative of social communication. These findings highlight the role important roles of language that contribute to social competence. Yet, as discussed previously, the nuanced relationship between language and social skill is at best minimally represented in most models of social competence. Models that recognize this relationship can better capture the real-life phenomenon of social competence.

Models such as Guralnick's (1992) begin to recognize this contribution by including a communication component that draws on different knowledge bases, including language. However, Guralnick notes that a researcher's background likely influence their approach to social competence. Indeed, the raters in this study were SLPs whose training in language may have influenced their views on the relationship between language and social skill, but this cannot

fully account for the results presented here. This view of social communication has been identified in the literature of other disciplines such as developmental and social psychology as a uniquely human ability that greatly contributes to a child's social functioning (e.g., Guralnick, 1992; Hart et al., 1997). Therefore, the recognition of language in models of social competence should transcend disciplinary perspectives, but often does not. As such, the combined views of linguists, SLPs, and psychologists are crucial in order for speech acts and other social communication behaviours to be accurately represented in models of social competence. By including social communication, the power of models to explain social competence as a real-life phenomenon could improve.

Clinical implications

Models also help to inform clinical practice, and as such, a conceptual model with more explanatory power may help to address clinicians' concerns (Gerber et al., 2012) and improve clinical approaches to the classification, assessment, and treatment of children with social communication and/or social skill deficits (e.g., Coggins & Olswang, 2001; Timler, 2008). All social skill items in this study were identified as being representative of social communication to some degree, ranging from minimally to substantially representative. Nonetheless, current assessments of social skill do not capture the role of social communication explicitly within social skills, contributing to difficulties classifying and assessing children who have social communication deficits (Redmond, 2002). Moreover, as was discussed earlier, clinicians have expressed concern with differentiating children with social deficits (e.g., ASD, ADHD) from children with social communication deficits (i.e., SPCD) particularly because of the potential for language or social deficits to be under-identified in some children (Ash & Redmond, 2014; Norbury, 2014; Redmond et al., 2015; Redmond, 2002; Vivanti et al., 2013). The results of this

study suggest that social communication and social skills are interwoven in conceptual models of social competence, but not identified for their unique contributions. Conceptual models help to inform clinical approaches. Given this, social skill assessments that capture the graded representation of social communication in social skills may improve our understanding of social communication and social skill deficits. This may perhaps help to clarify the differentiation of clinical groups. For example, consider the social skill "Being accepted and liked by other children". SLP participants rated this item as representative of social communication, thus there is a high degree of language involved. If a child was identified as having difficulty with this skill in the process of social skill assessment, one might further investigate the *degree* to which a language component of this skill is affected. Thus, a more nuanced description of the child's social deficits can be achieved.

However, the development of models and assessments of social competence that capture the graded relationship between social communication and social skill call for input from researchers and clinicians from multiple areas of expertise. This task will require adjustments to current research and clinical approaches. That is, social competence has traditionally been approached from either a social perspective or from a language perspective, with not much integration of the perspectives of experts in these two areas (Guralnick, 1992). Indeed, Brinton and Fujiki (1993) have acknowledged that, traditionally, social and emotional deficits were seen as only tangential to SLPs' area of expertise (Brinton & Fujiki, 1993), although more recently clinicians have begun to consider the connection between language and social behaviour (e.g., Brinton & Fujiki, 2005). Guralnick (1992) suggests that a collaborative approach involving professionals from several disciplines may be beneficial to achieving a full understanding of peer-related social competence. In the clinical realm, Brinton and Fujiki also advocate for a

collaborative approach, noting, "…social communication treatment targets tend to stretch speech-language pathologists beyond traditional treatment spheres" (Brinton & Fujiki, 2005, p. 158). Such a collaborative approach would integrate expertise in a joint assessment of children with social deficits (Brinton & Fujiki, 2005). A mutual understanding between professionals of their respective expertise and roles in assessment will facilitate collaboration. The perspective of a unique but graded contribution of social communication within social skills might guide the content and extent to which each professional contributes to an integrated evaluation. Such an approach might begin to address the concerns recently raised about an SLP's scope of practice in social communication assessments (Gerber et al., 2012).

By characterizing social communication behaviours and their graded contribution to social skill behaviours, this study has provided perspective on addressing the boundaries for the scopes of practice of SLPs and other professionals in social skill assessment and intervention. SLPs with experience treating social communication deficits identified several social behaviours that were clearly representative of social communication, which were characterized in the present study as expressive speech acts, empathy, and positive peer status. These characteristics of social communication provide perspective for defining the role of the SLP in social competence assessment. Specifically, SLPs may take the lead role for peer-related social skills for which an expressive speech act is required to successfully achieve a social goal. Adult-related social behaviours that require self-management skills and compliance with rules/expectations, with the latter items overlapping with the child's response to others' speech acts, were not clearly distinguished for their involvement of social communication. As such, and SLP might take a less prominent role in assessing these social skills as part of a collaboration among professionals. That is, SLPs may assume a shared role when addressing those social skills that entail receptive

speech acts (i.e., receptive language skills). Social skills pertaining to compliance to adult-imposed tasks and activities were not highly representative of social communication in the view of SLPs. Thus, SLPs may assume a supportive role when addressing these skills, offering support to other professionals who are specifically trained in social deficits (e.g., trained to teach strategies for children's self-talk).

Limitations and future directions

The present study has begun the process of understanding the relationship between social skills and social communication; however, there were some limitations to the study, and more work is necessary before a more complete understanding of this relationship can be attained.

First, Guralnick notes that the lens through which a professional views social competence has typically influenced their approach to its assessment and treatment. Thus, SLPs may be inclined to rate social skills as more highly representative of social communication than would someone with a less extensive background with language, a possible limitation of this study. An exploration of how other professionals (teachers, school psychologists) and the lay public complete the questionnaire could reveal whether the perceptions of SLPs reflect a professional bias or a construct that is common across individuals sharing the same social expectations. If the former is the case then pursuing additional groups' perceptions would allow for the comparison and triangulation of perspectives on social communication and social skills. This could lead to improving models of social competence to have more explanatory power and inform inter-professional scope of practice and collaboration.

Second, the questionnaire in the present study included items from a preschool social skills questionnaire and from a school-aged social skills questionnaire. Given that the expectations for social competence change throughout development, further exploration of the

developmental differences in these items may be useful for better understanding the relationship between social skills and social communication. For example, because of what skills are available to them, "Makes friends easily" likely requires different social skills and social communication skills for a preschooler than for a third grader.

Third, the content of the two parent-report tools chosen to create the questionnaire may have impacted the results. Though the *PKBS* and *HCSBS* were the result of rigorous factor analyses, the list of social skills included in this study did not necessarily comprise an exhaustive list, and some children's social skills may not have been included. Additionally, the wording of items provided limitations to this study. Three behaviours included additional detail with the addition of example utterances (e.g., 'Tries to understand another child's behavior ("Why are you crying?")'). Items that included such a verbal example were all rated as representative of social communication. Ratings may have been different had no examples been provided, or vice versa – if all behaviours included examples.

Moreover, some items from the questionnaire described social behaviours that were more complex than others. For example, "Makes friends easily" is a broad skill that may require a child to employ several more specific skills identified in other items, such as "Smiles and laughs with other children" and "Invites other children to play". The notion of "composite" or multi-level tasks is one that has been identified as meaningful in the literature (Adams, Lockton, Gaile, Earl, & Freed, 2012; Adams, Lockton, Freed, et al., 2012; Fujiki & Brinton, 2009; Norbury, 2014; also see Chapter 2); however, we did not specifically investigate the impact of multi-level tasks vs. singular items on perceptions here. An investigation of the role of social communication in these composite skills may help to further advance the results presented here.

Lastly, the results of the present study also have implications for the training of SLPs. More than three quarters of the social skills included in this questionnaire were identified as having *some* contribution from social communication, most of which were peer-related. Although speech acts may be a part of SLPs' current training, social skill development and how it is intertwined with language development may not be part of part of an SLP's training. Given this large roster of peer-related social skills being representative (to some degree) of social communication and the large proportion of SLPs reporting treating of social communication deficits (ASHA, 2012), additional SLP training in peer-related social skill, including how it interplays with language development, may facilitate the generation of comprehensive interventions.

3.5   Conclusion

This initial investigation of the boundaries of social communication within the domain of social skill collected the perceptions of SLPs. SLPs, as professionals trained to be aware of language use in social interaction, revealed that most social skills of preschool and school-aged children have some degree of contribution from this uniquely human capacity. Specifically, the results of the present study suggest that social communication has a nuanced yet discernible role in social skill. These results highlight *language use in social interaction* as a uniquely human ability and as an important contributor to social competence. The recognition by SLPs and other professionals of the role of language in social skill may lead to improved differentiation of clinical groups, and provide guidance for scope of practice.

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3.7   Appendices

Appendix 3A

Duplicate/near duplicate items from the *PKBS* and *HCSBS*

PBKS item	*HCSBS* item
2. Is cooperative.	1. Cooperates with peers.
4. Plays with several different children.	19. Interacts with a wide variety of peers.
10. Shows self-control.	31. Shows self-control.
11. Is invited by other children to play.	30. Is invited by peers to join in activities.
18. Adapts well to different environments.	27. Adjusts to different behavioral expectations across settings.
19. Has skills or abilities that are admired by peers.	11. Has skills or abilities that are admired by peers.
21. Invites other children to play.	9. Invites peers to participate in activities.
23. Follows rules.	16. Follows family and community rules.
28. Gives in or compromises with peers when appropriate.	15. Will give-in or compromise with peers when appropriate.
32. Responds appropriately when corrected.	23. Responds appropriately when corrected by parents or supervisors.

In the case of duplicate items, the *PKBS* version of the item was included in the questionnaire.

Appendix 3B

List of items included on questionnaire

Item # on Questionnaire	Original scale and item #		Item	Subscale	Type of social competence
1	*PKBS/HCSBS*	2/1	Is cooperative	COOP	Adult
2	*PKBS/HCSBS*	4/19	Plays with several different children	IND	Peer
3	*PKBS/HCSBS*	10/31	Shows self-control	COOP	Adult
4	*PKBS/HCSBS*	11/30	Is invited by other children to play	IND	Peer
5	*PKBS/HCSBS*	18/27	Adapts well to different environments	IND	Peer
6	*PKBS/HCSBS*	19/11	Has skills or abilities that are admired by peers	INT	Peer
7	*PKBS/HCSBS*	21/9	Invites other children to play	INT	Peer
8	*PKBS/HCSBS*	23/16	Follows rules	COOP	Adult
9	*PKBS/HCSBS*	28/15	Gives in or compromises with peers when appropriate	COOP	Adult
10	*PKBS/HCSBS*	32/23	Responds appropriately when corrected	COOP	Adult
11	*PKBS*	1	Works or plays independently	IND	Peer
12	*PKBS*	3	Smiles and laughs with other children	IND	Peer

13	*PKBS*	5	Tries to understand another child's behavior ("Why are you crying?")	INT	Peer
14	*PKBS*	6	Is accepted and liked by other children	IND	Peer
15	*PKBS*	7	Follows instructions from adults	COOP	Adult
16	*PKBS*	8	Attempts new tasks before asking for help	IND	Peer
17	*PKBS*	9	Makes friends easily	IND	Peer
18	*PKBS*	12	Uses free time in an acceptable way	COOP	Adult
19	*PKBS*	13	Is able to separate from parent without extreme distress	IND	Peer
20	*PKBS*	14	Participates in family or classroom discussions	INT	Peer
21	*PKBS*	15	Asks for help from adults when needed	INT	Peer
22	*PKBS*	16	Sits and listens when stories are being read	COOP	Adult
23	*PKBS*	17	Stands up for other children's rights ("That's his!")	INT	Peer
24	*PKBS*	20	Comforts other children who are upset	INT	Peer
25	*PKBS*	22	Cleans up his or her messes when asked	COOP	Adult
26	*PKBS*	24	Seeks comfort from an adult when hurt	INT	Peer
27	*PKBS*	25	Shares toys and other belongings	COOP	Adult

28	*PKBS*	26	Stands up for his or her rights	IND	Peer
29	*PKBS*	27	Apologizes for accidental behavior that may upset others	INT	Peer
30	*PKBS*	29	Accepts decisions made by adults	COOP	Adult
31	*PKBS*	30	Takes turns with toys and other objects	COOP	Adult
32	*PKBS*	31	Is confident in social situations	IND	Peer
33	*PKBS*	33	Is sensitive to adult problems ("Are you sad?")	INT	Peer
34	*PKBS*	34	Shows affection for other children	INT	Peer
35	*HCSBS*	2	Makes appropriate transitions between different activities	SMC	Adult
36	*HCSBS*	3	Completes chores without being reminded	SMC	Adult
37	*HCSBS*	4	Offers to help peers when needed	PR	Peer
38	*HCSBS*	5	Participates effectively in family or group activities	PR	Peer
39	*HCSBS*	6	Understands problems and needs of peers	PR	Peer
40	*HCSBS*	7	Remains calm when problems arise	SMC	Adult
41	*HCSBS*	8	Listens to and carries out directions from parents or supervisors	SMC	Adult
42	*HCSBS*	10	Asks appropriately for clarification of instructions	SMC	Adult
43	*HCSBS*	12	Is accepting of peers	PR	Peer

44	*HCSBS*	13	Completes chores or other assigned tasks independently	SMC	Adult
45	*HCSBS*	14	Completes chores or other assigned tasks on time	SMC	Adult
46	*HCSBS*	17	Behaves appropriately at school	SMC	Adult
47	*HCSBS*	18	Asks for help in an appropriate manner	SMC	Adult
48	*HCSBS*	20	Produces work of acceptable quality for his/her ability level	SMC	Adult
49	*HCSBS*	21	Is good at initiating or joining conversations with peers	PR	Peer
50	*HCSBS*	22	Is sensitive to the feelings of others	PR	Peer
51	*HCSBS*	24	Controls temper when angry	SMC	Adult
52	*HCSBS*	25	Enters appropriately into ongoing activities with peers	PR	Peer
53	*HCSBS*	26	Has good leadership skills	PR	Peer
54	*HCSBS*	28	Notices and compliments accomplishments of others	PR	Peer
55	*HCSBS*	29	Is assertive in an appropriate way when he/she needs to be	PR	Peer
56	*HCSBS*	32	Is "looked up to" or respected by peers	PR	Peer

Note: HCSBS subscales: SMC = Self Management/Compliance; PR = Peer relations. *PKBS* subscales: IND = Social independence; INT = Social interaction;

COOP = social cooperation

Appendix 3C

Instructions for completing online questionnaire

Instructions:

A definition of social communication is provided for you at the top of each page. Indicate how representative each item is of social communication by clicking a point along the continuum.

You may select any point along the line. The point you select signifies the relationship between the item and the anchors at each end of the line. You are encouraged to use the entire continuum.

Examples are provided for you below.

Before you select a point along the line, the line will be light grey in colour as is illustrated below.

A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature.

Indicate how representative each item is of social communication by clicking a point along the continuum.

Brushes teeth.

Not at all representative of social communication — Fully representative of social communication

After you have successfully selected a point along the line, the line will be dark grey in colour as is illustrated below in Example 1.

Example 1

A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature.

Indicate how representative each item is of social communication by clicking a point along the continuum.

Brushes teeth.

Not at all representative of social communication   Fully representative of social communication
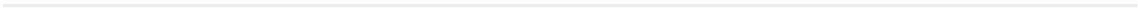
The act of brushing one's teeth involves no communicative exchange, thus it is not representative of social communication. As such, a point closer to the "Not at all representative of social communication" anchor is selected.

Example 2

A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature.

Indicate how representative each item is of social communication by clicking a point along the continuum.

Stops talking when someone else is contributing to the conversation.

Not at all
representative of
social
communication

Fully
representative of
social
communication

Waiting quietly while one's conversational partner finishes his/her sentence is an important part of a dyadic, communicative exchange; thus, it is quite representative of social communication. As such, a point closer to the "Fully representative of social communication" anchor is selected.

Example 3

A social communication skill is a positive social behavior for which a dyadic, communicative (verbal or non-verbal) exchange is the key feature.

Indicate how representative each item is of social communication by clicking a point along the continuum.

Has several friends from activities other than school (e.g., friends from swimming lessons, friends from his/her soccer team).

Not at all
representative of
social
communication

Fully
representative of
social
communication

Having friends from many extracurricular activities is something that would be facilitated by a dyadic communicative exchange. However, other social skills may also play a role in having many friends; hence, a communicative exchange may not be the key feature of this skill. As such, a point on the continuum somewhere between the anchors is selected.

Chapter 4

4   Summary and future research directions

Social communication is a complex and dynamic construct, and there has been persistent

difficulty with its conceptual bases in the field of Speech-Language Pathology since the

pragmatic revolution of the 1980s (Brinton, Craig, & Skarakis-Doyle, 1990; Gerber, Brice,

Capone, Fujiki, & Timler, 2012; Law, Plunkett, & Stringer, 2011; Norbury, 2014). This problem

is also evident in other related fields such as developmental psycholinguistics (O'Neill, n.d.,

2012). The underlying conceptual obscurity is also reflected in in the classification of social

communication disorders (Norbury, 2014; Tager-Flusberg, 2013; Vivanti et al., 2013). The

advancement of knowledge via research and clinical practice in a field is impeded when there is

little agreement on the field's concepts and constructs. Concepts and constructs form the bases of

a scientific paradigm by guiding the hypotheses researchers make and the theories and models

that are developed in empirical research (Portney & Watkins, 2008). Ultimately, empirical

research informs clinical best practices (Dollaghan, 2008; Portney & Watkins, 2008). Therefore,

the advancement of knowledge is facilitated when a field shares a consensus of its key concepts

and constructs; that is, when a field agrees on a paradigm (Kuhn, 1962).

In the field of Speech-Language Pathology, among main issues that obscure our current

understanding of social communication are: 1) issues pertaining to terminology; 2) issues

pertaining to classification; and 3) issues pertaining to the boundaries of social communication

and the broader domain of social skill. The objective of the current project was to advance our

understanding of the conceptual foundations of social communication by investigating these three problematic areas.

4.1 Review of key issues

To review, the terms 'social communication' and 'pragmatics' share similar definitions in the literature. Social communication has been defined as language use in social interaction (Gerber et al., 2012), and pragmatics has been defined as language use in context (Bates & Macwhinney, 1979; Norbury, 2014). The two terms are used both interchangeably and as distinct terms in the research literature and in clinical assessment (Adams, 2005; Fujiki & Brinton, 2009; Gerber et al., 2012; Izaryk et al., n.d.; Norbury, 2014; O'Neill, 2012). For example, Gerber and colleagues chose to use the term 'language use in social interaction' as an umbrella term to mean both social communication and pragmatics in their systematic review treatment of language use disorders in children. Additionally, the *Diagnostic and Statistical Manual of Mental Disorders – 5th Edition* (*DSM-5*) (American Psychiatric Association, 2013a) has included Social (Pragmatic) Communication Disorder (SPCD), a diagnostic category for social communication disorders that uses both social communication and pragmatics in its title, thus making no distinction between the two terms. In contrast, Adams has used the terms in distinct ways in developing a social communication intervention program, suggesting that pragmatics is one of its four basic components (Adams, Lockton, Gaile, et al., 2012; Adams, 2005; Adams, Lockton, Freed, et al., 2012). This varying usage of pragmatics and social communication is problematic because without shared terminology, communication between researchers is impeded and the translation of research to clinical practice is hampered (Bishop, 2014; Norbury, 2014).

Moreover, the differing use of these terms is detrimental to developing a sound conceptual understanding of social communication, and therefore impedes a sound classification of social

communication disorder. Current classification systems use the terms 'social communication' and 'pragmatics' in different ways. However, there cannot be agreement on classification of a disorder when there is no agreement on the terminology used to refer to that disorder (Bishop, 2014). Indeed, in addition to using different terminology, current classification systems also classify social communication disorders in different ways. The two classification systems are both intended to describe disorders of language use; however, each approaches social communication and pragmatics in a different way, reflecting the lack of consensus by several fields. The *DSM-5* (American Psychiatric Association, 2013a) removed social communication disorder as a subtype of language disorder, listing SPCD as its own "stand alone" disorder. In contrast, the *International Classification of Diseases – 11th edition (beta version)* (*ICD-11*) (World Health Organization, n.d.) classifies pragmatic language disorder as a subtype of developmental language disorder. "With no clear criteria for deciding who needs extra help, it is all too easy for [those charged with allocating resources] to remove support" (Bishop, 2014, p. 383), a truth for the allocation of resources for both clinical practice and research funding. A clear understanding of how to classify social communication disorder is important because of social communication's contributions to social competence.

Social communication and social skills both contribute to social competence, but how these two constructs are distinct is not clear. The final issue explored by the current project was an investigation of the boundaries between social communication and the domain of social skill. Currently, the boundaries of social communication to other social skills are unclear. Social communication is not clearly recognized in models of social competence for its unique contributions (Beauchamp & Anderson, 2010; Caldarella & Merrell, 1997; Crick & Dodge, 1994; Guralnick, 1992). Furthermore, research has shown varying strengths and needs in the

social and language skills of children in clinical populations that are defined by deficits in these two domains (Ash & Redmond, 2014; Law et al., 2011; Redmond et al., 2015). For example, Ash and Redmond (2014) found that children with symptoms of SPCD also had diagnoses of Autism Spectrum Disorder (ASD), Attention-Deficit Hyperactivity Disorder (ADHD), or other social-emotional disorders. As such, our conceptualization of social communication is obscured by a lack of clarity on its boundaries with social skill. Difficulty discerning social skills from social communication at the conceptual level has led to difficulty specifying areas of need for children who have deficits in social skill and/or language. Consequently, this lack of understanding has raised concerns for scope of practice for Speech-Language Pathologists (SLPs) treating social communication disorder (Gerber et al., 2012).

In a recent survey, 83% of SLPs reported having treated social communication disorders (ASHA Roles and Responsibilities of SLPs in Schools Working Group, 2012), despite also raising concerns pertaining to how to conceptualize social communication disorders (Gerber et al., 2012). Hence, collecting their perspectives was a logical starting point for investigating the foundations of children's social communication in the current project. Two separate approaches were taken because of the complexity of the issue at hand, each of which addressed a different facet of the problem. First, to address the issues of terminology and classification, experts in the field of social communication participated in a Delphi survey, which is a qualitative approach involving a series of iterative questionnaires (Study 1). Second, to further address classification and to investigate boundaries, SLPs' perceptions of the relationship between social communication and social skill were collected via a survey using a visual analog rating scale, a quantitative approach (Study 2). Although these issues of terminology, classification, and boundaries were initially addressed separately through these two studies, the integrated analysis

of the results of both studies as presented here has shown that the issues of terminology, classification, and boundaries are interdependent.

First, the results presented in Study 1 advanced our understanding of the issues with terminology by indicating that social communication and pragmatics are distinct terms, despite their highly interrelated nature. Specifically, the expert panel indicated that social communication and pragmatics share all key features, and moreover, that social communication and pragmatics draw from the same underlying knowledge/processing domains. Yet, despite this total overlap of their foundations, the expert panel also maintained that the two terms are conceptually distinct. An initial examination of this result suggests that the panel of experts has simply reiterated the existing lack of clarity in the literature. However, a more thorough analysis reveals that this is not the case. In the early stages of Study 1, panel members brought forth varying perspectives on pragmatics and social communication. Some participants thought the terms were synonymous, others viewed pragmatics as a component of social communication, and still others thought of social communication as a component of pragmatics. Through the process of Study 1, these perspectives gradually morphed to become more similar. By the conclusion of Study 1, the expert panel was able to reach a consensus that social communication and pragmatics do share the same key features, and that there exists an undetermined distinction between the two terms. That is, the experts alluded to the fact that two terms are necessary *despite* the overlap of key features. The acknowledgement that social communication and pragmatics are distinct permits the advancement of knowledge in the field via the pursuit of *how* the terms differ. The panel provided several suggestions for doing so, including investigating the influence of its usage with specific clinical groups (e.g., ASD) or exploring of the role core language plays in the conceptualization of social communication and pragmatics.

Second, the results of this project have helped to advance an understanding of social communication by determining the nature of the boundaries between social communication and social skill. Specifically, the results of Study 2 showed that to experienced SLPs the boundaries between social communication and social skill are not distinct. Instead, social communication varies in its representation within social skills. Some social skills can be clearly differentiated from social communication, some are essentially synonymous with social communication, and some involve social communication to a greater or lesser extent.

Study 2 also served to characterize the skills that were most and least representative of social communication. By characterizing social skills that have a social communication component, a preliminary understanding of the degree to which language is involved in various social skills has been gained. For example, social skills containing expressive speech acts were judged the most representative of social communication, while skills such as completing adult-imposed tasks (e.g., chores) were least representative of social communication. As a result, some perspective has been gained that could pertain to the scopes of practice of SLPs and other professionals working with children with social skill and social communication deficits.

Several initial advances towards the classification of social communication have also been made with a better understanding of the terminology and boundaries of social communication and social skill. First, experts in Study 1 indicated that although the terminology used to define social communication and pragmatics is identical, there are as-yet undefined distinctions. This suggests that a distinction between the two terms may prove meaningful in the classification of disorders. However, more research into *how* social communication is differentiated from pragmatics is necessary in order to further explore how this distinction might be captured by a classification system. As will be discussed in section 4.2, the expert panel in Study 1 identified

several possible directions for future research, including the further exploration of the role of core language skills with other social behaviors.

Not surprisingly, the results from both Study 1 and Study 2 provide support for the classification of social communication disorder as a subtype of language impairment. This was a position advanced by the American Speech-Language-Hearing Association (ASHA) *before* the release of the *DSM-5* (ASHA, 2012). In Study 2, expressive speech acts were rated among the social skills that were most representative of social communication. Expressive speech acts can be identified by the presence of a performative verb. Through the use of a performative verb, one is doing something by saying something (Austin, 1975), and performative verbs require a command of expressive *language* skills. Furthermore, participants in Study 1 identified several additional language skills as key to both social communication and pragmatics, such as being able to modify *language form and content* considering contextual variables (e.g., using polite forms when addressing adults). Thus, language is an important feature of social communication, and thus to social interaction - at least from the perspective of SLPs. However, "[t]he ability to participate in conversation is basic to getting along from day to day in society" (Brinton & Fujiki, 1989, p. 1), and indeed communication is recognized as a component of human functioning (e.g., WHO, 2001, 2007). This suggests that the recognition of language in social interaction should transcend professional and disciplinary boundaries.

Lastly, the recognition of the identification of nuanced boundaries between social communication and social skill may also contribute to issues of classification. For classification systems to accurately capture social communication and other related social deficits, the extent of contributions of social communication to social skills may be an important inclusion in such

classifications. Such an approach may permit a finer distinction to be made between impaired and intact skills. This too is an area that requires more investigation.

In summary, social communication is a complex construct, and so it is no surprise that its conceptual foundations are also complex. The current project has made an initial effort to understand the conceptual foundations social communication by exploring two aspects of this complicated construct. Specifically, social communication and pragmatics have been identified as distinct but related terms, and the boundaries between social communication and social skill have been characterized as nuanced. Much work remains to be done before an adequate understanding of social communication's conceptual bases can be achieved, and an integration of the present studies offers several possible directions for the continued investigation of these conceptual bases.

4.2   Directions for the advancement of knowledge: Social communication, pragmatics, and social skill as a set of interwoven constructs

The results of the current studies suggest that a conceptualization that integrates pragmatics and social skill may be an effective approach to better understanding the conceptual bases of social communication. One possibility for such a conceptualization is presented here.

It has been proposed that social communication deficits may best be conceptualized as a set of symptoms common across several disorders rather than as a disorder in its own right. This is true for both the adult language literature (Baylor, Burns, Eadie, Britton, & Yorkston, 2011) and the child language literature (Adams, 2005; Norbury, 2014). Baylor and colleagues (2011) investigated the communicative participation skills of adults with language impairment as a result of a number of different disorders. Communicative participation is defined as "taking part in life situations where knowledge, information, ideas, and feelings are exchanged" (Eadie et al.,

2006), and is thus a term similar in scope to 'social communication'. Baylor and colleagues noted several commonalities in these skills across the different clinical groups, indicating that perhaps communicative participation disorder is best approached as a common symptom of several clinical groups. Specifically, dividing people into clinical groups and then describing the communicative participation deficits within each group, rather than describing the symptomology of a communicative participation across groups, may impede a better understanding of the foundations of communicative participation. Looking at a common symptomology across diagnostic groups may lead to a better understanding of the universal features of communicative participation disorder, and as such may serve to advance knowledge (Baylor et al., 2011). The same notion of communicative participation symptomology could be applied to children's social communication.

In the case of children's social communication skills, knowledge advancement has indeed been impeded by the persistent difficulty conceptualizing social communication and a paucity of scientific research to inform clinical practice or support a single diagnostic label (i.e., SPCD) (Adams, 2005; Gerber et al., 2012; Norbury, 2014). Thus, it has been suggested that children's social communication difficulties are conceptualized as a *set of symptoms* common across several clinical groups, rather than as a diagnostic label (Adams, 2005; Norbury, 2014). For example, Adams has developed an intervention program for social communication disorder (Social Communication Intervention Project; SCIP) that provides some preliminary evidence for the treatment of pragmatics, social communication, and social skills as a set of symptoms (Adams, Lockton, Gaile, et al., 2012; Adams, Lockton, Freed, et al., 2012). The SCIP consists of three main aspects: pragmatics, language processing, and social understanding/social interaction. Each aspect has five components that are each linked to specific treatment goals. These goals are

determined based on the child's scores on a variety of initial assessments. Therefore, each child receives an individualized treatment program based on his/her own social communication strengths and needs in the areas of pragmatics, language processing, and social interaction. Thus, the SCIP presupposes social communication disorder as a set of symptoms in the domains of pragmatics, language processing and social understanding/social interaction. Support for the SCIP as an individualized intervention program has been shown in a randomized controlled trial, and has provided some preliminary evidence for the efficacy of approaching social communication disorders as a set of symptoms.

Although conceptualizing social communication disorder as a set of symptoms may prove to be beneficial for understanding the strengths and needs of children with social communication deficits, this notion is not without controversy. The pros and cons of using diagnostic category labels in Speech-Language Pathology have been debated recently (Bishop, 2014). The use of commonly understood diagnostic labels can facilitate communication between researchers and clinicians (Bishop, 2014). Resource allocation for research and for clinical work is dependent on the use of diagnostic labels (Bishop, 2014). However, assigning individuals to separate clinical categories also creates competition for limited research and treatment resources among those clinical groups, regardless of similar or overlapping symptoms (Bickenbach, Chatterji, Badley, & Ustun, 1999; Zola, 2005). Indeed, Bishop (2010) has shown that ASD and ADHD have received more research funding than language impairment (LI), regardless of the fact the former have a lower prevalence than the latter and that they all share overlapping symptoms.

Nonetheless, the notion of social communication deficits as a set of symptoms may be a promising line of inquiry as is shown by Adams' SCIP. However, the underlying concepts and constructs of social communication must be agreed upon *before* the symptoms of social

communication *deficits* can be understood. Indeed, the integrated findings from the two present studies taken together with the assertions of Adams and Norbury suggest that a unified conceptualization of social skill, social communication, and pragmatics as a *set of related and overlapping skills* may be a useful way to advance knowledge in this area. That is, the current studies have shown that social skills are nuanced for their representation of social communication, and that social communication and pragmatics are interrelated but distinct terms. Thus, some relationship between social skills and pragmatics is also implied. A conceptualization that captures this triadic relationship may contribute to development of models of social competence that include contributions from social skills, social communication, and pragmatics. Researchers in the field can then assume the same underlying constructs and concepts and subsequently form hypotheses based on these agreed upon concepts. Doing so will allow for the development of models of social competence that capture the contributions of social skill, social communication, and pragmatics, and models such as Adams (2005) and Coggins and Olswang (2001) provide a starting point. Assessments that provide a more comprehensive way for capturing the varying/intertwined strengths and needs of children with language and social deficits can be developed.

However, there are still several aspects of the conceptual foundations of social communication that are not well understood. These aspects must be investigated in order for a conceptual understanding of social communication to be improved. The current studies have suggested directions that future investigations could take.

4.2.1   Distinguishing social communication and pragmatics

One direction for future research is the investigation of *how* social communication and pragmatics are different. The notion that social communication and pragmatics are distinct is

consistent with some current uses of these two terms; although, not surprisingly, approaches to *how* the terms are distinct vary within the existing literature. For example, Adams (2005) has suggested that pragmatics is one of four domains that contribute to social communication. Norbury (2014) suggests that social communication and pragmatics are similar but related terms, with pragmatics being more closely related to structural components of language than social communication.

The results of the present studies may provide some support for Norbury's assertion. First, like Norbury, a participant in Study 1 posited that perhaps pragmatics is related to core language abilities in social interaction, and social communication encompasses all the other non-language behaviours required for social interaction. Results from Study 2 also lend support for this distinction, with items containing expressive speech acts rated as the social skills most representative of social communication. Expressive speech acts rely on core language ability via the use of performative verbs. In contrast, leadership and empathy skills were also representative of social communication, but had less overt language components.

The integrated results from this project could also elaborate on Norbury's assertion that there is a distinction between social communication and pragmatics that is related to the amount of involvement of core language skills. For instance, social skills that were identified as representative of social communication could possibly be further divided into two groups: those that have an overt language component (i.e., what Norbury would call pragmatic skills), and those that do not have an overt language component, but are still representative of social communication. That is, expressive speech acts might be considered to be pragmatic skills because of the involvement of core language skills (i.e., the use of performative verbs). As they were worded in Study 2, empathy and leadership items did not have an overt language

component, and thus could be considered social communication skills. However, as was discussed in Study 2, leadership and empathy may still have a language component (e.g., a leader might use language to direct his/her peers). Hence, future research might work to explicitly describe the role of language in empathy and leadership skills. The role of core language skills may offer some insight into the distinction between social communication and pragmatics, perhaps resulting in a more precise classification of the symptomology of social communication disorders.

The expert panel in Study 1 offered several other potential suggestions for the distinction between social communication and pragmatics. One suggestion was that of a multi-level conceptualization of social communication and pragmatics. That is, participants noted that within those features listed as key to social communication and pragmatics, some were minimal descriptive units (i.e., singular skills) and some were events (i.e., composite skills that may involve several minimal descriptive units. Events and minimal units draw from the knowledge/processing domains. To illustrate, consider the event of joining peer interaction. This event might involve minimal units such as formulating a greeting, asking questions, and conversational turn taking, and involves the combination of linguistic, social, and cognitive knowledge. Participants noted that this suggestion had promise for understanding the relationship between pragmatics and social communication; however, that future research is necessary to explore the feasibility of this suggestion. Ultimately, as another participant pointed out, at this point it is not clear if any of these elements have psychological reality and that would have to be established.

A third possibility for distinguishing social communication from pragmatics involves the integration of Norbury's suggestion and the multi-level suggestion from participants. Future

research might investigate how the involvement of core language might dictate the minimal units that are involved in events. For example, one participant noted that different events likely employ different core language skills; that is, resolving conflict might employ different language skills than entering a peer interaction.

4.2.2   Conceptualizing social skill in relation to social communication and pragmatics

Social communication and social skills are intertwined constructs that both contribute to social competence in children. Hence, a continued investigation into the relationship between social skills and social communication will contribute to the development of a unified view of social skill, social communication, and pragmatics by providing a better understanding of how social skills and social communication are related. For example, in Study 2, SLPs rated those social skills involving expressive speech acts (i.e., performative verbs) as most representative of social communication. As has been noted previously, SLPs' training in language may have influenced their ratings. Thus, the hypothesis was made that the role of language should transcend disciplinary boundaries. To test this hypothesis, a replication of Study 2 using teachers, psychologists, or parents as participants could be conducted. If the same results are produced, then it could be concluded that language is indeed an essential feature of social competence – even from the views of people who do not have a professional bias towards language. If different results are produced, then a triangulation of the results with those of Study 2 could result in a better understanding of social communication's contributions to social competence. Thus, an examination of how people other than SLPs rate social communication's representation in social skills may provide another angle from which to examine the conceptual bases of social communication.

4.2.3 Accounting for development

For children, "…symptom profiles may change significantly with age" (Norbury, 2014, p. 211), and these changes should be accounted for in any conceptualization of social communication. Indeed, participants in Study 1 noted the importance of accounting for development in any conceptualization of social communication and pragmatics. The expectations for social competence change throughout development. In parallel, the skills necessary for achieving social competence also improve and change throughout development (Odom et al., 1992). For example, a 1-year old will communicate a request for a cookie by pointing and making a vocalization. A 2-year old might make a request by uttering, "Cookie please", while a 5-year old will ask, "Can I please have a cookie?" In each case, the child would be considered socially competent, and in each case, the child is making use of their developing language skills. However, it would not be considered socially competent if a 5-year old pointed and vocalized to make such a request. Conceptualizations of social communication and pragmatics that take these changes into account will more adequately capture the real-life phenomenon of social communication throughout childhood, and therefore will serve to advance knowledge.

4.2.4 Other future directions

In addition to the points outlined above, there are other considerations for the continued investigation of the conceptual foundations of social communication. First, the evidence from the present project is an interpretation of the *perceptions* of SLPs. A logical point moving forward would be an investigation of the 'psychological reality' of their perceptions by looking for empirical evidence of conceptual boundaries from observing and describing the actual behaviours of children.

Another consideration for a future research direction is the investigation of how 'social communication' is currently used when describing ASD. A theme that emerged from Study 1 was the substantial influence of ASD on the conceptualization of social communication. For a population with a very small prevalence, its advocates are very effective as can be seen in the large amount of research funding allocated (Bishop, 2010). Further, in the clinical domain, the relationship between ASD and social communication deficits was paid much attention in the development of the *DSM-5*, to the point that SPCD was developed as a category to describe children who would have previously been diagnosed as having high-functioning autism (Norbury, 2014; Tager-Flusberg, 2013; Trembath, 2014; Vivanti et al., 2013). Expert panel members speculated that the increased attention to ASD, a clinical group defined by both language deficits and social difficulties may have impacted how we think and talk about social communication disorders.

The accessibility of social communication as a comprehensible term to the general public also emerged in Study 1 as an additional influence on the use of social communication. Investigating how the general public understands and uses the term 'social communication' may also contribute to understanding the conceptual foundations of social communication.

4.3   Conclusion

As a fundamental aspect of human functioning, social communication is complex and dynamic. The field of Speech-Language Pathology has faced persistent challenges with conceptualizing the complex construct of social communication. These challenges have extended into the clinical realm, as is reflected in the varying classification of social communication disorders and in the controversial addition of SPCD to the *DSM-5*. A common understanding of the concepts and constructs in a field is important because it forms the bases of hypotheses and

the development of theories and models in research. As a result, a common understanding

contributes to the advancement of knowledge by facilitating communication between researchers

and aiding the translation of research to clinical practice. The present studies have made an initial

contribution to understanding the foundations of the construct of social communication,

particularly in relation to pragmatics and to the broader domain of social skill. Several areas for

the continued investigation of the foundations of social communication have been identified. The

continued investigation of the conceptual foundations of social communication is a worthwhile

pursuit. Indeed, "[t]here is little doubt that we are heavily dependent upon conversational skills"

(Brinton & Fujiki, 1989, p. 1). Social communication is an ability that distinguishes humans

from other species, and as such, is an integral contributor to human functioning. A deeper

understanding of social communication at the conceptual level should then lead to improved

clinical approaches, and thus to improvements in the functioning of children with social

communication deficits.

4.4 References

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Appendices

Appendix A: Ethics Approval

Western Research

Research Ethics

Use of Human Participants - Initial Ethics Approval Notice

Principal Investigator: Dr. Elizabeth Skarakis-Doyle
File Number: 104947
Review Level: Delegated
Protocol Title: Exploring the Conceptual Foundations of Social Communication
Department & Institution: Health Sciences, Western University
Sponsor:
Ethics Approval Date: February 11, 2014 **Expiry Date:** August 31, 2015

Documents Reviewed & Approved & Documents Received for Information:

Document Name	Comments	Version Date
Instruments	Study 1 Delphi webbased survey pdf version	2014/01/21
Instruments	Study 1 Delphi round 2 questons	2014/01/21
Instruments	Study 1 Delphi round 3 pdf version	2014/01/21
Instruments	Study 2 questionnaire pdf version	2014/01/21
Instruments	word document with live links to online surveys being used for both study 1 and 2	2014/01/21
Response to Board Recommendations	response to board recommendations document	2014/02/03
Revised Western University Protocol	Amendments to Western Protocol pdf version	2014/02/03
Response to Board Recommendations	response to recommended survey adjustment	2014/02/03
Revised Letter of Information & Consent	revised letter of information Study 1 track changes	2014/02/03
Recruitment Items	revised recruitment email Study 1 track changes	2014/02/03
Recruitment Items	revised recruitment email study 1 pdf	2014/02/03
Revised Letter of Information & Consent	revised LOI Study 2 track changes	2014/02/03
Recruitment Items	Recruitment flyer Study 2	2014/02/03
Recruitment Items	revised recruitment email Study 2 track changes	2014/02/03
Recruitment Items	revised recruitment email Study 2 pdf	2014/02/03

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above named research study on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussions related to, nor vote on, such studies when they are presented to the NMREB.

The Chair of the NMREB is Dr. Riley Hinson. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Ethics Officer to Contact for Further Information

Grace Kelly	Vikki Tran	Mina Mekhuil	Erika Basile

This is an official document. Please retain the original in your files.

Appendix B: Study 1 Recruitment email

Subject Line: Invitation to participate in research

You are being invited to participate in a study that we, Kristen Izaryk and Dr. Elizabeth Skarakis-Doyle, are conducting. Briefly, we are consulting a panel of "social communication experts" in an effort to achieve consensus on the essential features of social communication. We value your expertise in this area and believe your contributions will be invaluable to our study. We invite you to join this panel of experts by participating in our study, an iterative survey process.

The process includes a maximum of 4 questionnaires, each of which will attempt to clarify the essential features of social communication. You will receive a new questionnaire approximately once a month for a maximum of 4 months. Each questionnaire should take approximately 45 minutes to complete. In total, participation will require approximately 3 hours of your time. The questionnaires are completed online, and each questionnaire should be completed within 10-14 days of receiving the link. You can complete the questionnaire from anywhere you have Internet access.

More detailed information is provided in the attached letter of information. If you are interested in participating in this study, please respond to Kristen Izaryk at [email address] by no later than [10 days from date of contact].
Thank you,

Kristen Izaryk, Ph. D. Candidate
Graduate program in Health and Rehabilitation Sciences
Western University
[email address]
[phone number]

Elizabeth Skarakis-Doyle, Ph.D.
Professor
School of Communication Sciences and Disorders, Faculty of Health Sciences
Western University
[email address]
[phone number]

Appendix C: Study 1 Letter of Information

Letter of Information
The Conceptual Foundations of Social Communication: Study 1
Kristen Izaryk, Ph. D. Candidate, Elizabeth Skarakis-Doyle, Ph.D.

Effective social communication is a key contributor to a child's social functioning, and as such, it is the common goal of Speech-Language Pathologists to improve a child's social communication. However, the conceptual foundations of social communication in the field of Speech-Language Pathology are unclear. There is little consensus on what children's social communication entails and how it is different from pragmatics; thus, current social communication assessments vary in their content and coverage of this construct. In order to inform future research and improve clinical assessment and intervention for social communication disorders, it is necessary to understand the conceptual foundations of social communication.

What is the purpose of the study?
The purpose of this study is to explore and understand the essential features of social communication and its relation to pragmatics by surveying experts in the field. The Delphi technique, an iterative survey method that serves to attain consensus, will be employed.

What will be required of you?
If you agree to participate in this study, you will be asked to participate in the survey at a maximum of **four time periods:**

At **Time 1:** You will complete Round 1 of the survey process. A link to the questionnaire will be emailed to you. Upon accessing the questionnaire, you will be asked to respond, in writing, to two questions: the first pertaining to the essential features of social communication, the second pertaining to the similarities and differences of the terms 'pragmatics' and 'social communication'. This should take approximately **45 minutes** to complete.

At **Time 2:** Approximately 10 to 14 days after completing Round 1, you will be emailed a link to Round 2 of the survey. Your responses and those of other participants will be collated and summarized. Your responses will remain anonymous to other participants. From this list of collated key features, you will be asked to identify those that are core and peripheral to social communication. You will be asked to comment on the results or ask for clarification on any concepts. This should take approximately **45 minutes** to complete.

At **Time 3:** Approximately 10 to 14 days after completing Round 2, you will be emailed a link to Round 3 of the survey. As in Round 2, your responses and those of other participants will be collated, summarized, and kept anonymous. You will be asked to provide comments on the results of Round 2. This should take approximately **45 minutes** to complete.

At **Time 4:** If necessary, you may be contacted a fourth time to obtain clarification on any areas where a need for clarification persists. If necessary, this stage should take no more than **45 minutes** to complete.

If you have not completed a round within 10 days of receiving the survey link, you will receive **one** reminder email. If the round is not completed within 14 days of receiving the link, it will be assumed that you have withdrawn from the study and you will **not** receive a link for the subsequent round.

You may ask questions about survey at any time. Participation is completely voluntary. You may refuse to participate or withdraw from the study at any time. Any information collected while participating in the study will be used even if you should choose to withdraw prior to the end of the study. There are no known risks or discomforts associated with this study.

You will not benefit personally from participating in the study. Your participation may help us learn more about the key concepts underlying social communication, thus informing future research and clinical practice.

Where will the study take place?
You can complete all stages of this study in the comfort of your own home, office, or any location at which you have Internet access.

What will be done with the information obtained?
Only researchers here at Western University will have access to the information obtained in this study. Should publications or presentations result from the study, only group data will be reported. With your permission, your name will be included in the acknowledgements section of any publications or presentations so that your contributions can be recognized. Following completion of the study, encrypted computer files will be kept on a local university hard drive for a period of five years at which time they will be destroyed.

What if you have questions that haven't been answered here?
Please contact Kristen Izaryk at [email address] Your email will be responded to promptly. If you have any questions about the conduct of this study or your rights as a participant you may contact the Office of Research Ethics, Western University at [phone number].

Thank you for considering our study.

Kristen Izaryk, Ph.D. Candidate
Graduate Program in Rehabilitation Sciences
Western University

Elizabeth Skarakis-Doyle, Ph.D.
Professor
School of Communication Sciences and Disorders, Faculty of Health Sciences
Western University

Appendix D: Study 2 Recruitment email

Subject Line: Invitation to participate in research

Thank you for your interest in participating in the study that we, Kristen Izaryk and Dr. Elizabeth Skarakis-Doyle (Principal Investigator), are conducting.

Briefly, the study involves the completion of an online questionnaire that will help to delineate social communication from more general social skills. Specifically, we are looking for participants who are trained Speech-Language Pathologists with experience working with social communication skills of preschool and school-aged children.

You will participate anonymously. The questionnaire is completed online and should take no more than one hour. It can be completed anywhere you have access to the Internet. By completing the questionnaire, you are consenting to participate in the study.

If you meet the above criteria and would like to participate in this study, please click on the link below to access the letter of information and the online questionnaire. While this link may ***not*** be posted to organization or institutional message boards, bulletin boards, etc., if you have any interested and eligible colleagues who may be interested in participating, you may forward this link to them.

If you have any questions, please do not hesitate to contact Kristen Izaryk at [email address] or Elizabeth Skarakis-Doyle at [email address]

Click here to complete the survey, or copy and paste the following link into your web browser: [survey link]

Thank you,

Kristen Izaryk, Ph. D. Candidate
Graduate program in Health and Rehabilitation Sciences
Western University
[email address]
[phone number]

Elizabeth Skarakis-Doyle, Ph.D.
Professor, Principal Investigator
School of Communication Sciences and Disorders, Faculty of Health Sciences
Western University
[email address]
[phone number]

Appendix E: Study 2 Recruitment Flyer

<u>The Conceptual Foundations of Social Communication</u>
Kristen Izaryk, Ph. D. Candidate; and Elizabeth Skarakis-Doyle, Ph. D. (P. I.)

We are seeking **SLPs'** participation in an **online Social Communication questionnaire**!

- Social communication and social skills contribute to school success

- The overlap between social communication and more general social skills obscures professional boundaries

- The **purpose of this study** is to clarify the role of social communication in social skill development

We are inviting **SLPs** to participate in an **online questionnaire** that aims to identify social communication behaviours from a larger pool of social skills. Your participation will help inform issues related to professional scope of practice.

If you and/or a colleague are interested in knowing more about this study, please contact Kristen Izaryk at [email address] or Elizabeth Skarakis-Doyle at [email address].

If you and/or a colleague wish to participate, please visit the following link to read the Letter of Information and complete the questionnaire: [Survey link]
This flyer may not be posted to any newsletters, public message boards, bulletin boards.

Appendix F: Study 2 Recruitment posting for message board

Subject Line: Invitation to participate in social communication research

We are recruiting speech-language pathologists with experience working with the social communication skills of preschool and school-aged children. We are interested in the role of social communication in the domain of social skills.

The study involves the completion of an online questionnaire. You are asked to rate 56 prosocial skills according to their representativeness of social communication. The questionnaire should take **15 to 20 minutes to complete.** You will participate anonymously. It can be completed anywhere you have access to the Internet. By completing the questionnaire, you are consenting to participate in the study.

If you meet the above criteria and would like to participate in this study, please click on the link below to access the letter of information and the online questionnaire. While this link may ***not*** be posted to any ***other*** organization or institutional message boards, bulletin boards, etc., if you have any eligible colleagues who may be interested in participating, we would appreciate you forwarding this link to them.

If you have any questions, please do not hesitate to contact Kristen Izaryk at [email address] or Elizabeth Skarakis-Doyle at [email address].

Click here to complete the survey, or copy and paste the following link into your web browser: [survey link]

Thank you for your consideration,

Kristen Izaryk, Ph. D. Candidate
Graduate program in Health and Rehabilitation Sciences
Western University
[email address]
[phone number]

Elizabeth Skarakis-Doyle, Ph.D.
Professor, Principal Investigator
School of Communication Sciences and Disorders, Faculty of Health Sciences
Western University
[email address]
[phone number]

Appendix G: Study 2 Letter of Information

<u>Letter of Information</u>
The Conceptual Foundations of Social Communication: Study 2
Kristen Izaryk, Ph. D. Candidate, Elizabeth Skarakis-Doyle, Ph.D. (Principal Investigator)

Effective social communication is a key contributor to a child's social functioning, and as such, it is the common goal of Speech-Language Pathologists to improve a child's social communication. However, a recent systematic review has highlighted a lack of consensus regarding children's social communication disorders. Social communication skills (e.g., participating in family/classroom discussions) are embedded within the broader domain of social skill (e.g., sitting quietly during class). As such, it has been recommended that school personnel target children's social skill development prior to and throughout the early school years. Surprisingly, the contribution of social communication in the broader conceptual domain of social skill is not overtly recognized. Thus, although it is tacitly acknowledged that social communication is integral to social skills development, its exact role is unclear.

What is the purpose of the study?
The purpose of this study is to delineate social communication from the domain of social skill, using a list of children's social behaviours commonly identified in social skill checklists.

What will be required of you?
You will be asked to complete an online questionnaire. By completing the questionnaire you are consenting to participate. Your identity will remain anonymous; however, you will be asked to report your country and your years of clinical experience. We will use this information only to provide a description of our participants as a group.

You will be provided with a definition of social communication. You will be asked to judge how well each survey item matches this definition by marking a point anywhere along a scale anchored with the terms "Fully representative of social communication" and "Not at all representative of social communication". You are given an opportunity to leave comments at the end of the survey. The entire survey should take **15 to 20 minutes** to complete.

You may ask questions about the survey at any time. Participation is completely voluntary. You may refuse to participate or withdraw from the study at any time. Any information collected while participating in the study will be used even if you should choose to withdraw prior to the end of the study. There are no known risks or discomforts associated with this study.

You will not benefit personally from participating in the study. Your participation may help us learn more about relationship between social communication and social skill, thus informing future research and clinical practice.

Where will the study take place?
You can complete this survey in the comfort of your own home, office, or any location at which you have Internet access.

What will be done with the information obtained?
Only researchers identified in this letter of information will have access to the information obtained in this study. Should publications or presentations result from the study, only group data will be reported. Following completion of the study, encrypted computer files will be kept on a local university hard drive for a period of five years at which time they will be destroyed.

What if you have questions that haven't been answered here?
Please contact Kristen Izaryk at [email address] or Elizabeth Skarakis-Doyle at [email address]. Your email will be responded to promptly. If you have any questions about the conduct of this study or your rights as a participant you may contact the Office of Research Ethics, Western University at [phone number].

Thank you for considering our study.

Kristen Izaryk, Ph.D. Candidate
Graduate Program in Rehabilitation Sciences
Western University

Elizabeth Skarakis-Doyle, Ph.D.
Professor, Principal Investigator
School of Communication Sciences and Disorders, Faculty of Health Sciences
Western University
[email address]
[phone number]

Curriculum Vitae

Name: Kristen H. R. Izaryk

Post-secondary   Carleton University
Education and   Ottawa, Ontario, Canada
Degrees: 2003-2008 B.A.

The University of Western Ontario
London, Ontario, Canada
2009-2011 M.A.

The University of Western Ontario
London, Ontario, Canada
2011-2015 Ph.D.

Honours and   National Institutes of Health Travel Award
Awards: Symposium on Research in Child Language Disorders
2012-2015

Best Poster Award
Health and Rehabilitation Sciences Research Forum
2012

Graduate Student Teaching Award
Society of Graduate Students and Graduate Teaching Assistant Union
2010

Related Work   Teaching Assistant
Experience   The University of Western Ontario
2009-2014

Part-time Instructor
The University of Western Ontario
2012

Research Assistant
The University of Western Ontario
2010-2014

Publications:
Skarakis-Doyle, E., Izaryk, K., Campbell, W., & Terry, A. (2014). Preschoolers' sensitivity to the maxims of the Cooperative Principle: Scaffolds and developmental trends. *Discourse Processes, 51*, 333-356. doi: 10.1080/0163853X.2013.867196

Bornbaum, C. C., Day, A. M. B., Izaryk, K., Morrison, S. J., Ravenek, M. J., Sleeth, L. E., & Skarakis-Doyle, E. (2014). Exploring the use of the ICF in health education. *Disability & Rehabilitation*, *37*, 179-186. doi:10.3109/09638288.2014.910558

Manuscripts in preparation:
Izaryk, K., Skarakis-Doyle, E., Campbell, W., & Kertoy, M. (in press). Social communication functioning: An evaluation of current assessment tools through the lens of the *ICF-CY*.

Related Conference Presentations:
Izaryk, K. & Skarakis-Doyle, E. (2015, June). Social communication and social skills: An investigation of boundaries. Poster presented at the Symposium on Research in Child Language Disorders, Madison, WI.

Izaryk, K., Skarakis-Doyle, E., Kertoy, M., & Lau, C. (2014, June). The role of social communication in adjustment to school. Poster presented at the Symposium on Research in Child Language Disorders, Madison, WI.

Doyle, P., Nash, M., Cox, S., Davis, E., Izaryk, K., Bornbaum, … & Skarakis-Doyle, E. (2014, May). Aligning the Voice-Related Quality of Life Measure with the ICF: An examination of voice disability secondary to laryngeal cancer. Poster presented at the Pacific Rim International Conference on Disability and Diversity, Honolulu, HI.

Izaryk, K., Campbell, W., & Skarakis-Doyle, E. (2013, October). The role of social communication in the domain of social skills. Poster presented at Energized By Excellence, College of Audiologists and Speech-Language Pathologists/Ontario Association of Speech-Language Pathologists and Audiologists, Toronto, ON.

Izaryk, K., Campbell, W., & Skarakis-Doyle, E. (2013, June). The role of social communication in the domain of social skills. Poster presented at the Symposium on Research in Child Language Disorders, Madison, WI.

Izaryk, K., Skarakis-Doyle, E., & McKee, R. (2012, June). Exploring the sources of young children's pragmatic understanding. Poster presented at the Symposium on Research in Child Language Disorders, Madison, WI.

Izaryk, K., Skarakis-Doyle, E., & McKee, R. (2012, February). Exploring the sources of young children's pragmatic understanding. Poster presented at the Health and Rehabilitation Sciences Research Forum, London, ON.

Izaryk, K., McKee, R., & Skarakis-Doyle, E. (2011, February). Probing the source of young children's pragmatic judgments: A pilot study. Poster presented at the Northwest Linguistics Conference, Victoria, BC.

Izaryk, K. (2010, December). Probing the source of young children's pragmatic judgments. Paper presented at the Bilingual Workshop on Theoretical Linguistics, Toronto, ON.

Related Professional Presentations:
Izaryk, K. (2015, May). Topics in children's social communication. Presentation to the Upper
Canada District School Board – Speech-Language Pathology team and School Psychology team.
Ottawa, ON. May 22, 2015.