INTENTIONAL AND UNINTENTIONAL INJURIES: AN ANALYSIS OF CHILD AND YOUTH INJURIES AS BODY, MIND, AND CONTEXT FOR THE DETERMINATION OF INTENT

by

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Abstract

This study involved the analysis of child and youth injury-event descriptions that were provided by adult[1] household members to the USA's[2] National Health Interview Survey (NHIS) during 2006-2010. The goal was to see if and how injury-events were described differently by injury-event type (intentional vs. unintentional) and point-of-view (parent vs. non-parent) based on linguistic features, and to note whether such features were an expression of experiential and interpersonal processes from the physical, psychological, or contextual[3] domains. The linguistic analyses also included a query of proxy estimates of deceit to allow for the tracing of potential covert mentions of awareness intent. Findings from this study indicated that the language-use patterns for intentional injury-event descriptions included greater linguistic detail that set them apart from other types of injury-event descriptions, including unintentional, and were more similar to non-parent provided injury-event descriptions. The same was the case for the trialed proxy estimates of deceit. The utility of identifying language-use patterns provides added means to inform the eventual development of a supplementary intentional injury query rubric for use by helping professionals –alongside their existing practice– in disciplines that have an intentional injury intervention and prevention mandate. It is anticipated that the proposed linguistic method of inquiry will contribute to filling the knowledge gap noted in the intentional maltreatment injury (IMI) literature concerning the need to make more accurate the complex process of determination of intent when children and youths present with an intentional injury that is not visibly obvious or severe, and the injury-event is described as if it was unintentional.

[1] NHIS reporting criterion; The age of majority in most USA states is 18-years-old, but is 19-years-old in Alabama and Nebraska, and 21-years-old in Mississippi.

[2] Comparable Canadian data were not available at the time this research was undertaken (i.e., data from the Public Health Agency of Canada's Canadian Hospitals Injury Reporting and Prevention Program [CHIRPP]) due to an internal review of the program by data collection sites.

[3] The term 'contextual' was understood to comprise processes that include the social context and the material context (see Figure 1).

Lay Summary

The identification of intentional injuries, including intentional maltreatment injuries, in children and youths is a recognized challenge in the helping professions. This is because intentional injuries can look like unintentional injuries, and when their corresponding injury-event is described as if it was unintentional the injury may be misclassified as unintentional. In such instances, the opportunity to prevent further injury may be missed and the opportunity may not resurface until the injury is visibly severe. For these reasons, novel means of supplementing existing intentional injury identification practice to make it more accurate are called for. Regarding prevention, it is anticipated that the proposed linguistic method offered in this thesis will contribute to a better understanding of how to distinguish between injury-event descriptions that are intentional from those that are not, even when an injury does not look like it is intentional and its injury-event is described as if it was unintentional.

Preface

This thesis is the original, unpublished, and independent research by the author, Jessica P. Flores de la Parra, that was prepared with the guidance of the supervisor and thesis committee. This study did not require ethics approval from The University of British Columbia's Behavioural Research Ethics Board (BREB), as confirmed by the BREB, because the data used in this work are publicly available in anonymized format without access restrictions.

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Acronyms and Initialisms

Acronym/ Initialism	Acronym/Initialism Spelled-out	Description
APA	American Psychological Association	APA's mission is to advance the creation, communication and application of psychological knowledge to benefit society and improve people's lives.[a]
CAPI	Computer-assisted Personal Interviewing	NHIS's computer assisted personal interviewing method.
CDC	Centers for Disease Control and Prevention	USA's CDC. The CDC is the leading national public health institute of the USA and is a federal agency under the Department of Health and Human Services.[b]
CHIRPP	Canadian Hospitals Injury Reporting and Prevention Program	CHIRPP is an injury and poisoning surveillance system that is used to collect data for people who are attended to in 17 participating Canadian hospital Emergency Departments: 11 pediatric and six general.[c]
DPF	Discourse Pattern Function	This study's Analysis 2: Linguistic analysis technique based on discourse analysis (Asp & de Villiers, 2010) and functional grammar (Halliday & Matthiessen, 2014).
DoI	Dissimulation of Intent	An estimate of dissimulation of intent that is comprised of five qualified proxy variables:[d] (i) more Tense Shift, (ii) more Nominalization, (iii) more Ergative Verbs, (iv) less Focus, and (v) less Prominence; Associated with the DPF.
E-code/ ECODE	External Cause Code	E-code: ICD-9-CM's External cause of injury code. External cause is also 'mechanism of injury' and the codes are in the Supplemental Classification;[e] ECODE: NHIS's variable for the ICD-9-CM's E-codes (NHIS uses both).
FG	Functional Grammar	Functional grammar (FG) is a framework of grammar description originated by Michael Halliday (e.g., Halliday & Matthiessen, 2014). It is part of a social semiotic theory/approach to language called Systemic Functional Linguistics - a theory of language that is oriented to the description of how language makes meaning in context.[f]
ICD-9-CM	International Classification of Disease, Ninth Edition, Clinical Modification	The ICD-9-CM is based on the WHO's ICD-9. The ICD-9-CM is the official system of assigning codes to diagnoses and procedures associated with hospital utilization in the USA.[g] The aim is coding standardization to enable comparability across data sets worldwide.
IFALLWHY	If Fall Why	An NHIS variable from the Injury/Poisoning Episode file that is labelled 'cause of fall'.
IMI	Intentional Maltreatment Injury	An intentional injury sustained by a child/youth at the hands of a parent and can include physical abuse, sexual abuse, emotional/psychological abuse, and neglect.
LIWC	Linguistic Inquiry and Word Count	LIWC word parsing software that reads a given text and counts the percentage of words that reflect different emotions, thinking styles, social concerns, and parts of speech.[h] In this study, the LIWC 2007 version was used.

(continued)

Acronyms and initialisms, continued.

Acronym/ Initialism	Acronym/Initialism Spelled-out	Description
LoD	Likelihood of Deceit	An estimate for the likelihood of deceit that is comprised of five qualified proxy variables:[i] (i) fewer Personal Pronouns, (ii) fewer Exclusive words, (iii) more Negative Emotion words, (iv) more Motion words, and (v) more Cognitive Mechanisms words; Associated with the WTC.
MR (MR_I, MR_U, MR_A; MR_P, MR_{NP})	Mean Rank ($MR_{Intentional}$, $MR_{Unintentional}$, $MR_{Ambiguous}$; MR_{Parent}, $MR_{Non\text{-}parent}$)	MR is the abbreviation used to indicate a dependent variable's mean rank per level of the study's two independent variables: Injury-event Type (Intentional, Unintentional, Ambiguous) and Point-of-view (Parent, Non-parent)
NHIS	National Health Interview Survey	The USA's NHIS is an annual, cross-sectional household in-person survey. It provides nationally representative estimates on health status and utilization measures for the non-military and non-institutionalized population[j] and provides data for analyzing health trends and tracking progress toward achieving national health objectives.[k]
PHAC	Public Health Agency of Canada	The PHAC is a Canadian Federal Government Agency that aims to promote and protect the health of Canadians through leadership, partnership, innovation, and action in public health.[l]
SI	Symbolic Interactionism	Manford H. Kuhn's conceptualization of SI, where experiential phenomena can be measured empirically vs. not.
SPSS	Statistical Package for the Social Sciences	Statistical analysis software package, Grad-pack 23.
USA	United States of America	The USA's 50 States and District of Columbia.
WTC	Word-type Count	This study's Analysis 1: Linguistic analysis technique based on the LIWC (2007) word-type dimensions.
WHO	World Health Organization	The WHO is a specialized agency of the United Nations that is concerned with international public health (e.g., health systems, promoting health throughout the life-course, preparedness, surveillance, and response).[m]

Notes. Sources:

[a] http://www.apa.org/about/index.aspx

[b] http://www.cdc.gov/nchs/nhis/about_nhis.htm

[c] http://www.phac-aspc.gc.ca/injury-bles/chirpp/index-eng.php

[d] The names, operationalization, and qualification for variables (i) through (v) were informed by Asp and de Villiers (2010).

[e] http://www.cdc.gov/nchs/injury/injury_matrices.htm#external_codes

[f] http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199544004.001.0001/oxfordhb-9780199544004-e-031

[g] http://www.cdc.gov/nchs/icd/icd9cm.htm

[h] http://liwc.wpengine.com/how-it-works/

[i] The variable names (i) through (v) are from Newman et al, (2003); however, their operationalization and qualification was informed as follows: variables (i) through (iv) by Newman et al. (2003), and variable (v) by DePaulo et al. (2003).

[j] https://www.cdc.gov/nchs/nhis/about_nhis.htm

[k] http://www.cdc.gov/nchs/data/factsheets/factsheet_nhis.htm

[l] http://www.phac-aspc.gc.ca/about_apropos/index-eng.php

[m] http://www.who.int/about/what-we-do/en/

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"In all dimensions, physical, social-emotional, language and cognitive development, the early years are crucial for health, wellbeing, learning, and behaviour thereafter."
In memoriam, Dr. Clyde Hertzman

"You deserve to be treated with dignity and respect."
In memoriam, Peter Elifasi Wanyenya

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CHAPTER 1. Introduction

The area of child and youth injury prevention draws the attention of varied disciplines and groups. For example, it is an important area for pediatricians, educators, and health research scientists; from fields in industry, such as manufacturers of car seats, cars, and playground equipment; as well as from government bodies that develop policy and legislation on what is or is not a safe material, design, or use of a particular item. Not surprisingly, professionals in each field focus on an aspect associated with injuries that reflects the interests of their specialty area and the nature of their professional role in the social institution they practice in. Relatedly, the focus of each discipline can vary in scope and range such that the focus can be on the injury in and of itself, the injury and its health and function outcomes, or the prevention of injury.

As focus informs the scope and range of interest, it delimits which injury process features are addressed. Continuing with the example provided above, it is generally the case that it is pediatricians that focus on the biological/physical domain, and educators and government that look at the context domain to address injury outcomes as well as a reduction of injuries in the locales associated with their respective population of interest. It is the health science researchers and industry that are more likely to broaden the range and scope of their inquiry focus into the psychological and social domains of injury phenomena at the individual level[4] (Bronfenbrenner 1979a; 1979b). This is likely due to their interest in knowing what happens and what the events leading up to the injury-event and after the injury outcome look like in order to inform how to better recognize similar future incidents and, therefore, prevent them.

However, there is a difference in the scope and range in focus among researchers whose work takes place at the individual level and health science researchers who focus on the

[4] The individual level refers to the level where one-to-one and sometimes one-to-two or three person (Bronfenbrenner, 1979a; 1979b) interactions take place vs. the population level where social and economic phenomena and trends for the population as a whole (e.g., Canada-wide) are observed.

population level and industry. The difference is method (individual vs. population) and the difference between the researchers and industry is motive. Industry tends to use and track data trends across time that are typically generated by researchers, and in some cases, industry itself. Industry's goal for using such data is likely related to their objective to remain competitive with assuring statements about industry standard endorsements that confirm their product is safe. In the case of the health science researchers who generate the population level data that are typically used by industry, their goal can be to contribute to the reduction of the overall burden of injury and economic cost of injuries. In contrast, the health science researchers who focus on the individual level identify and account for the interpersonal relational data that are associated with injury outcomes –the outcomes which population level researchers use for their summary results (e.g., team sports concussion rate, teen suicide rate, child and youth maltreatment incidence and prevalence rates, academic failure or delay rates, and the economic prospects of injury disabled [physically and/or psychologically] children and youth rates; Health Canada, 2004; PHAC, 2010; 2015; Statistics Canada, 2017a; 2017b).

The difference in focus among health science researchers (individual level vs. population level) can be beneficial to the injury prevention field as a whole. The benefit can be described in at least three ways in the case of population level data. Population level data can inform all who are interested in the magnitude of the problems that are associated with the toll of injuries on humanity, provide justification for work on injury prevention because of the magnitude of the human and economic burden of injury, and present information about the problem of the burden of injury in a scale and format that can get the attention of government swiftly (e.g., legislators and policy makers) (see Figure 1). For example, on a world-wide scale, the World Health Organization (WHO) noted that violence (intentional injuries) and injuries (unintentional

injuries) are one of "the world's leading health challenges" and "threat to health" where the threat results in "five million deaths and millions of injuries" every year for all ages (WHO, 2008, p. 3), and one death every six seconds (WHO, 2014b). Specific to child and youth[5] deaths the count is listed as nearing 900,000 a year, and of that count, injuries are characterized as having just over half (53%) of the 15 leading causes of death for 15- to 29-year-olds listed as being violence or injury related (WHO, 2008).

The population level data summaries listed here highlight the human and economic cost of intentional and unintentional injuries in a context that is more closely related to the data used in this study. For example, for all ages in the USA each year 192,900 people die, nearly one person dies each minute, and cost more than 671 billion dollars in medical care and lost productivity (Centers for Disease Control and Prevention [CDC], 2017a). For children and youths in the USA in 2005, for each injury death 25 were hospitalized, 925 were treated in an Emergency Room, and "many more" were treated in a physician's office (CDC, 2009). In Canada, a Public Health Agency of Canada (PHAC) supported 2015 injury report, indicated that for all ages in 2010, 16,000 people died, nearly seven people died each minute, and cost 26.8 billion dollars. For children and youths in Canada, the data follow in the Literature Review section.

While these examples of USA and Canadian population level data summaries provide an informative broad outline of injury counts and how such counts can translate into sizeable economic costs, they do not provide sufficiently specific data on what constitutes intentional or unintentional injury-events as the first consideration for the purpose of preventing the individual-level behaviours that are associated with injury-events and their respective injury outcomes. The

[5] The age-range for youth for this study was defined as 13-18-years-old.

professed usefulness of individual-level data specific to its potential to inform injury prevention efforts rests primarily on its better ability to account for interactional data as enacted social processes (e.g., child/youth-parent, child/youth-non-parent dyads) (Overton, 2006; Bronfenbrenner, 1979a; 1979b) in social contextual systems (see Figure 2). With such social processes data, inferring the probability of a future social event could then be considered a more tenable proposition. This is especially the case when social processes data are considered from a person-centered standpoint (e.g., constitutive) with a variable-centered standpoint (e.g., additive) – as tends to be the case with individual level data – rather than from a variable-centered standpoint only (Overton, 2006) – as tends to be the case with population level data.

The current study focused on individual-level data. As such, consideration was given to the three aspects of an injury-event: the injury, the injury and its outcomes, and the prevention of the injury. This is in addition to the practical interest in the relational aspect of enacted social processes; such as, the psychological, social, and contextual processes that can lead to an injury outcome as a fourth and key aspect of injury phenomena. Specifically, the data used in this project were gathered in the context of the reporting of an injury-event to the USA government. The data were collected with the National Health Interview Survey (NHIS) during a face-to-face[6] interaction with a NHIS field representative (data collection agent). In this context, at minimum, three relational events were considered to have been expressed contiguously in the studied NHIS injury-event description data, all of which took place at the individual level during the interview. The three posited relational events were how an injury-event was reported by the injured child/youth's parent or non-parent to the NHIS field representative, the interpretation of the injury-event by the NHIS field representative, and the deliberation made by the NHIS field

[6] NHIS interviews take place face-to-face unless weather conditions make travel unsafe for the field representatives, or if the participant declines a face-to-face interview. In such an event, the alternate means of contact would be by telephone (CDC, 2010).

representative on what text-data to type into the computer-based survey (the data collection tool) that would yield a representative transcription of the injury-event description provided to them in response to the open-ended question on how the injury happened.

Of note is that such a reporting and recording process is similar to the type of reporting and recording process context in which professionals in different disciplines collect and transcribe data during a medical or a case consultation. When helping professionals attend to a child/youth's injury they produce its respective injury-event description in the form of case notes (e.g., pediatricians), or notate the injury-event description for investigation and subsequent substantiation (e.g., educators, Child Welfare Services, Police). Notably, these types of transcriptions are referred to in current practice by professionals who seek to inform their decision-making processes with case detail. For example, when making a diagnosis, arriving at a determination of intent, or assigning a suspected intentional maltreatment[7] injury case a 'substantiated' designation (Christian, 2015; Jackson & Jackson, 2011; PHAC, 2010). Additionally, the transcriptions are used by researchers whose work is referenced by government for the purpose of drawing legislation and policy (PHAC, 2010).

Specific to this study, the text-data from the NHIS injury-event descriptions were used to compare the linguistic features of the injury-events by type (e.g., intentional, unintentional, and ambiguous[8] –a third category that emerged during the coding of the text-data –described below) and point-of-view (parent provided and non-parent provided)[9] to see what linguistic features were more likely to be associated with one type of injury versus another, and one type of point-

[7] Intentional maltreatment injuries (IMIs) include physical abuse, sexual abuse, emotional/psychological abuse, and neglect; IMIs can co-occur (e.g., sexual abuse can co-occur with physical abuse and neglect, while sexual abuse, physical abuse, and neglect include psychological abuse) (PHAC, 2010).

[8] Ambiguous is operationalized here as ambiguous interaction roles (e.g., 'She broke her arm' where it is ambiguous who the person referred to by 'she' was (e.g., a sister, mom, friend, or the injured).

[9] NHIS data protocols describe parent as a household adult that is in one of the categories biological/adoptive/in-law/step/foster; Non-parent in this study, then, is a household adult outside such a defined parent role (e.g., grandparent, uncle, other nonrelative).

of-view versus the other. The aim was to demonstrate a method that can inform the eventual development of a supplementary injury type identification tool for use by helping professionals alongside their existing practice. Such a supplementary tool, or rubric, for injury-event type identification case processing would be relevant in disciplines that have an intentional injury intervention and prevention mandate.

On the accrual of data, the process followed in the present study offers a viable approach that is inclusive of the challenges that are associated with making use of existing secondary data resources designed for other purposes, such as surveillance, rather than for secondary prevention. On exploring the utility of the NHIS injury-event text-data, while the primary, long-term objective of this work was to keep the aim to contribute to the effective identification of injury intent in the context of intentional maltreatment injuries (IMIs), the data reported here were for a comparison made between intentional, unintentional, and ambiguous injuries, where the intentional category was comprised of three types of intentional injury: (a) parent-inflicted injury (intentional maltreatment injuries [IMIs]), (b) non-parent inflicted injury (same/different age-group other person), and (c) self-inflicted injury (with or without the intent to kill oneself). As such, an overarching goal of the current study was to see if the awareness of intent could be characterized by the language in the injury-event descriptions. A second goal was to see if two proxy measures for the estimate of deceit could provide some insight into whether linguistic features associated with deceit (Newman, Pennebaker, Berry, & Richards, 2003; DePaulo et al., 2003) from a variable-centered standpoint, and language-use features associated with the foregrounding, backgrounding, or omission of agency and intent (Asp & de Villiers, 2010) from a person-centered standpoint, were more likely to be associated with one injury-event type than others, and with one point-of-view over another.

The effort made here to accrue language-use base data from the injury-event descriptions would not be practically useful, however, if discussed outside the context of this work's long-term objective which is to support helping professionals in their efforts to identify and prevent intentional maltreatment injuries (IMIs). For this reason, methods that can help to distinguish between intentional and unintentional injury-event descriptions that retain IMIs in the study of the broader area of intentional injuries for the purpose of distinguishing IMIs specifically need to be developed. Additionally, a method is also needed to clarify if ambiguous injury-event descriptions are more like intentional injury-event descriptions or unintentional injury-event descriptions in order to know if the ambiguous injury-event description category in question is more likely to signify for helping a professional an IMI or a non-IMI. These goals inform the subsequent literature review.

The literature review starts with a note on the current criterion for distinguishing between intentional and unintentional injuries. The importance of making such a distinction is nested in a population level data summary that illustrates the magnitude of the burden of IMIs on children and youths in Canada. The summary is presented by intentional injury categories, (a) IMIs, (b) non-parent inflicted, and (c) self-inflicted, as a way of providing a rationale for striking the path taken in this thesis, and to situate the thesis within the broader field of injury prevention. Specific attention is then given to the direct and measurable negative impact of intentional injuries specific to IMIs on children and youths' academic achievement, social-emotional competence, and health as indexed by documented functioning concerns. The summary is then followed by a description of the selected linguistic analysis techniques, methodology, data, and analyses and results sections. The final section highlights the potential implications and future directions of this work.

CHAPTER 2. Literature Review

2.1 Rationale

Non-parent inflicted injuries, tend to take place in contexts where civic institutions have a jurisdictional mandate to intervene and as a result, injured children and youths can be protected and supported more straightforwardly than when a child/youth is injured as a result of an assault at home by a parent. In contrast, in the case of such intentional parent inflicted maltreatment injuries (IMIs), protocols and policies to intervene and prevent further injury only become available to a child/youth when someone asks. It is therefore important that when people do ask for help, that they are supported with swift and effective intentional injury identification methods. This is especially so in Canada, because an injury intent designation from a helping professional (e.g., physician) is often required to activate support from civic institutions.

Intentional injuries from a population level view. To place this work on intentional child/youth injury in a conceptual quadrant from the broad inquiry area that is 'injury prevention', a descriptive population level summary of the magnitude of the estimated burden of the three intentional injury categories, (a) intentional parent inflicted [IMIs], (b) intentional other-person inflicted, and (c) intentional self-inflicted, for the USA and Canada follows. In and of itself, this population level summary highlights the urgent need for the design of innovative intentional injury identification methods that can be articulated at the individual level (see next section) to supplement current intentional injury identification and prevention practice and intervention efforts that are made by professionals in helping roles.

For intentional maltreatment injuries (IMIs, parent inflicted), the CDC (2017c) highlighted that in the USA in 2015 for children and youths 18-years-old and under, 683,000 abuse and neglect reports were made to Child Protection Services, out of which 24% were for

infants less than one-year-old; and 1,670 died. It was noted in the same CDC report that the total lifetime cost of child and youth maltreatment in the USA is 124 billion dollars. In another data summary, the CDC (2016a) included self-report data to highlight that about one out of seven children and youths in the USA experienced abuse and neglect in the previous year representing millions of children.

For Canada, the PHAC (2010) listed frequencies and rates for case year 2008 as a frequency of 235,842 and a rate of 39.2 per 1,000 for children and youths 15-years-old and under as reported for maltreatment to Child Welfare Services. Of these, 85,440 (14.19, 36%)[10] were substantiated; children under one-year of age were the most likely to be investigated at a rate of 52.0 per 1,000; in the role of primary caregiver, the top three categories included biological mothers as the abuser 86% (12.17, *n* = 73,303) of the time, while biological fathers represented a much smaller proportion in such a category 8% (1.20, *n* = 7,256), followed by a grandparent 2% (0.34, *n* = 2,032). A data summary of maltreatment fatalities that was prepared with data from a 2010 PHAC report showed that the average number of deaths was 35 per year for those under the age of 13 that fluctuated from a high of 56 in 1978 to a low of 13 in 2005 (Wegner-Lohin & Trocmé, n.d.).

For non-parent inflicted injuries, the CDC (2016b) estimated that, on a daily basis, among children and youths in the USA aged 10- to 24-years-old, there are 12 homicide deaths and 1,374 treatments in an emergency department. In Canada, youth aged 12- to 24-years-old represented 54% of the total number of youth killed by youth aged 12- to 17-years-old compared to 27% of homicides committed by adults in 2003 (Statistics Canada, 2003). In a later report, Statistics

[10] For the 2008 case data, the PHAC report (2010) conflated the number of substantiated cases and the number of at-risk for future harm cases into their total reported cases in the table labeled "Substantiation Decisions in Canada in 1998, 2003, and 2008"; this means the 85,400 substantiated cases with the rate of 14.19 and a percent of total of 36% was drawn from the reported "Total substantiated maltreatment and risk of future maltreatment" figures that were 97,458, 16.19, and 41%.

Canada (2014) highlighted that for youth 14- to 19-years-old the rate of violent victimization they suffered was nearly 160 out of 1,000 population, compared to 20- to 24-years-olds, the age-range associated with the highest rate of victimization in 2014, at approximately 170 out of 1,000 population.

For self-inflicted injuries, the CDC (2015) reported suicide deaths as the second leading cause of death for youth in the USA aged 15- to 24-years-old. Canadian data from the PHAC (2016), also listed suicide as the second leading cause of death for children and youths, but in this case the data referred to a younger age-group, specifically those aged 10- to 19-years old. This is in contrast to suicide being the ninth leading cause of death for all ages in Canada. The same report noted that 72% of self-harm hospitalizations were recorded for females. In the case of males, they represented higher numbers than females for completed suicides: (a) 41% for 10- to 14-year-olds, and (b) 70% for 15- to 19-year-olds. Statistics Canada (2017a; 2017b) recorded 164 completed suicides between 2010 to 2014 for children and youths aged 10- to 14-years-old (0.82% of total) and equaled a rate that ranged from 1.6 to 1.9 per 100,000 per year (n = 31 to n = 35); for youth aged 15- to 19-years-old, the total was 1,004 (5% of total) and equaled a rate that ranged from 7.7 to 10.2 per 100,000, per year (n = 168 to n = 227); while the total for all ages was n = 20,081[11] that figured as a rate that ranged from 11.3 to 12.0 per 100,000 per year (n = 3,951 to n = 4,254). Additionally, at the interface of maltreatment and self-inflicted injury, adults are twice as likely to attempt suicide if they suffer the physical and psychological injury that go hand-in-hand with the violent act of sexual penetration by an adult during their childhood or adolescence (WHO, 2014b).

[11] The total for all-ages, N = 20,081, includes suicides completed by children under the age of ten and suicides of persons of unknown age.

The population level data summary presented above highlights the pressing need to explore novel means to identify awareness of injury intent when its seldomly disclosed. As detailed in a subsequent section, this type of exploration is advocated for here because intentional injuries can be challenging to identify. This is because intentional injuries do not always include visible physical markers of injury, and when present such markers do not always have notable features that are indicative of extent of harm and degree of severity on a child or youth's body at the time of presentation. Additionally, intentional injuries can be described as if they were unintentional. At this time, there is a paucity of literature specific to applied knowledge that can assist helping professionals in the complex process of determining intent with information that is from outside the body domain (Gilbert et al., 2009a; Flaherty & Fingarson, 2012).

Through the exploration of the broader intentional injury category, this project's long-term view into its future objective that is specific to the development of method to more accurately identify intentional maltreatment injuries (IMIs) remained feasible. This is because the focus remained on the current need to first develop method to query for references to intent that are common across the three intentional injury types (a) parent-inflicted (IMIs), (b) non-parent inflicted, and (c) self-inflicted, yet unique to each injury-event type. Additionally, this approach also presupposed that advancing method on injury intent identification for the broader intentional injury category could be applied to the study of each intentional injury-event type. An example from intentional maltreatment injuries (IMIs) within the context of the data from the Canadian Child Welfare Services system follows to orient the discussion toward the primary concern of this thesis which is to inform the intentional injury identification process in order to better prevent IMIs.

Orienting Questions. The plight of Canadian children and youths specific to the toll of IMIs on their, social-emotional development and competence, academic achievement, and health as indexed by documented functioning concerns, is outlined in detail in three PHAC maltreatment incidence studies for cases reported to Child Welfare Services nation-wide.[12] Of the investigated cases, "substantiated decisions,"[13] constituted a rate that was 9.21 per 1,000 (43%, *n* = 58,012) in 1998, 18.67 per 1,000 (49%, *n* = 114,607) in 2003, and 16.9 per 1,000 41%, *n* = 97,458) in 2008. Such figures represent the affected lives of just under 50% of the reported children and youths that were recognizably affected by IMIs; thus, were accounted for in the IMI rates[14] (PHAC, 2010).

These figures lead to questions that need to be addressed, like (a) What made the other 50% plus cases unsubstantiated when, to the person that reported the IMI concern, there were IMI features to report? (b) Of the unsubstantiated cases, what might the proportion of false negatives be? and (c) Can we develop method to address these questions in order to be more at ease knowing that current processes of injury intent designation are not inadvertently missing-out on identifying IMIs? It is, therefore, necessary to address these questions in order to find a means to not miss-out on the opportunity to prevent potential ongoing IMIs through referral to support services to children and youths who warrant them, and their families when appropriate. These considerations regarding substantiated vs. unsubstantiated cases need to be addressed because they stand a chance to inform what aspects or parts of the injury intent determination process can work to hinder or improve the complex process of IMI identification.

[12] Exclude maltreatment incidents reported to police, health care, and educational institutions.

[13] Substantiation distinguishes between (a) cases where maltreatment is confirmed following an investigation (substantiated) and (b) cases where maltreatment cannot be confirmed (unsubstantiated) (PHAC, 2010).

[14] The PHAC 2010 report notes that rates across the years 1998, 2003, and 2008 are not directly comparable due to the evolving ways of accounting for maltreatment at different time periods (e.g., reporting years).

The meaning of the annual rates for substantiated IMIs is made more concrete by data on the top six out of the 15 documented functioning concerns reported for 2008 in the 2010 PHAC report. These six documented functioning concerns are ranked here by percent total of the referred cases: (1) academic difficulties, 23% (*n* = 19,820); (2) depression, anxiety, and withdrawal, 19% (*n* = 16,310); (3) aggression, 15% (*n* = 13,237); (4) attachment issues, 14% (*n* = 11,797); (5) intellectual/developmental delays 11% (*n* = 9,805); and (6) attention deficit disorder with or without hyperactivity, 11% (*n* = 9,101) (see Table 1 for the full list). These data highlight the far-reaching negative impact of IMI sequelae on children and youths' functioning and functioning-related outcomes across the domains of body, mind, and context that can implicate their academic achievement, social-emotional competence, and health.

Said documented functional concerns raise the need for a more in-depth discussion about the value of distinguishing between intentional and unintentional injuries using text-data that are readily available during consultations when the helping professional asks how the injury happened. This assertion is supported by the PHAC 2010 report specific to the maltreatment substantiation process that includes four steps: detection, reporting, investigation, and substantiation. The same PHAC (2010) report states that even though detection is the first step, little is known about the relationship between detected and undetected cases. The following section shifts from this contextual overview into a summary statement on injuries, injury categories, and provides an exposition of the entry point that was taken in this thesis into the complex process of determining whether a child or youth's injury was intentional or not.

2.2 Background –Intentional Injuries at the Individual-level

Injuries. Injury is the leading cause of death, disability, and impairment for young Canadians (Statistics Canada, 2011; WHO 2008), and this is consistent with most countries

worldwide (Hyder, Peden, & Krug, 2009; Mock, Quansah, Krishnan, Arreola-Risa, & Rivara, 2004; WHO 2014b). Injury includes at least two descriptive categories, intentional (e.g., maltreatment injuries, other-person-inflicted injuries, self-inflicted injuries) and unintentional (e.g., sports injuries like suffering a broken arm after getting tackled, incidental injuries like tripping on a sidewalk).[15] Most injuries are said to display distinct patterns and are, therefore, believed to be predictable and preventable (Davis, 2001; Martinez, 1990). However, in the case of intentional injures, as opposed to unintentional injuries, the task of predicting such patterns is less straightforward. The standard approach applied to unintentional injury prevention is not always effective with intentional injuries. Intentional injuries involve intrapsychic and interpersonal features that are multiply determined, which means they are not often based on a single cause, such as a head injury due to not wearing a cycling helmet.

Additionally, while intentional and unintentional injuries can result from coactive events, the probability of sustaining an injury, for example, while playing soccer, is not unexpected and does not generally represent a violation of personal rights to safety from violence (WHO, 2014a). However, in the case of intentional injuries such as those that are inflicted by a parent or non-parent, it does, and the violation represents a transgression of a child or youth's right to safety from violence across biopsychosocial domains. This is exemplified in the range of types of IMIs that are experienced by children and youths. IMIs are categorized into physical abuse, sexual abuse, emotional/psychological abuse, and neglect (the social domain is discussed in subsequent sections). Additionally, IMIs can co-occur in varied ways, for example, physical abuse and neglect are often reported as co-occurring and can also vary in abuse exposure by frequency, severity, and duration (Nooner et al., 2010). Some researchers also include the exposure to

[15] Intentional and unintentional injuries are distinguished based on whether the injury was deliberately inflicted or not (WHO, 2006).

spousal violence or intimate partner violence as an IMI in their work (e.g., Trocmé Tourigny, MacLaurin, & Fallon, 2003).

The preceding two paragraphs illustrate how intentional and unintentional injuries can be considered under the broad category 'injury', but can also highlight that beyond reporting the two types of injury as a total rate based on the injury outcome, additional query into their etiology can be challenging. This can be the case especially when the processes involved in injury outcome data are considered from a variable-centered standpoint (e.g., additive) instead of a person-centered standpoint (e.g., constitutive) with a variable-centered standpoint. The inclusion of person-centered data are key because they can work as a means to access the injury process data from across the biopsychosocial domains while attending to processes across time, such as pre- during- and post-injury. This means that when inquiry includes a person- and variable-centered standpoint, the possibility of noting similarities and differences between intentional and unintentional injuries beyond the injury outcome (injured body) becomes available as mind, and context. It is this type of inquiry that this work is based on; thus, the following section augments the earlier population level data summary on the negative impact of intentional injuries with individual level data specific to intentional maltreatment injuries (IMIs).

Intentional and unintentional injuries at the individual level. As noted earlier, distinguishing between intentional and unintentional injuries in the child and youth population, especially with the aim of identifying parent inflicted intentional maltreatment injuries (IMIs), is not only critical but also complex. It is critical because of the need to prevent or reduce the magnitude of the short- and long-term effects of IMI sequelae on children and youths' normative development (De Bellis et al., 1999; De Bellis et al., 2002; Hertzman, 2013; van Voorhees & Scarpa, 2004) and interrelated developmental function deficits across affective, cognitive, and

behavioural domains (Cicchetti & Toth, 1995; Overton, 2006; Wilson, Hansen, & Li, 2011; PHAC, 2010). The impingement of such sequelae on a child or youth's optimal functioning can be observed as compromised ability or capacity to interpret and interact effectively in social contexts, like their home, school, and community (Cicchetti & Toth, 1995; Hertzman & Boyce, 2010; Overton, 2006; PHAC, 2010). In such instances, the outcome can often include a disruption of effective social-emotional responses to ordinary situations and interactions.

Such a disruption can take the form of maladaptive behaviours that can range from impulsivity and violence to withdrawal (Cicchetti, Toth, & Maughan, 2000; Gilbert et al., 2009b; Shonk & Cicchetti, 2001; Sroufe, Duggal, Weinfield, & Carlson, 2000; van der Kolk, 2005; Veltman & Browne, 2001), and can also lead to a decrease in academic achievement (Crozier & Barth, 2005; De Bellis, 2005; Ewing-Cobbs et al., 2006; Gilbert et al., 2009b; Shonk & Cicchetti, 2001; PHAC, 2010), and health (Cicchetti & Toth, 1995; Cicchetti, Toth, & Maughan, 2000; De Bellis, 2002; De Bellis et al., 2002; Norman et al., 2012; PHAC, 2010). Other negative outcomes can include delinquency (Lansford et al., 2002), runaway survival prostitution (Wilson & Spatz Widom, 2010), early psychopathology (Cicchetti & Toth, 1995; Cicchetti et al., 2000; WHO, 2014b), self-harm (Di Pierro, Sarno, Perego, Gallucci, & Madeddu, 2012; Maniglio, 2011; van der Kolk, 2005), suicide attempt (Norman et al., 2012), suicide-risk (Maniglio, 2011; Mann, 2002), and early death (Longergan et al., 2003; WHO, 2014a, 2014b).

IMI related impairments can extend beyond childhood and adolescence into young adulthood, and across the lifespan. For example, IMI associated ineffective social-emotional adjustment and functioning in situations (Djeddah, Facchin, Ranzato, & Romer, 2000; Herrenkohl, Hong, Kilka, Herrenkohl, & Russo, 2013; Hertzman, 2010; Hertzman & Boyce, 2010) and interactions can continue to negatively affect a person's overall health (Felliti et al.,

1998; Suderman et al., 2014; Thombs, Bernstein, Ziegelstein, Bennett, & Walker, 2007). Such ineffective social-emotional adjustment can also result in an increased risk for substance dependence (Gonzales, 2013), psychopathy (MacMillan et al., 2001; Teicher, 2000; Thombs et al., 2007), and suicide attempts (WHO, 2014b). Further, continued maladaptive interactions can also extend into home relations in the form of intimate partner violence (Clift & Dutton, 2011; Dutton, 2002) and the perpetuation of intergenerational transmission of child maltreatment (Bensley et al., 2004; Djeddah et al., 2000). Additional components of the overall burden of IMIs on a child or youth's later life include economic hardship related to challenges with employment. Additionally, those who suffer IMIs during childhood or their youth are more likely to struggle with employment prospects (Gilbert et al., 2009b; WHO, 2014a), and this can be especially the case for women (Currie & Spatz Widom, 2010).

Scope of Inquiry. The child, youth, and adult lists of IMI related sequelae presented above are not comprehensive, but they give some sense of the extent of the short- and long-term damage that IMI sequelae can have on children and youths' lives. The lists also give a sense of some of the disciplines within the public sector that interface when attending to IMIs and their outcomes across biopsychosocial domains.[16] For children and youths, Health, Education, Social Work, and Law are implicated. For the current study, the focus is on the Public Health sector where IMIs deemed to require medical attention by a parent, a concerned other, and in some cases the child or youth themselves, are attended to and enumerated (e.g., surveillance systems). Concerning conceptual scope, the research design included intentional and unintentional injuries to provide a comprehensive overview of the manner in which language is used to describe child and youth injuries in the study's sample. This is important because intentional and unintentional

[16] The term biopsychosocial is considered here as being comprised of an individual's (1) biological and physical domain, (2) psychological domain (intrapsychic), and (3) context, (3.a) social (interpsychic), (3.b) material, and is used for brevity, as well as interchangeably with the three experiential domains body, mind, and context.

injuries are typically studied in isolation of each other, rather than together to compare how they are similar or different (Cohen et al., 2003), especially in their etiology.

Studies that include data for both intentional and unintentional injuries are in line with the commonly used research design in the field of psychology that involves group comparisons to identify potential between-group differences in the same population. As is detailed below, the identification of between-group differences is considered important here for two reasons: (1) intentional injuries can look like unintentional injuries, and (2) can be described as unintentional injuries. Physicians and multidisciplinary research teams (e.g., Gilbert et al., 2009a; Flaherty & Fingarson, 2012; see next section) are raising awareness on the need to use data from the psychological and social context domains, in addition to data from the biological and physical domain, to help distinguish between intentional and unintentional injuries. Efforts to make such a distinction may be of interest and of practical use within medicine's specialty areas like pediatrics. Physicians have a vested interest in noting whether an injury was inflicted on their patient intentionally by their parent in order to prevent re-injury or a potential death, and to make a referral to support services. For these reasons, studying intentional and unintentional injuries in the same study is believed to be conducive to the development of niche knowledge on injury intent identification.

Relatedly, efforts to identify means that are conducive to the development of a comprehensive approach to injury intent identification in injury and maltreatment research differ among researchers and disciplines that ground their work in different theoretical perspectives (Peterson & Brown, 1994). This is exemplified in the varied ways in which text-data from medical records are used in injury prevention research. Though varied and disparate in method, all of the reviewed approaches fragmented the injury-event descriptions and some re-presented

the portions of interest as if it was representative of the original whole (e.g., Chan et al., 2001). Such fragmentation leads to a breaking from the meaning conferring features associated with grammar structure and its related semantic meaning across a text. In contrast, the proposed study notes the recommendation made by leading researchers in child and youth psychopathology concerning means to prevent psychopathologies in the context of IMIs. The recommendation was for researchers to operationalize maltreatment with "more complete information about the nature of the maltreatment experienced" (Cicchetti & Toth, 1995, p. 560). In this project all the text-data that were provided for each injury-event description was analyzed. The approach taken in this thesis was designed to capture the phenomenology of injury-event descriptions in a way that standard approaches (see next section) used to date cannot fully expound or articulate the "more complete information about the nature of the maltreatment experienced".

2.3 Challenges with the Identification of Intent

Making the distinction between intentional and unintentional injuries is complex because intentional injuries may present as nonspecific (O'Neill, Meacham, Griffin, & Sawyers, 1973; Keenan, Runyan, Marshall, Nocera, & Merten, 2004). In some cases, this may be due to a lack of typical clinical features and absence of prior history of injury (Caffey, 1946/2011; Kempe, Silverman, Steele, Droegemueller, & Silver, 1962/1985; Hudson & Kaplan, 2006). In other cases, it may be due to the fact that intentional injuries can look like unintentional injuries (Bourne, Chadwick, Kanda, & Ricci, 1993; Lonergan, Baker, Morey, & Boos, 2003) based on the appearance of visible markers of extent of harm and degree of severity (e.g., bruise on forehead, Trocmé et al., 2003; abdominal trauma, Christian, 2015). In addition, given the shame surrounding abuse (Tajima, Herrenkohl, Huang, & Whitney, 2004; CDC, 2006; Flaherty et al., 2008), fear of retaliation from the aggressor (CDC, 2006; Christian, 2015), and socially desirable

responding (Bennett, Wolan Sullivan, & Lewis, 2006), a person may choose to report an IMI as an unintentional injury; thus, concealing their awareness of intent. These features can work against health professional's best efforts to identify IMIs when their help is sought (Christian, 2015). Such concerns come to bear on IMI prevention efforts. More specifically, if potential IMIs are missed due to the absence or ambiguity of visible injury markers and misleading descriptions of what happened to the injured (Jenny, 2009; Munro, 2005; Starling et al., 2004), as noted earlier, intervention and prevention support services cannot be offered to children or youths who warrant them and to their families, when appropriate (Gilbert, 2009a).

Visibility of IMIs. A health practitioner's ability or sense of confidence in identifying an injury as an IMI can be compromised when the injury under observation is ambiguous (Bourne et al., 1993), such as an unpatterned bruise, or when visible physical injury markers are absent. In these cases, a radiographic assay or injury intent probing questions may not be deemed necessary, which can lead to a lack of identification of IMIs. It is important to note that the absence of visible physical injury markers does not mean absence of injury (Dye, Peretti, & Kokes, 2008). For example, in the case of pediatric abusive head trauma (Hudson & Kaplan, 2006) and pediatric abdominal trauma (Dye et al., 2008), bruising on the body's surface is typically not present even in severe or fatal abusive head (Hudson & Kaplan, 2006) and abusive abdominal (Christian, 2015) trauma cases.

Indeed, Trocmé et al. (2003) noted in a Canada-wide Child Welfare sample that physical injuries were identified in only 50% of physical abuse cases, that the cases involving physical harm rarely included injuries requiring medical attention, and that physical harm was reported as occurring "far less often" (p. 1431) for other forms of IMIs (e.g., sexual, psychological/ emotional, neglect). Data on fractures (Caffey, 1946/2011) are also not complete. For example,

Ravichandiran et al. (2010) indicated that physicians missed 20% of abuse-related fractures in children aged 3-and-under, and that a correct maltreatment-related fracture diagnosis was often delayed by one to 160 days. Concerning sexual abuse, Heger, Ticson, Velasquez, and Bernier (2002) noted that of the children who were referred for a medical evaluation, 4% without and 5.5% with a prior history of penetrative sexual abuse had an abnormal examination (e.g., defined in the study as acute trauma, transections of the hymen that extended to the base of the hymen, scarring, sexually transmitted diseases, and positive forensics), suggesting that a medical evaluation is not as helpful in determining sexually-related IMIs as it may be thought to be.

Levels-of-Analysis. The need for researchers to develop a clearer and a more in depth understanding of the complex and inextricable biological, physical, psychological, social, and contextual variables that are associated with injury-event phenomena and are specific to child and youth IMIs (Caffey, 1946/2011; Kempe et al., 1962/1985), has been noted. Child and youth health professionals across disciplines (e.g., medicine specialties like pediatrics; Dubowitz et al., 2011; Flaherty & Fingarson, 2012; Heger et al., 2002), as well as by international interdisciplinary researcher teams (e.g., Gilbert et al., 2009a; Gilbert et al., 2009b; Gilbert et al., 2011) that focus on the problem of child and youth maltreatment have observed that, although significant contributions have been made by the population-level analysis approaches common in their discipline (e.g., prevalence rates), for the purposes of intervention and prevention, there continue to be significant knowledge gaps in our understanding of the child and youth maltreatment phenomenon.

Such authors attribute this shortfall to the fact that population-level approaches cannot provide the data that can be obtained at the individual-level. The point is that individual-level problems require solutions that use individual-level variables. In the case of IMIs, they are a part

of individual-level dyadic interactions (Cicchetti et al., 2000; Sroufe et al., 2000; Bronfenbrenner, 1979a; 1979b; Overton, 2006). These views concur with the author's position noted earlier and are also shared by practice focused professionals such as Heger et al. (2002). Heger et al. (2002) specifically state that the individual-level is the level where the single most important IMI diagnostic feature can be gathered and ought to be collected. From this perspective, Heger et al. (2002) strongly advocate for asking the injured child or youth, as opposed to or in addition to the parent, to provide an account of the injury experience. This study addressed the question about injury experiences from the point-of-view of parents and non-parents[17] by exploring the individual-level descriptions they provided for a child or youth's injury-event. Child and youth data were not included from the NHIS because the eligibility criteria for responders is 18-years-old or older, nor from a comparable data set because they were not available at the time this research was undertaken.[18]

Consequently, the principal bulk of the child and youth injury-event descriptions discussed here were from parents. Such an omission of first-hand child and youth experiences is not a unique feature of the NHIS. Coyne (2008) highlighted that child and youth contributions are often excluded from health evaluation processes in healthcare contexts that affect children and youth directly. Coyne (2008) also noted that consultations are typically held between physicians and parents despite of the presence of a child or youth. The absence of child and youth voices in social-science research conducted in or associated with institutional or institutionalized settings was also noted by Freeman and Mathison (2009, p. 54-58).

Reporting and Underreporting of IMIs. Another significant challenge related to the

[17] Due to a CDC reporting criterion, only those who meet the age of majority for their state of residence are eligible respondents for family members in the same household that are under the age of majority (CDC, 2010); The age of majority in most of the USA's states is 18-years old, but is 19-years-old in Alabama and Nebraska, and 21-years-old in Mississippi.

[18] For example, data from the Public Health Agency of Canada's (PHAC) Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) due to an internal review of the program by data collection sites.

identification of intent in child and youth injuries includes the reporting of IMIs (Gilbert et al., 2009a). Reporting entails a reporting sequence that can be broadly summarized into three steps: (1) reporting by the injured child or youth, parent, or concerned other to a helping professional (e.g., pediatrician, school nurse, teacher), (2) reporting by the helping professional to their respective affiliated institution (e.g., through institution-based services and surveillance systems) and government agencies (e.g., Child Welfare Services; Police), and (3) reporting by government institutions or agencies to Law. Each step of the reporting sequence is beset with its own challenges, including disagreements in labeling and classification of IMIs for case processing, tracking, and comparison across data sets (Gilbert et al., 2012).

Underreporting also presents a significant challenge to the identification of intent (Finkelhor, 2005; Tonmyr, Li, Williams, Scott, & Jack, 2010) with respect to case processing. For example, as noted earlier, the injured can underreport maltreatment due to feelings of shame about others knowing about the abuse (Tajima et al., 2004; CDC, 2006; Flaherty et al., 2008), or due to fear of retaliation from the abuser for reporting the abuse (CDC, 2006; Christian, 2015). In the case of the aggressing parent, underreporting can take the form of a volitional account that obscures the abusive nature of the interaction by backgrounding or omitting the agency and intent associated with their role in the injury outcome either as the aggressing parent or the parent that asks for help for an injury but wants to protect or remain safe from the aggressing parent. What such backgrounding and omissions result in is a modified injury-event description that then may more closely resemble the injury-event description for an unintentional injury vs. an intentional injury. This language-use behaviour can be considered as a form of deceit. Samuels (2015) suggested that such language-use modifications take place to evade the consequences of having engaged in abusive behaviour against another person. Bennett et al.

(2006) proposed that such a form of deceit is due to socially desirable responding. Irrespective of the motive, the language-use behaviors involved need to be characterized in intentional injury research to help identify their inclusion in injury-event descriptions as deceit that can work to dissimulate intent.

Additionally, underreporting of IMIs has ramifications on their prevention through the provision of support services to children and youths and their family, when warranted. This is a challenge that is brought into sharp focus when IMI incidence tracking efforts are considered. For example, it was noted in a 2011 paper that despite a steady decrease in child and youth violent deaths, a similar consistent decline in the incidence of child and youth IMIs is not perceptible in samples from six developed countries[19] (Gilbert et al., 2011). If IMIs were not underreported, it is possible that the incidence of IMIs would decrease over time due to the prevention of repeat and sibling cases through support services. This, taken together with the extant evidence for underreporting by physicians (e.g., Flaherty & Sege, 2005; Flaherty et al., 2008; Tonmyr et al., 2010), suggests that not much has changed since Caffey's (1946/2011) flagship paper noting the lack of typical clinical evidence and prior history of injury. It has also been 57 years since the landmark paper by Kempe et al. (1962/1985) on the physical markers associated with severe injury that are often not recognized or suspected as IMIs. Notably, Kempe et al. (1962/1985) and Caffey's (1946/2011) medical practice likely included the taking down of case notes. The practice of taking down case notes continues, not only in medicine, but in other contexts where the details of an injury-event description is asked for or required (e.g., Education, Child Welfare, Police). However, case notes remain largely unused in their entirety (vs. keyword searches and extractions –see next section under Current Use) for the purpose of addressing IMI

[19] The data for this 2011 study included data from the province of Manitoba, Canada, and the USA nationwide.

identification.

2.4 Text-data, Current and Potential Use

Current Use. In clinical practice, injury-event descriptions are typically surveyed and evaluated by clinicians during conversations with a patient and/or a patient's parent(s). In the case of pediatricians, they consider the logic in the progression of the injury-event description to determine if the course of events in an injury-event description corroborates the nature- and mechanism-of-injury they observe, or suspect is the case, on the child or youth's body at the time of evaluation. While such a process takes place, pediatricians deliberate on a diagnosis and treatment plan, and are likely to take case notes during or after the case consultation based on their observations and what was told to them (Bourne et al., 1993; Christian, 2015).

Outside clinical practice, the text-data from clinical case notes or injury-event descriptions in surveillance data bases are mined for keywords to sort cases into study categories (e.g., physical abuse or sexual abuse, Nooner et al., 2010). For case reviews, the text-data can be used to confirm case details. For example, if a researcher is looking at the incidence of a particular type of arm injury, the keyword they would use to identify cases could be 'arm'. Then, the researcher would look at the text-data to confirm if an arm injury was a broken arm injury or a dislocated arm injury. Keyword searches have also been used to help automate the coding, sorting, and categorizing of injury cases with the World Health Organization's (WHO) International Classification of Diseases, version 9 (ICD-9) poisoning and external cause-of-injury codes (E-codes) (Wellman, Lehto, Sorock, & Smith, 2004), and with the more recent version of the WHO codes, the ICD-10 E-codes[20] (McKenzie, Scott, Campbell, & McClure, 2010).

[20] The ICD-10 E-codes are the updated version of the ICD-9 E-codes and are the most recent version at the time of the writing this thesis.

Other researchers that focus on drug poisoning fatality prevention have used similar keyword searches, but have instead used a type of keyword composite search method to extract language segments that are specific to the drug that contributed to the fatality. For example, a keyword composite would include the name of the drug involved in the fatality (e.g., Prozac or its ICD-10 code) and other "words in proximity" (Trinidad, Warner, Bastian, Miniño, & Hedegaard, 2016, p. 4). This type of automated extraction method was designed to obtain additional information on the 'what' and 'how' elements of fatal injury poisoning events[21] that Trinidad et al., (2016) noted as lacking in the conventional keyword search and extraction method (e.g., only using the word 'Prozac' or its ICD-10 code), so contributed minimal investigative meaning to their work. Trinidad et al. (2016) noted that when a drug mention (e.g., Prozac or its ICD-10 code) is considered as "a drug mentioned with involvement" (p. 4) more could be known about the fatal outcome's contributing factors, for example: the drug and the "drug event", such as 'multiple drugs' or 'therapeutic level of drug'; the drug and the drug formulation, such as 'tablet drug'; the drug and the drug type, such as 'legal drug'; the drug and the possession or ownership of the drug, such as 'his drug'; and the drug and the drug's "complex features", such as the inclusion of a conjunction like 'and' that may flag additional detail associated with the use of the drug or drugs that contributed to the fatality, for example prescription drug 'and' legally obtained drug.

Used in the ways described above, the extracted text-data fragments can function to meet physicians' and researchers' focus-based information needs. While helpful for such purposes, the keyword approaches remain a partial exposition of the injury-event process features that are associated with the psychological and social context elements that precede, take place during,

[21] Poisoning inflicts internal damage to a person's body—a type of internal injury—that is referred to here as an injury poisoning event.

and after intentional injury-events. There is, however, support in the notion that text-data have utility in the injury prevention field. For example, McKenzie et al. (2010) found that "the interrogation" (p. 354) –a data abstraction technique– of injury text-data on a sample-wide basis has the potential to add valuable detail to case compilations that is not available through standard coding means that include using predetermined codes. The text-data interrogation methods used in the studies reviewed by McKenzie et al. (2010) included keyword searches of the text-data fields to enable the selection of cases that could not be identified with existing categorization codes, to select cases for study first to then extract additional detail relevant to a study's research question, and for the extraction of additional details about circumstances specific to the research question only. The means used to do the text-data interrogation in these studies ranged in complexity from manual extraction by keywords, computerized algorithms to identify keywords, and a combination of manual- and computerized-based extractions based on keywords. McKenzie's research team (2010) noted that the added case detail from the text-data fields could be useful to injury prevention efforts within a surveillance framework. This is because they found that the added detail helped with the interpretation of non text-data that was in the form of a single primary categorical code that did not accommodate subcategories, or that did not fit a predetermined code in a surveillance system. Based on their findings, the McKenzie team (2010) suggested that standardized computerized techniques should be developed to abstract and interpret their method's resulting text-data fragment composites.

Even if the recommendations from the McKenzie team (2010) and the Trinidad team (2016) are for text-data fragments, these teams' findings are taken as support for the value of text-data given the meaning-making contribution that words from case narratives can make to scores of enumerated body parts and inventories of mechanical means in which the body parts

were injured. The suggestion, then, that a text-data analysis technique like the descriptive grammar and process based Discourse Pattern Function (DPF, described below) analysis technique can be used as a means to more completely highlight meaning conferring language-based features that are related to injury processes that are related to the body, mind, and context experiential domains through the analysis of entire injury-event descriptions, proffers a valuable promissory note on better understanding the differences in language-use per injury-event type and point-of-view, in this case within a research framework.

Potential Use. On expanding practice for intent identification: In contrast to the keyword methods, the approach advocated for here is the analysis of an injury-event description's entire text, otherwise a descriptive text's data would be left largely unexplored for their full meaning conferring features beyond the confirmation of the nature of bodily damage, keywords for case sorting purposes, or a drug's features. While useful for quick case selection and keyword augmentation, keyword approaches remain an incomplete exploration of events and remain a partial exposition of human phenomenology such as injury-event processes that include experiential features which are associated with the psychological and social context elements that precede, take place during and after intentional injury-events.

The practice that can facilitate the analysis of entire injury-event descriptions in a systematic way involves a discourse process based method that accounts for what words were used and how they were used by fully noting lexical selections (e.g., what words are used), grammatical organization and associated semantic meanings at the clause and text levels. Additionally, the discourse process based method can be useful when analyzing secondary data, like case notes, that is in the form of grammatical and ungrammatical clauses. This is because even in an ungrammatical sentence such as 'A big hat abusive wore the woman', lexical

meanings are conveyed and inferences may be made. This interpretive capability of the discourse process approach was significant in the context of this study because not all of the injury-event descriptions included grammatical sentences.

For example, in the instance of the ungrammatical sentence 'A big hat abusive wore the woman', the sense meant by the speaker remains unclear and must be noted as such in the data set, because it represents, nonetheless, a communicative effort with lexical meaning. Notably, in the ungrammatical sentence example provided above, the roles of the participants (see Appendix A) are unclear. In this example, it is not clear who, if anyone, is affected. This lack of clarity on who the participants in the dyad were (e.g., mother-daughter, sister-sister, friend-friend) and on who did what to whom introduces ambiguity into a dyad's interaction roles. To account for this variation in the present study's injury-event descriptions, a third injury-event type category was created in this study and was labeled Ambiguous[22] and included as a level of the independent variable Injury-event Type.

The practice of considering the meaning conveyed by grammar-based descriptive analysis can allow access to the word and word placement[23] choices that are made at the individual level in dyadic interactions. This practice can figure as a resource for exploring meaning in texts and in cases for disambiguation. The language-use patterns that are analyzed in such a way could then be used to characterize linguistic patterns by injury-type (intentional vs. unintentional vs. ambiguous) and point-of-view (parent vs. non-parent).

[22] It is also worth noting that while a text's semantic interpretation is more likely to be clear when a clause is grammatical the meaning of a grammatical clause may also be unclear, especially in the case of ambiguity as defined here.

[23] The ungrammatical clause example used here, 'A big hat abusive wore the woman', is unlikely outside of clinical populations, such as people diagnosed with an aphasia (e.g., Kendall, Hunting Pompon, Brookshire, Minkina, & Bislick, 2013), but helps to convey the point that changes in grammatical structure (like those that can take place during case note taking) can change the semantic meaning for a 'note taker' when the person that provides the description modifies the telling of the actual event.

To query the injury-event descriptions in such a way, two linguistic analysis techniques were applied to the study's sample to inform the development of novel method based on the data from entire injury-event descriptions. The first analysis technique that was applied was a word frequency count by word category (see Appendix B), and is referred to here as the word-type count (WTC) analysis. The WTC is similar to the word extraction techniques outlined above in that the grammatical structure and semantic based features for each text segment in an injury-event description is not maintained. However, the WTC analysis is different in that the WTC facilitated the expeditious production of an inventory of all the words in the study's injury-event descriptions vs. only a tally of a specific keyword or set of keywords. The second analysis technique that was applied was a discourse process based technique and was referred to here as the discourse pattern function (DPF) analysis. The DPF involved the analysis of semantic roles and information structuring. The DPF analysis, to the author's knowledge, has not been applied to injury-event descriptions in the way that it was applied in this thesis. The application of the WTC and the DPF linguistic analysis techniques is introduced below and described more fully in the Methodology section.

2.5 Language-use Analysis Techniques

The two linguistic analysis techniques mentioned above, the WTC and DPF, were selected to help develop a method that can assist with making the identification of expressions of intent more plain than it is with methods used in current practice that are primarily body-based, and to do so within the context of already existing practice to supplement rather than to replace helping professionals' understanding of intentional injuries. The WTC and DPF have been used successfully to make within- and between-group language-use distinctions in experimental (e.g., Chung & Pennebaker, 2007; WTC) and clinical settings with adults (Asp, Song, & Rockwood,

2006; Asp et al., 2006; Asp & de Villiers, 2010; DPF), and children (Asp & de Villiers, 2010; de Villiers, 2005; de Villiers, Fine, Ginsberg, Vaccarella, & Szatmari, 2007; Hartley & Jensen 1991; Armstrong 2001, 2005; Armstrong & Ferguson 2010; Thomson 2005; Jorgensen & Togher 2009; DPF).

The logic for the overall language analysis plan was to ascertain whether injury-event descriptions included linguistic features that could help address the study's primary objective which was to distinguish intentional and unintentional injury-event types, even in instances where such a distinction is made challenging because physical markers are not clearly defined or visible, there is an absence of prior injury history, and/or when intentional injuries are described as if they were unintentional injuries. The third injury-event category called ambiguous that emerged in this study was also analyzed to note whether its linguistic features were more or less similar to intentional and unintentional injury-event descriptions. To address the study's objective, the scope of inquiry was expanded beyond the better understood body-based injury markers, such as sentinel IMI markers (e.g., bruises, fractures, Christian, 2015), into the domains of mind (e.g., intrapsychic experiences, Cicchetti & Toth, 1995;) and context (e.g., coactive experiences, Cicchetti & Toth, 1995; Bronfenbrenner 1979a; 1979b; Overton, 2006), and this analysis approach was facilitated by the WTC and the DPF (described in Methodology).

2.6 Injury-event Descriptions, Analysis Approach

Injury-event Type. Intentional and unintentional injuries are distinguished based on whether the injury was deliberately inflicted or not (WHO, 2006). In this project, the intentional injury category included three intentional injury types: (a) parent inflicted injuries (intentional maltreatment injuries [IMIs]), (b) non-parent inflicted injuries (same/different age-group), and (c) self-inflicted injuries (self-harm with or without the intent to kill oneself). These three

intentional injury types were treated together based on their intentional nature. As noted earlier, ambiguous, [24] a third injury-event category that emerged in this study was included in the analyses. The injury-event types were organized under the independent variable Injury-event Type's levels Intentional, Unintentional, and Ambiguous.

Point-of-view. Point-of-view was considered here as the personal perspective of the person reporting the injury-event, such as the injured child or youth's parent or non-parent (e.g., a person in a parental role such as a grandparent, sibling over the age of majority). Point-of-view was key in the project as point-of-view was taken to represent a conceptual nexus of meaning-making processes associated with a reporting individual's intrapsychic, coactive, and social domains that come to bear on their perception, understanding, and interpretation (Overton, 2006; Meltzer, Petras, & Reynolds, 1975) of the injury-event they experienced or know about and later describe. Viewed this way, point-of-view can allow for an individual-level contextualized exposition of how child and youth injury-events tend to be described when provided from the point-of-view of a parent or a non-parent.

Relatedly, concerning the distinction between parent and non-parent injury-event descriptions, there are additional roles (e.g., son, daughter, mother, father vs. brother, aunt, grandmother, grandfather) that inform the relationship between the parent or non-parent to the injured child or youth that come to bear on the nature of the injury-event description. Each role corresponds to a social script that can prompt role specific behaviours in coactive instances and may differ by location, such as the home or a public institution, (Bronfenbrenner, 1979a; 1979b; Meltzer et al., 1975). That is, an aggressor may take a domineering and abusive role over the child or youth in the home, but that of a compliant, concerned other in the physician's office

[24] For a clause like 'She broke her arm', who the 'she' stands for (e.g., mother, sister, friend, or the injured) is not clear based on the available text, so the interaction roles remain ambiguous.

(Kempe et al., 1962/1985; Meltzer et al., 1975).

This is significant in IMI prevention because, in the case of health professionals, they are less likely to report a suspected IMI or to designate an injury as an IMI when the parent presents as an unlikely aggressor (Kempe et al., 1962/1985; Flaherty & Sege, 2005). This latter point is also related to underreporting, and, as noted earlier, can consequently lead to missed opportunities to identify IMIs (Flaherty & Sege, 2005). It is important to highlight the function that the nature of an injury-event description, inclusive of point-of-view, can have on physician IMI underreporting, and the subsequent missed opportunities to enable access to support services for children and youths, and their families when warranted. What Kempe et al. (1962/1985) and Flaherty and Sege (2005) flag is the need to query injury-event descriptions for linguistic markers of deceit as expressions of covert intent.

Role of agency, intent, and deceit. The preceding review of some of the challenges that are associated with intentional injury identification bears-out the need to study the linguistic expressions of agency, intent, and deceit as potential features that can vary by injury-event type and point-of-view with the purpose of distinguishing intentional injury-event descriptions from those that are not, and to learn how such descriptions compare to those descriptions provided by a parent vs. a non-parent. This need was broached with the two linguistic analysis techniques introduced earlier: the word-type count (WTC) (e.g., Chung & Pennebaker, 2007), and the discourse pattern function (DPF) (e.g., Asp & de Villiers, 2010). The next section provides a brief description of how agency, intent, and deceit were operationalized in this study. Later, the same section outlines how the language analysis techniques were used by other researchers on text-data samples to identify unique language-use characteristics as a means to note expressions of psychological, social, and contextual language variables in the form of word patterns (Chung

& Pennebaker, 2007) and as supplemental diagnostic information (Heger et al., 2002; Asp & de Villiers, 2010; Asp, Song, & Rockwood, 2006; de Villiers, 2005; Fine, 2006; de Villiers, Fine, Ginsberg, Vaccarella, & Szatmari, 2007).

The first construct, agency, was operationalized as the state of being active in service of a goal (American Psychological Association [APA], 2007). Agency requires an agent to carry out a goal. An agent was operationalized as a person or entity that acts or has the capacity to act (APA, 2007). In the context of dyadic interactions, an agent typically enters into a relational act with another person. One exception can be made in the case of intentional self-inflicted injuries. where the agent (the child or youth that carries-out a self-inflicted injurious act with our without the intent to kill themselves) generally engages in the self directed injury when alone, but, necessarily, within their sociocultural context. For example, in the mind of an adolescent youth, the experience of a ruptured social relationship can result in their apperception of a disrupted relational context (e.g., broken sense of trust felt towards parents due to parental abuse) that generates intense negative affect and can lead to self-injury (Maniglio, 2011). This means that while intentional self-inflicted injuries are generally a solo act, they were considered here as socially embedded events nonetheless.

Agency was tracked by noting the order in which words were arranged in an injury-event description that is referred to as textual organization. For example, the textual organization of a clause that is common and an expected structure in standard modern English is arranged in the subject [S], verb [V], object [O] order vs. the OVS order that is a less common structure. The use of less common structures such as OVS represents a motivation, conscious or not conscious, to make the individual in the agent role passive, like ‘water spilled on the keyboard’. Other language use features that were tracked included the language-use patterns that can work to

detract attention away from an agent's actions (self or other). Such examples of textual organization are a function of the choices that are made during a communicative act, so can be attributed to being associated with agency. Such choices to make an agent passive or to draw attention away from an agent's role speaks to intent, the second construct, specifically the dissimulation of intent. Intent has a long history in the philosophical literature (Finnis, 2014) and has more recently been described, for example, as a constitutive element of intentionality by Franz Brentano (1838-1917) and intentional stance by Daniel Dennett (1942-) (APA, 2007). Here, intent is operationalized as a resolve to act in a certain way for purposeful action (APA, 2007), where the action serves a communicative function in coactive events. The third construct, alluded to in the first and second constructs, is deceit. Deceit is operationalized here as a conscious choice to distort facts by commission or omission with the purpose of misleading others (APA, 2007), where the action serves a communicative function in coactive events, such as in an agent's need to present favorably to others or to evade culpability (self or other).

In this study's context, given that it was the NHIS field representatives that typed the data into the laptop computer used for data collection rather than the interviewee, deceit features, if any, cannot be directly associated with what the parent or non-parent who described the injury-event said. It is unlikely, however, that the field representative would completely rearrange what they hear as a description while trying to type it in injury-event structure. Additionally, as noted earlier, the interview reporting and recording process is much like the process that takes place during medical consultations for injury evaluations that yield event records in the form of case notes. Taking case notes is a common practice in injury case evaluations, and case notes are also considered to be an adequate descriptive representation, even if not exhaustive, of how an injury happened in pediatrics (Christian, 2015). The opportunity to query the injury-event descriptions

for expressions of agency, intent, and deceit, therefore, remained a viable option with the proposed analysis approach with respect to the utility of analyzing language data that were gathered during a process that bears procedural similarities to current injury evaluation and recording practice in the form of case notes.

On estimating deceit. The applied area of forensic linguistics involves the analysis of language materials, including written texts, in the context of criminal law investigations (Macleod, 2013) that commonly include mandatory[25] event reporting (Proudfoot, Boyle, & Schuetzler, 2016). A search of the flagship journal of the International Association of Forensic Linguists identified five articles with the search string 'deceit or deception or lying'. Three of the five articles (Benneworth-Gray, 2014; Aldridge & Luchjenbroers, 2006; Adams & Jarvis, 2006) highlighted the interactional domain for its key role in facilitating a view into the linguistic details in an interviewee's event description that could be considered deceit related linguistic features. However, the interaction under scrutiny in the three selected articles was the interaction between the interviewer and the interviewee; whereas, the study reported on here looked at the interaction roles noted in the injury-event descriptions.

In the studies by Benneworth-Gray (2014) and Aldridge and Luchjenbroers (2006) the authors spoke about the impact of interviewing practices on interviewees' language-use behaviours. Related to interviewer and interviewee interactions, Benneworth-Gray (2014) cautioned that question-type can influence the interviewee's responses, where binary type (e.g., yes/no) questions tend to elicit answers that "align with the polarity of the interrogative". For example, for a question like 'Are you going to tell the truth?', its positive polarity tends to draw a 'yes' from the interviewee vs. 'You're not going to tell us the truth?'. Whereas,

[25] This is in contrast with the reporting textual context in which this study's injury-event descriptions were collected, that was a voluntary interview health survey, but could be considered similar to textual contexts where a parent or non-parent is interviewed by law enforcement for the purpose of determining if an injury was intentionally inflicted or not.

event description details that were obtained with open-ended type questions like ‘what happened?’ were useful when checking for event description consistency across the interview’s text which can be used to and interpreted as a means to estimate accuracy. In the present study the type of eliciting question was also of an open-ended format (i.e., how did the injury happen?).

The third paper by Adams and Jarvis (2006) aligns more closely with the work reported on here with the WTC and the DePaulo et al.’s 2003 paper. Adams and Jarvis (2006) presented event data findings as language-use features like negation, relative length (of the text), unique sensory details (e.g., smells, sounds that can provide a description of the material context), and attributes of equivocation that were more frequently associated with less forthright interviewees. However, as already noted, the papers’ focus was on the interviewer and interviewee interaction, and not on the agent- and patient-based roles of the event participants noted in an event description. There was one study that did, and this study included an analysis of the effectiveness of language-use features that indicated a higher likelihood of a truthful account and were: more detailed accounts, higher degree of coherence, and more self-admissions of lacking memory for certain details in the event (Porter & Yuille, 1996). These findings align with the DePaulo et al.’s (2003) findings on the types of linguistic markers that are more likely to indicate deceit.

On the inclusion of more linguistic detail, this feature is similar among the findings reported by DePaulo et al.’s 2003, Adams and Jarvis (2006), and Porter and Yuille (1996), on the association of greater linguistic detail and truthfulness. The experimental study by Porter and Yuille (1996) was the most similar to the present study in that it also included a between-groups comparison, and a feature-present/feature-absent proportional comparison (described in Analysis Plan). Their four groups were organized under two categories that were truthful and deceitful,

and the four groups were truthful confession, truthful alibi, partial deception, and false alibi. Their findings showed that the truthful confession and truthful alibi groups included a similar and higher proportion of event details as compared to the two groups partial deception and false alibi that included a similar and lower proportion of event details. The Porter and Yuille (1996) study looked at the reports that were made first-hand by undergraduate participants about a transgression they committed against another person and were asked to report the transgression based on their assigned experimental condition.

Role of 'What happened?' type questions. In addition to the investigative role that the open-ended 'what-happened?' type question on obtaining event details to confirm accuracy in an event's description in criminal law interviews (Benneworth-Gray, 2014), the 'what-happened?' question can also be used as a means to convey to the interviewee that the interviewers' goal is to gather information rather than to accuse them of engaging in deceit with questions like "Are you sure you're telling me the truth?" (Vrij, Mann, Kristen, & Fisher, 2007). As such, an open-ended type questions like 'what-happened?' permits the interviewee to provide a description of an event as they choose, and this choice is what can reveal if an event description is or is not inclusive of linguistic features that are associated with expressions of deceit.

2.7 Words' Revealing Nature and Function

Language Analysis 1 –Word-type Count (WTC). Pennebaker and his research team have contributed research studies based on word frequency tallies that demonstrate the contribution of words to increased knowledge on varied topics and phenomena from within the discipline of psychology (Pennebaker, n.d.). One of their original word queries took place in the 1980s. At that time, the researchers noticed that participants showed improved physical health after completing the written component of a study that involved describing an emotional

upheaval in journal format (e.g., Pennebaker & Beall, 1986). As a result, Pennebaker and his team began to formally explore the link between the effects of writing (a communicative act) about the emotions that were associated with the experienced emotional upheaval on health outcomes. Additionally, to facilitate an experimental and the systematic exploration of each writing sample for the purpose of better understanding the difference between the type of words used by those that reported wellness vs. those that did not, the Pennebaker team developed a word counting software program called the Linguistic Inquiry and Word Count (LIWC) to sort words into grammatically and semantically congruent categories (see Appendix B). The LIWC software has undergone several revisions since then along with internal reliability and external validity checks (Groom & Pennebaker, 2002; Pennebaker, Francis, & Booth, 2003; Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007).

The LIWC word-count linguistic analysis technique and software has been used to study intentional maltreatment injuries (IMIs). For example, in a 2011 study, Pennebaker and Chung looked at study participants' expressions of their IMI experiences. However, rather than distinguishing language-use differences between IMIs and other injury types, they focused on differences in language-use before an intervention as compared to language-use after an intervention for a particular target group (e.g., adults that reported IMI related childhood trauma). In this 2011 study, similar to the 1986 study by Pennebaker and Beall, the intervention was a write-about-the-trauma task. Differences between the experimental and control groups were codified as changes in the relative proportion of negative emotion words to positive emotion words. Their results showed that for participants who reported better health and improved function, their use of negative emotion words had decreased while their use of positive emotion words had increased. The negative-to-positive emotion affect dimension's relationship

to improved health and function outcomes has been a consistent finding in the Pennebaker team's work (e.g., Pennebaker, 2000; Chung & Pennebaker, 2011), and this process lends support to the relevance and association of words to mental cognitions in relation to how experiential phenomena is described. While the LIWC variable Affect was not the principal focus of the proposed project, it was of interest concerning the ubiquitous role of affect in coactive events specific to its influence on the nature and function of interactions (Bennett et al., 2006) such as the greater use of negative emotion words in event descriptions that are associated with deceit according to Newman, Pennebaker, Berry, and Richards (2003).

More recently, the Pennebaker team expanded the use of the LIWC language category parsing software to the analysis of psychological states and personality characteristics in transcripts from news media platforms such as television (Slatcher, Chung, Pennebaker, & Stone, 2007), and to infer research participants' thought patterns, including the association of the thought patterns with personality characteristics based on the participants' description of inanimate objects (e.g., Boyd & Pennebaker, 2015). These more recent Pennebaker team studies, though, focus on the referential function of function words (e.g., pronouns, prepositions, articles, auxiliary verbs, conjunctions), rather than on the content of an entire text that includes content words (e.g., nouns, verbs). This is not mentioned in the negative, but rather to point out LIWC's unique capability to facilitate such an approach based on the analysis of parts of entire text-data samples. Function words in text-data samples can still convey some indication (Brinton, 2000, p. 75-77) of how an individual conveys mentation in words, even when expressed without what Chung and Pennebaker (2007) refer to as "conscious attention" (p. 347).

The utility of function words was of interest in this study in addition to content words. A function word analysis can show how speakers use function words in a highly individualized

manner in order to achieve their message's objective, such as the dissimulation of intent. Newman et al. (2003) suggested that because such an objective is codified in the speaker's language-use choices across an entire text sample, a function-word pattern emerges that can give away the speaker's attempt at disguising the nature of a previously committed act. However, it is significant that such usage patterns emerge because the function words exist among their corresponding content words in a grammatical cohesive manner that contributes to said patterns as well as to the patterns' interpretation. For example, the function word 'she' –a pronoun– requires a verb and an object plus other function words to connect the subject 'she' with its respective verb and object.

With respect to the utility of examining word-use and LIWC's capability to aid in noting injury-event descriptions' contextual features using function and content words, support was found in Holtgraves's (2011) work. Holtgraves used LIWC to analyze language-use in text-message content and suggested that the language-use patterns reflected the participant's personality and the interpersonal context in which the text-messaging occurred. On word use, the Literature Review has so far outlined the ways in which words are used to analyze event descriptions from keywords extractions, composite keyword extractions, to a function word and function word and content word analyses. This study's objective for the word use analysis with the WTC follows.

Objective of Language Analysis 1 -WTC. The word-type count (WTC) linguistic analysis technique was used as a means to obtain a tally of all the words that were included the entire text for each injury-event descriptions (vs. only keywords or only function words) that enabled a sample-wide comparative view of the LIWC (2007) categories by injury-event type

and point-of-view, including the exploration of an estimate of deceit as the composite variable Likelihood of Deceit (see Analysis Plan in Methodology).

Language Analysis 2 –Discourse Pattern Function (DPF). The DPF was used to identify language-use patterns at the individual-level with a full clausal analysis as a means to study the injury-event descriptions at the dyad-level. This was done by noting the word-level associations for grammatical and semantic meaning along with the verbs' constituent elements like the participant roles that the verb implicates. For example, the verb 'to push' requires the participant that does the pushing (i.e., Agent) and the participant that is pushed (i.e., Patient), while the verb 'to drink' requires a participant (i.e., Agent) to do the drinking. This means that injury process elements (verbs) (see Appendix A) were used to indicate their required constituent elements such as the participants' roles to note content and textual organization features in the injury-event descriptions.

As noted in the introduction, discourse analysis has been used successfully to identify differences in language-use patterns between population sample types (samples from the general population vs. study population) and within study population samples in clinical settings. Examples from clinical settings include the language-use patterns that emerge in the discourse of adults diagnosed with neurodegenerative disorders like Alzheimer's disease (Asp, Song, & Rockwood, 2006), and children diagnosed with Autism Spectrum Disorder (de Villiers, 2005; Armstrong, 2001; 2005; Armstrong & Ferguson, 2010; Hartley & Jensen, 1991; Jorgensen & Togher, 2009; Thomson, 2005). Here the goal was to identify language-use patterns that were expressions of psychological and social contextual variables and more likely to be associated with linguistic markers of agency, intent, and deceit in the form of Dissimulation of Intent (see Study Variables in Methodology).

Objective of Language Analysis 2 -DPF. The discourse pattern function (DPF) linguistic analysis technique was used as a means of identifying the manner in which individuals used language to express injury-event participants' agency when relating an injury-event description to a health professional. The DPF was used to enable the identification of linguistic process features at the individual-level in dyadic interactions per injury-event type and point-of-view (see Analysis Plan in Methodology).

Language Analyses 1 (WTC) and 2 (DPF). The rationale for using two language analysis techniques rather than one was related to the project's overarching objective of developing a method for the more effective identification of expressions of intent in the context of pediatric injuries. While the WTC and the DPF language analysis techniques are from different academic domains—the study of psychology for the WTC, and the study of the modern standard English language for the DPF—both domains' spheres of knowledge are implicated in this project. Both spheres of knowledge are concerned with mind matters such as experiential phenomena and each of the two academic domains contributes its discipline-specific approach to query and interpret mind phenomena, such as language-use in descriptions of lived experiences like injury-events.

On a practical level, the WTC with the LIWC (2007) software helped generate an expeditious tally of the number of words used per case per for the LIWC experimentally derived word categories. The WTC tally was useful in noting higher or lower percent totals for a particular word that showed what words were more likely to represent a more or less frequently occurring language-use feature in the data per injury-event type and point-of-view. For example, in the case of action verbs, a higher or lower proportion could be taken to mean that more or less of a particular behaviour is represented in the sample per injury-event type and point-of-view. In

the case of the DPF, it helped account for discourse process words based on their expected relation to each other, so were tallied based on their grammatical and semantic relations at the clause-level. Importantly, alternate patterns in the expected standard grammar do not necessarily mean that semantic sense is fully lost; rather, some non-standard forms and patterns are to be expected in natural discourse non-standard grammatical structure can still carry relevant, and sometimes sufficient, semantic meaning. The DPF allowed for the interpretation of both the expected and unexpected language-use patterns as they appeared in the injury-event descriptions, so helped account for the individual variability in natural discourse in the study's injury-event reporting textual context.

2.8 Research Questions

The primary goal of this study was to analyze intentional and unintentional injury-event descriptions to see if they differed in language-use patterns according to Injury-event Type (intentional vs. unintentional vs. ambiguous) and Point-of-View (parent vs. non-parent), as well as according to two estimates of deceit as Likelihood of Deceit for the WTC analysis approach and as Dissimulation of Intent for the DPF analysis approach (described in Methodology). The purpose for doing so was to identify injury intent language-use markers that could work to inform the eventual development of a supplementary injury intent identification query rubric for use by professionals—alongside their existing practice—in disciplines that have an intentional injury intervention and prevention mandate. The two research questions and two hypotheses that were involved in this query are listed below, and are to further contextualized by the subsequent section Analysis Plan in the Methodology chapter.

(1) Do child and youth injury-event descriptions differ in language-use patterns? How?

(1.1) According to the WTC analysis, (1.1.1) By Injury-event Type, and (1.1.2) By Point-of-view

(1.2) According to the DPF analysis, (1.2.1) By Injury-event Type, and (1.2.2) By Point-of-view

(2) What language-use patterns are associated with the set of proxy variables used to query for an estimate of potential deceit?

(2.1) According to the WTC's estimate of Likelihood of Deceit,[26] (2.1.1) By Injury-event Type, and (2.1.2) By Point-of-view

(2.2) According to the DPF's estimate of Dissimulation of Intent,[27] (2.2.1) By Injury-event Type, and (2.2.2) By Point-of-view

2.9 Research Hypotheses

(1) The language used to describe intentional injury-events is different from the language used to describe unintentional injury-events. The expected language-use differences are in the proportion of word-choice references made to negative as compared to positive emotion words, references to others, spatial locations between interactants, and activity (e.g., action verbs).

(2) Intentional injury-event language-use patterns are less similar to Ambiguous and Unintentional injury-event language-use patterns, than Ambiguous injury-event language-use patterns are to Unintentional injury-event language-use patterns.

(3) Intentional injury-event descriptions are less likely to include the proxy language-use markers of potential deceit as follows:

(3.a) Likelihood of Deceit (LoD) -according to the WTC deceit data estimate[28] using qualified LIWC (2007) variables (capitalized) in the LoD:

(I) fewer first-person Personal Pronouns (e.g., I, me)

(II) fewer Exclusive words (e.g., but, or, just, if)

(III) more Negative Emotion words (e.g., anger, sad)

(IV) more Motion words (e.g., run, climb, go)

(V) more[29] Cognitive Mechanisms words (e.g., aware, think, determine)

(3.b) Dissimulation of Intent (DoI) -according to the DPF deceit data estimate[30] using the grammar outlined by Asp and de Villiers (2010) that was operationalized here as variables

[26] Described in Methodology.

[27] Described in Methodology.

[28] Informed by Newman et al. (2003).

[29] Informed by DePaulo et al. (2003).

[30] Informed by Asp and de Villiers (2010).

(capitalized) and qualified for the DoI:

(I) more Tense-shift (a shift from describing a past event in the past to describing the same past event in the present, or a shift from describing a past event in the present to describing the same past event in the past)

(II) more Nominalization (the use of a word in a different word class, e.g., using a verb as a noun to avoid the mention of participants and their interaction roles that are required for a verb, such as "He lacerated [verb: lacerate] her cheekbone" vs. "It was a laceration [noun: laceration] to the cheekbone")

(III) more Ergative Verbs (the use of a motion or change verb that can denote an act without the need to mention a Cause or Agent, e.g., "The tooth-line changed").

(IV) Focus[31] (what is said at the start of a clause as a point of departure)

- less Focus: When the injured child/youth is located in the participant role Patient (the person that undergoes a change of state such as a person whose state changes from a person with an intact femur to a person with a broken femur), in intentional injury-events as opposed to unintentional injury-events.
- more Focus: When the injured child/youth is located in the participant role Agent (the person doing the action, such as the person that swung the bat that broke the Patient's femur), in intentional injury-events as opposed to unintentional injury-events.

(V) Prominence[32] (what is said at the end of a clause)

- less Prominence: When the injured child/youth is located in the participant role Agent, in intentional injury-events as opposed to unintentional injury-events.
- more Prominence: When the injured child/youth is located in the participant role Patient, in intentional injury-events as opposed to unintentional injury-events.

[31] Focus (what is said first) and prominence (what is said last) features are typically analyzed together in the same clause to understand the 'focus' and the 'prominence' given by a speaker to the participant(s) in an event. Here, these two linguistic features are noted separately to show that each linguistic feature was allotted its respective language-use frequency count in the data set. The variables Focus and Prominence are, however, discussed in tandem in other sections of this document.

[32] See the preceding footnote on Focus and Prominence.

CHAPTER 3. Methodology

Following the thread of discussion outlined in the preceding Introduction and Literature Review chapters, this chapter provides a description of how the language-use patterns in the injury-event descriptions were conceptualized and then analyzed by Injury-event Type and Point-of-view. In the previous chapters, differences in the approach to the study of injuries as well as helping professionals' views on the available body-based identification means for the evaluation of injuries for intent at the time of presentation to a helping professional were noted. The purpose for noting such differences was to provide an orienting background, and a background against which the chosen approach to the study of injuries as intentional injuries as compared to unintentional injuries across body, mind, and context would also work as a rationale for the chosen methods and statistical techniques that were used to answer the study's research questions and address its hypotheses. In this section, the theoretical perspective that informed the study's methodology which, in turn, informed the choice of methods and statistical techniques that were used to investigate the injury-event descriptions' text-data is addressed first. The study's theoretical perspective is then followed by a description of the data, the study variables, and the analysis plan.

On the Study's Theoretical Perspective

As noted in the introduction, the range of information that can be garnered by current injury intent identification practice is primarily limited to the body domain –it is more about tissue damage than psychological assault. However, this is to be expected and not a fault in and of itself because the body domain is the medium of injury, and in the case of some helping professionals like physicians, the body domain is their specialty area. The point that is brought forward here is that the range of available data that need to be made available to frontline helping

professionals by researchers in the social sciences are the data from the psychological and context (social and material) domains. Because such data emerge from dyadic interactions, they are experiential in type; characterize phenomenology from lived experiences during an injury-event, not only the injury outcome in the form of a physical injury (e.g., a black-eye). Considered together, data from the physical, psychological, and context domains can afford a more complete view into how an injury happened that may not otherwise be available through body-based data. This view is conversant with the study's overarching theoretical perspective that informed this work and is known as Symbolic Interactionism, and in keeping with this thesis's objective to quantify the language that was in the injury-event descriptions by injury-event type and point-of-view with the two chosen linguistic analysis approaches (see Literature Review) that also functioned as analysis techniques (described below).

One of the two analysis techniques involved the tallying and sorting of words by type according to the set of experimentally derived word categories (see Appendix B) offered by the Linguistic Inquiry and Word Count (LIWC, 2007) software. The LIWC automated word by word category parsing software was used to facilitate the analysis of the word content by the LIWC categories expeditiously and sample-wide, by injury-event type and point-of-view. This word counting approach was referred to here as the word-type count (WTC) linguistic analysis. The WTC was also used for the estimate of potential expressions of deceit per the study's Likelihood of Deceit (LoD) composite variable. The LoD was informed by work from the primary LIWC developer (Pennebaker, J.) and their research team in the context of forensic linguistics (Newman et al., 2003), and by a review of forensic linguistic studies prepared by DePaulo et al. (2003) that includes the Newman et al. (2003) study (described below in Study Variables).

The second analysis technique also consisted of a sort and tallying of words; however, in this instance, the words were sorted by word function category (e.g., process type and process type related linguistic features, see Appendix A). Also, the sort was not automated, and was instead hand-coded. The text-data were coded according to the grammatical approach suggested by Asp and de Villiers (2010) that is informed by Systemic Functional Linguistics (SFL). SFL, as a grammar analysis technique, provided a means to organize the particularities of discourse based on language-use features into three grammar categories (ideational, interactional, and organizational –the way in which individuals structure what they say) to achieve a communicative objective. Such an objective's language-use features can be described as discourse features that are rooted in the linguistic resources that are offered by the social semiotic referred to as the standard modern English language.

These same linguistic resources provided a means to code the interlinked and complementary functionality of the standard modern English language system's grammar and semantics in this study's injury-event descriptions in the same way that is has been in the clinical linguistics context (Asp & de Villiers 2010), and everyday talk context (Stillar, 1998). The DPF analysis was conducted on a clause-by-clause basis in each injury-event description case in the sample, and was used to catalogue the word content and word content related structure of the injury-event descriptions by injury-event type and point-of-view. The DPF was also used for the estimate of potential expressions of deceit per the study's Dissimulation of Intent (DoI) composite variable. The DoI was also informed by the grammatical approach suggested by Asp and de Villiers (2010) and by Stillar (1998) (see Study Variables).

The query into potential deceit was made based on the earlier noted challenges that frontline helping professionals face (e.g., physicians) in instances when an injury's physical

markers of injury are not visibly obvious or distinct, appear to not be severe at the time of presentation, and are described as if they were unintentional. A description of the overarching theoretical perspective within which the linguistic analyses were set, Symbolic Interactionism, follows as does a mention of two primary linguistic theoretical perspectives that inform the grammar suggested by Asp and de Villiers (2010).

3.1 Theoretical Perspective

Symbolic Interactionism. Symbolic Interactionism (SI) positions this thesis's inquiry within the meaning-making tradition that posits that human behaviour is based on the meanings that are known by others, that such meanings emerge through social interactions, and that meanings are restructured by individuals through their own process of interpretation of the signs and symbols that are a part of their society's social semiotic and use to address daily experiences that include known or new signs and symbols (Meltzer, Petras, & Reynolds, 1975). SI is a theoretical perspective that was developed in the USA during the 20th century and is based on the principles of the interactionist tradition. It is based on the works of several influential social scientists, including: William James (1842-1910), Charles H. Cooley (1864-1929), John Dewey (1859-1952), and George H. Mead (1863-1910). Mead was, arguably, one of the most influential thinkers in the subsequent conceptualization and development of SI.

More recently, Herbert G. Blumer (1900-1987) and Manford H. Kuhn (1911-1963) diverged in their theoretical stances of SI. For example, Blumer's articulation of SI is deemed naturalistic and non-empirical, which is closer to Mead's conceptualization. In contrast, Kuhn suggested that SI principles could and should be operationalized and used to empirically measure social phenomena (Meltzer et al., 1975). This study follows closer to Kuhn's approach to SI. It was supposed in this thesis that the operationalization and measurement of experiential

phenomenology embedded in injury-event descriptions could be approximated, and that this approximation had the potential to help advance current understandings of what constitutes an injury-event (note that operationalization was done without altering the injury-event descriptions in any way).

SI informed this project in three ways: the valuing of experiential knowledge and its role in understanding social phenomena, a means to conceptualize the empirical study of experiential knowledge, and a justification for the exploration of the potential utility of using experiential knowledge to inform the prevention of ongoing harm causing behaviours in the field of injury prevention. SI offered a conceptual space wherein a view into human experience and behaviour at the individual level (e.g., a child or youth) could be considered as having value as much as it is at the social level (e.g., a child or youth in a social role such as son, daughter, or children and youths as group entities), while emphasizing that both the individual and social levels are understood, maintained, and evolve in relation to each other. As such, the specifically empirical analysis of features associated with psychological and social data gathered at the individual-level can become feasible.

Additionally, SI's individual-level analysis also allows for the conceptualization that a person can have two or more social roles associated with them. All such roles are a part of the individual and inform how they interpret social interactions; therefore, inform how they behave according to their individual and unique interpretation of what others' behaviour means to them. In the case of a child or youth, their social roles can include boy or girl, student, brother or sister, son or daughter, orphan, ward of the court. In the case of an adult, their social roles can include man or woman, employee or employer, employed, unemployed, or retired, brother or sister, son or daughter, father or mother, husband or wife, grandmother or grandfather.

Such a conceptualization was important in this project because the relationship among the intrapsychic, interpersonal, and social context aspects of lived experiences are acknowledged as variables that influence the individual-level during dyad-interactions that include socially based meaning-making processes. The WTC and the DPF linguistic analyses were fittingly situated within SI because the accounting of individual variability within-role as well as between interactants and social contexts is considered as plausible. The variability in expression of the experiential phenomena in this study's injury-event descriptions as conceptualized within SI was also conversant with the variability in expression of the experiential phenomena as interpreted and conveyed through the universal, complex, and inexhaustible meaning-making capacity of the modern standard English language system.

Systemic Functional Linguistics. The proposition that the language system is vast, not random, and varied in the ways that individuals use the grammar to express a particular meaning with a particular purpose within a particular social context, was articulated by M. A. K. Halliday in the 1960s in the language-use model that is now called Systemic Functional Linguistics (Fawcett, 2013; Halliday & Matthiessen, 2014). Halliday's functional approach to the study of language analyses of what people choose to say is done without separating the syntactic and semantic elements of language. This functional perspective allows a view into how the grammatical positioning of one language feature relative to another language feature by a speaker conveys choice in the resulting meaning that is communicated and in the goal outcome of the communicative act which is what the speaker means their interactant to understand. The practical utility of this approach is that the analysis of the grammar in research documents with SFL's Functional Grammar, arguably, then can offer the researcher a view into how an individual or individuals construe experienced events.

Functional Grammar. In this study, Functional Grammar (FG) –one of the primary grammar analysis models drawn upon by Asp and de Villiers (2010) and by Stillar (1998)– was considered as a theoretical perspective and analytic technique that can help describe the experience-based meaning-making (Halliday & Matthiessen, 1999) processes that take place during social interactions. Concerning the application of FG, the injury-event descriptions were explored with the discourse analysis techniques articulated by Asp and de Villiers (2010) that consider language-use patterns to be language behaviour. This is because language-use is observable as a syntactic structure that is inclusive of communicative function, such as making overt or covert references to a participant's agency or intent in an injury-event. Such an applied analysis is possible because syntactic structure is guided by the grammar system in which the structures are constructed.

3.2 Data

Data source. The anonymized data for this study were acquired on-line from the USA's CDC through their National Health Information Survey (NHIS) program. These data are publicly available without any access restrictions. The administration of the NHIS began in 1957 and has continued to the present day. It is an annual, cross-sectional, in-person, household-based interview. The NHIS's yearly samples are designed to provide a nationally representative sample each week; therefore, the data can be analyzed quarterly (Bloomberg & Luke, 2011). Participation in the NHIS is voluntary. Currently, the NHIS is administered by the National Center for Health Statistics (NCHS) and is conducted using a computer-assisted personal interviewing (CAPI) system. The trained interviewer (field representative) collects data from an eligible[33] adult household member and records answers by typing-in the participant's responses

[33] The NHIS describes an eligible household member as "any responsible adult equal to or greater than the age of majority for their state of residence. Any person that meets these requirements may respond to the NHIS health questions for all related

into a CAPI enabled data collection laptop computer. Instructions to the field representatives include "to write, verbatim, the events that occurred" into the open text entry field (CDC, 2010, p. C35). The CAPI software guides the administration process of the NHIS and this process is based on a question-and-answer algorithm. For example, if the interviewee responds 'no' to the NHIS family-level questions about injuries suffered by household members within the previous three months, the CAPI system bypasses the injury section (CDC, 2011a). The annual response rate for the NHIS is approximately 80%. The NHIS is credited as the source of health information for the USA's non-institutionalized and civilian household population (CDC, 2011a) (see Appendix D for details on the NHIS's data access process, sample design, data collection process, and participant confidentiality protocol).

NHIS injury data. The study's sample included injury data from the NHIS for case years 2006-2010. The NHIS's injury section is a part of the Family Core section. Injuries (including poisonings) meet the NHIS inclusion criteria when the injured was a family member from the same household, for whom medical help was sought, and who sustained the injury within the three-month period (91 days) prior to the NHIS interview. The NHIS prepares two separate injury data files for public release. One data file includes the sample-of-injuries file (categorical data) and the other includes the sample-of-injury-event descriptions file (text-data). The categorical data file consisted of 72 variables that included a set of case identifiers to help link separate and different files, like person number, date and time of the injury's occurrence, age and sex of the injured, activity at time of injury, and the location where the injury happened.

The text-data file had 15 variables that also included the set of case identifiers like person number in addition to the per case text-data field and corresponding set of nine follow-up

household members of any age" (CDC, 2010, p. B-4), and related as "include[ing] being related by blood, marriage, or adoption. Consider foster children and wards as related when determining family membership" (CDC, 2010, p. B-5).

questions (for an example, see sub-section *Intentional Self-inflicted Injuries* below; for the question and follow-up questions see Table 2). The capacity of the CAPI text-data field where answers to the open-ended question on how the injury happened are typed into by the NHIS field representative is programmed to hold 300 characters, including spaces. This means that the text-data are not verbatim[34] (CDC, 2011a). An example of the maximum length of a typed-in injury-event description in the CAPI system is provided with a text excerpt that was clipped from the start of this paragraph: "The text-data file had 15 variables that also included the set of case identifiers like person number in addition to the per case text-data field and corresponding set of nine follow-up questions (for an example, see sub-section *Intentional Self-inflicted Injuries* below; for the question and follow-".

Study's data set.

Selection of the intentional injury cases. The publicly available 2006-2010 NHIS data files do not include intentional maltreatment injuries (IMIs) according to the ICD-9-CM E-codes (see subsection Intentional Maltreatment Injuries below to see how IMIs were accounted for). E-codes (external cause of injury codes) are appended to a primary ICD-9-CM diagnosis code to indicate whether an injury was intentional or unintentional. However, the NHIS publicly available cases do[35] include ICD-9-CM E-codes that are listed as stabbing, gunshot wound, other assault, and overdose of any drug or medication (i.e., poisoning) injuries (CDC, 2010), so these cases were included in the study's data set. To account for all potential intentional injuries in the

[34] Verbatim data consist of (a) word-for-word transcriptions that are produced by a trained professional while a person is speaking, such as a court transcriptionist trained to use a stenographer machine that allows for word-for-word accuracy (i.e., without word omissions or word substitutions); (b) recordings that are later transcribed word-for-word and can be checked for word-for-word accuracy against the recording. Because the NHIS field representatives are not trained transcriptionists, use a standard laptop computer's keyboard to transcribe the injury-event descriptions rather than a stenographer machine, the data they enter into the CAPI system cannot be considered verbatim data, so the NHIS injury-event descriptions are non-verbatim and are instead considered to be quasi-verbatim in the present study.

[35] Starting in 2009, the NHIS stopped including ICD-9-CM E-codes for all cases for confidentiality reasons (CDC, 2011a). This means that E-code data were not complete in the data set that were compiled for this project that includes case years 2006-2010.

NHIS data set that were not categorized into one of the above listed set of injuries with an E-code, a variable level from two NHIS variables were chosen to carry out said selection process to avoid investigator bias. The two variables and their corresponding selected level were (1) the variable named ECAUS[36] that was labeled 'Cause of injury/poisoning based on E-codes', and included the variable level 6 = 'Struck by object or person' (2) the variable named IFALLWHY that was labeled 'Cause of fall', and included the variable level 4 = 'Being shoved or pushed by another person' (see Table 4 for the complete list of levels for these two variables). As noted in the Introduction section, three intentional injury types were treated together as a broader intentional injury category based on their common intentional injury-event feature and were: (a) intentional parent-inflicted (intentional maltreatment injuries [IMIs]), (b) intentional non-parent inflicted injury (same/different age-group other person), and (c) intentional self-inflicted injury (with or without the intent to kill oneself). Details on their individual categorization follows.

Intentional maltreatment injuries. The intentional maltreatment injury (IMI) cases came from the set of injury cases coded by the NHIS with the variable codes ECAUS 6 and IFALLWHY 4. For ECAUS 6, a criterion was set to remove cases that were unintentional such as 'She was struck by a falling tree branch while at the park' (unintentional) vs. 'She was struck with a tree branch by her step-father' (intentional). IMI cases were defined as cases for children and youths aged 18-years and under where the relation between the interactants was child/youth and parent. The selection of IMI cases outside of ECAUS 6 and IFALLEHY 4 was done post-hoc by the author during the text-data cleaning process for misspelled[37] words and cases that included interaction information that indicated an IMI (e.g., 'Her mother hit her over the head with a broom stick').

[36] The NHIS's ECAUS variable is distinct and separate from the ICD-9-CM E-code system.

[37] Misspellings were corrected in order to not miss the counting of all the words in the data set by the LIWC (2007) software.

Intentional other-person-inflicted injuries. The cases for the Intentional Other-person-inflicted injuries category came from the NHIS data set that included the variable codes ECAUS 6 and IFALLWHY 4 such as stabbing, gunshot wound, other assault, and poisoning (i.e., overdose of any drug or medication) injuries. Intentional Other-person-inflicted cases were defined as cases for children and youths aged 18-years and under where the relation between the interactants was child/youth and a non-parent of the same, younger, or older age-group. The selection of Intentional Other-person-inflicted injury cases outside of ECAUS 6 and IFALLWHY 4 was done post-hoc by the author during the text-data cleaning process for misspelled words and cases that included interaction information that indicated an Intentional Other-person-inflicted case.

Intentional self-inflicted injuries. Intentional Self-inflicted injury cases came from the text-data file and were selected post-hoc by the author during the text-data cleaning process. Some examples include, "Washed down 50 prescription pills with a bottle of wine" and "I cut my neck and wrists with a razor blade." The category Intentional Self-inflicted injuries included intentional self-inflicted injuries irrespective of motive (e.g., self-harm with or without the intent to kill oneself). The criteria used to include cases in the Intentional-self injury category was the explicit mention of the injury being self-inflicted based on (a) the available text-data that was provided as an answer in the text field for the open-ended question How did the injury happen? was explicitly stated as a self-inflicted injury, such as "I cut my neck and wrists with a razor blade", (b) the text-data entry in an open-ended follow-up question explicitly stated that the injury noted in the injury-event text field was a self-inflicted injury such as "self-inflicted."

Sample composition and demographics. The study's data set included $N = 204$ injury-event description cases that were drawn from the 2006-2010 NHIS data files, and included $n =$

102 intentional injury-event description cases that were case-control matched by age and sex with a random sample of n = 102 unintentional injury-event description cases. The sample's mean age was M = 11.8, SD = 5.3, with an age-range of < 1-18 years-old, and included 57% males (M_{Age} = 12.8, SD_{Age} = 5.2) and 43% females (M_{Age} = 10.6, SD_{Age} = 5.2).

3.3 Study Variables

Case and variable notation. In this section and in the remaining sections the study's number of total cases per analysis was notated with the symbol '*N*', and the variables' and variable levels' frequency count was notated with the symbol '*n*'.

Independent variables. The study's two independent variables were Injury-event Type and Point-of-view. Injury-event Type included three levels that were Intentional, Unintentional, and Ambiguous. The level Ambiguous[38] emerged during data coding and was included because it was considered to be a part of the NHIS's textual context. Point-of-view included two levels that were Parent and Non-parent. The study's Point-of-view variable was based on the NHIS's variable Relationship to Reference Person[39] (RRP). The relationship to the reference person was described by the NHIS as the relationship of the injured child or youth to the reference person coded as the RRP. In the study's sample, the proportion for Parent as RRP was 86.8% (n = 177) relative to the proportion for Non-parent that was 13.2% (n = 27). The variable level Non-parent was created to include eight NHIS RRP variable levels: Household reference person (n = 2), Child of partner (n = 2), Grandchild (n = 13), Brother or Sister (biological/adoptive/in-law/step/foster) (n = 5), Niece or Nephew (n = 2), Roomer or Boarder (n = 1), Ward (n = 1), and Not ascertained (n = 1).

[38] Ambiguous was operationalized in this study as ambiguous interaction roles; for example, in 'She broke her arm', it is not clear who the 'she' refers to (e.g., mother, sister, friend, the injured) based on the available text.

[39] The reference person (RRP) was described by the NHIS as the individual that generally owned or rented the household unit.

Dependent variables. The dependent variables for this study included four sets. Two of the four sets were primary sets. One of the primary sets included the variables for the Word Type Count analysis (Analysis 1 -WTC) that included the word tally by LIWC (2007) word categories for the N = 204 injury-event description cases in the study. The other primary set included the variables for the Discourse Pattern Function analysis (Analysis 2 -DPF) that included the variables from the descriptive grammar analysis that was done at the clause level (565 clauses) for the N = 204 injury-event description cases in the study. The third and fourth sets were each a subset of one of the primary data sets, and each subset consisted of the five selected proxy variables for the estimate of deceit that were drawn from their respective primary data set: from the WTC data subset as Likelihood of Deceit (see below, Table 7, and Analysis Plan), and from the DPF data subset as Dissimulation of Intent (see below, Tables 13a and 13b, and Analysis Plan).

Analysis 1 –WTC variables. The injury-event descriptions' words were parsed with the Linguistic Inquiry and Word Count (LIWC, 2007; Pennebaker et al., 2007) software program into 76 LIWC word type categories (see Appendix B). The LIWC software produced a spreadsheet with count data as a frequency and proportion tally[40] that was inclusive of a possible 464 total language variables at the case level. The 464 language variables are the words in the LIWC data dictionary's four out of five[41] word-type dimensions. Boyd and Pennebaker (2015) listed the four LIWC dimensions as (1) the Standard Linguistic dimension that is inclusive of 22 standard linguistic categories such as pronouns, articles, auxiliary verbs; (2) the Psychological Processes dimension that is inclusive of 32 word type categories for psychological constructs such as affect, relativity, cognitive mechanisms; (3) the Personal Concerns dimension that is

[40] LIWC (2007) yields a frequency count for two variables, one variable is the Word Count per case total, and the other is the variable Words per Sentence per case total; All of the other variables are reported as proportions of the per case total.
[41] The fifth dimension accounts for punctuation.

inclusive of seven personal concern categories such as work, home, leisure activities, (4) the Paralinguistic dimension that is inclusive of three paralinguistic categories that are assents, fillers, and non-fluencies, and (5) the Punctuation dimension that is inclusive of 12 punctuation categories such as periods, commas. Sixty-one (80% out of 76) WTC word type categories were retained and two were excluded. The word type categories that were not retained were from the Paralinguistic and Punctuation dimensions. The variables from the Paralinguistic dimension were excluded because the injury-event descriptions comprised a statement-like description given by a survey participant to an NHIS field representative. As such, the descriptions did not reflect a conversation-like entry where one would expect paralinguistic features (e.g., assents, fillers). The variables from the Punctuation dimension were not included because they were not a part of the study's design.

WTC's data structure. Tests of normality were then done on the WTC's 61 retained word type categories using the normality criteria listed below. The standard metric for tests of normality specific to skewness and kurtosis is a mean of zero and a standard deviation range of -1 to 1. Considering the variability in the NHIS field representatives' data entry style (e.g., range of vocabulary and number of words in each text entry), it was expected that the frequency counts and proportions of the LIWC variables would likely not be normally distributed, and in some instances skewed and/or platykurtic or leptokurtic beyond the standard range criterion of -1 to 1.

To address non-normality, the measure of skewness was set as a range from -2.5 to 2.5, and the measure of kurtosis was set as a range from -2.5 to 7.5 based on the practice parameters that were suggested by Blanca, Arnau, Lopez-Montiel, Bono, and Bendayan (2013) for psychological variables[42] with small samples. Twenty-three WTC (37.7% out of 61) word type

[42] Examples: Psychological variables from the Big-Five Questionnaire, Beck Depression Inventory, State-Trait Anger Expression Inventory, Self-Report Altruism Scale.

categories met the study's skewness and kurtosis inclusion criteria (see Table 5). Of the 23 word type categories, 12 (52.2%) were from the Standard Linguistic dimension and 11 (47.8%) were from the Psychological Processes dimension, and 0 (zero) variables were from the Personal Concerns dimension (see Table 5).

WTC's Likelihood of Deceit (LoD). The Likelihood of Deceit analysis comprised a composite estimate of deceit that was calculated with the five qualified proxy variables for the estimate of deceit. The selection and qualification of the five proxy variables was informed by a study by Newman et al. (2003) and a review by DePaulo et al. (2003) of linguistic features that are associated with expressions of deceit. Four out of the five linguistic features were informed by Newman et al. (2003) and included (1) fewer[43] Personal Pronouns, (2) fewer Exclusive words, (3) more[44] Negative Emotion words, (4) more Motion words. The fifth linguistic feature was informed by DePaulo et al. (2003) and was (5) more Cognitive Mechanisms[45] words (see Table 7).

The LoD proxy variables that comprised the composite LoD variable for the estimate of deceit were also checked for normality. Three out of the five qualified proxy variables (13% out of the study's 23 word type categories from the WTC primary data set) also met the study's skewness and kurtosis inclusion criteria in the LoD data subset context: Personal Pronouns from the Standard Linguistic dimension and Cognitive Mechanisms and Negative Emotions from the Psychological Processes dimension. Of the remaining two proxy variables Motion[46] words and

[43] Fewer, lower, and higher, are references to proportional differences between groups, where a group's proportion is expressed as a proportion relative to total number of words in a group.

[44] See preceding footnote.

[45] The capitalized term Cognitive here is a part of the variable name 'Cognitive Mechanisms' that is from the LIWC (2007) variables list, and is a word type category for words that are associated with cognitive mechanisms/processes like 'think' and 'know'.

[46] Motion: skewness 4.166 and kurtosis 31.641, per WTC's $N = 204$; Exclusive: skewness = 7.491and kurtosis = 65.175, per WTC's $N = 204$.

Exclusive[47] words from the Psychological Processes dimension, Motion[48] words, met the study's skewness and kurtosis inclusion criteria in the LoD data subset context; however, Exclusive words[49] did not but was retained to carry out the query for Likelihood of Deceit (LoD) based on the composition of the LoD composite variable as described above.

The fit of LoD into the estimate of deceit was calculated on a point basis. For example, if an injury-event description level (e.g., Intentional) were to include each of the five Likelihood of Deceit qualified proxy variables coded as Feature Present = 1 relative to another Injury-event Type level (i.e., the comparison levels for Intentional were Unintentional and Ambiguous: Intentional vs. Unintentional and Intentional vs. Ambiguous), it was to be assigned a 5-value (100%). If a level were to include four out of five features, it was to be assigned a 4-value (80%), and so on (see Table 7).

Each of the five proxy variables have been described as expressions of the mental effort that is made in instances when a person chooses to engage in deceitful language-use behaviour (Newman et al., 2003; DePaulo et al., 2003). For example, fewer Personal Pronouns,[50] was associated with cognitive distancing from an event in order to avoid being associated with the event or with the event's participants, or as unfamiliarity with the details that were involved in an event that they did not experience. Unfamiliarity with an event's details was also associated with fewer Exclusive words. This is because truth-tellers tend to talk about what they did do as well as what they did not do to demarcate their non involvement in an event's outcome. For example, 'I saw her fall out of the window, but I didn't open the window –her dad did'. For more Negative Emotion words, their more frequent use was associated with a person experiencing guilt for

[47] Exclusive words examples (LIWC, 2007): but, except, without.
[48] Motion's skewness = 1.056 and kurtosis = 0.022, per LoD1's $N = 66$.
[49] Exclusive's skewness = 7.512 and kurtosis = 58.618, per LoD1's $N = 66$.
[50] Newman et al. (2003) used "fewer self-references" (p. 666) that included first and third person pronouns (p. 670).

engaging in deceit or with guilt associated with the topic under discussion (Newman et al., 2003).

In the case of the qualified proxy variable more Motion words, it was associated with false statements because Motion words (e.g., action verbs) are common in natural language (common, everyday use words) so can be readily accessed by a speaker as compared to less common words. Based on this logic, Motion words are said to allow for a swift and concrete description of an event that does not require complex cognitive processing to construct (Newman et al., 2003). This language-use feature was associated with deceit because the use of more Motion words can work as a means to decenter focus from oneself or another participant onto the motions that lead of the event's outcome, and can facilitate the provision of an action process based explanation that sounds credible. This type of decentering makes the non-mention of the participants possible (Aldridge & Luchjenbroers, 2006); thus, ambiguity on who did what to whom is introduced into an event's description, while allowing for the retention of a clear motion process that makes sense nonetheless.

In the case of more Cognitive Mechanisms, this qualified proxy variable was informed by DePaulo et al. (2003). Cognitive Mechanisms was not informed by Newman et al. (2003) because they described Cognitive Mechanisms as cognitive complexity that included Motion as a covariate, where more Motion words were associated with fewer words that denoted cognitive effort. Instead, the Cognitive Mechanisms construct used in this study was the Cognitive Mechanisms construct that was suggested by DePaulo et al. (2003) that was described as expressions of cogitation without a covariate. Unlike Newman et al. (2003), DePaulo et al.'s (2003) review paper included support for the qualifier 'more' for Cognitive Mechanisms rather

than 'less'[51] based on their 116 paper review. For these two reasons, the DePaulo et al. (2003) construct was used in this study and referred to and qualified as 'more Cognitive Mechanisms' in this study.

Further, to base the preliminary assertions made about the estimate of Likelihood of Deceit's findings within an experimental design, an equal number of injury-event descriptions across the levels of each of the two independent variables was randomly selected for Injury-event Type and Point-of-view to match the number of cases for the level that had the smallest number of cases. For Injury-event Type, Ambiguous had the smallest case count at 22 (10.8% out of N = 204), so 22 cases were randomly selected from Intentional and from Unintentional to obtain the $N_{\text{LoD1}} = 66$[52]. The same process was followed for Point-of-view. In the case of Point-of-view, the reduced total sample was $N_{\text{LoD2}} = 54$[53] (26.5% out of N = 204), because Non-parent had the lowest count at 27 (13.2%, out of N = 204), so 27 cases were randomly selected from Parent to obtain the $N_{\text{LoD2}} = 54$ (see Table 7).

Analysis 2 –DPF variables. The injury-event descriptions were hand coded according to the linguistic categories specified in the descriptive grammar outlined by Asp and de Villiers (2010), and by process type along with their required linguistic elements (see Appendix A). The Discourse Pattern Function (DPF) dependent variables included 41 categorical variables and these were organized according to the descriptive grammar categories (1) Ideational that included 17 variables; (2) Interactional that included 6 variables; (3) Textual Organization that included 10 variables; and (4) Other discourse features that included eight variables (see

[51] Newman et al. (2003).
[52] LoD1 stands for Likelihood of Deceit for Injury-event Type.
[53] LoD2 stands for Likelihood of Deceit for Point-of-view.

Appendix E). A description of the three DPF grammar categories as outlined in Asp and de Villiers (2010) follows.

Grammar and ideational features. The grammar used to outline ideational features takes into account the relationships in a text between its semantic information and its linguistic and discourse structures and patterns. The approach involves analyzing linguistic data to look at the relationships and patterns in the text (e.g., words, syntactic structures), including its processes (e.g., action process verbs), and participant roles[54] in order to note the function of such linguistic features in context (see Appendix A). Participant roles are roles that are associated with commonly held understandings of how social structures work with respect to relationships between and among people, and with the material and institutional structures they live in (e.g., natural or manufactured) (see Figure 2) and are meant to be interpreted and responded to according to such understandings. For example, Asp and de Villiers (2010) describe argument roles as feature units that convey superordinate concepts related to events, relations, and states. Eight argument roles were used to highlight the linguistic detail that was associated with Ideation processes (see Appendix A). Additionally, circumstantial roles were examined because the linguistic features that were associated with them helped contextualize the injury-event. The circumstantial roles examined included:

- Time (They rose early in the morning.)
- Place (They argued in the living room.)
- Manner (They argued loudly.)

Tense Shift was another ideational feature of interest; specifically, the shifting from past to non-past during the description of an injury-event. Tense Shift is a known indicator of the high emotional intensity that can be associated with a lived experience and can be expressed at the

[54] The term 'participant roles' is from Stillar (1998); Asp and de Villiers (2010) used the term 'argument roles'.

time that the event is described in the form of emotion words (Burke & Bradley, 2006). Emotion words can refer to the experiencing of an emotion and the degree of intensity of an emotion (e.g., from somewhat sad to very sad), valence (e.g., sad being negative, and happy being positive), as well as type (e.g., those that convey emotional closeness or distance in relation to another person). Emotion words can therefore be used to identify expressions of what a person conveys as emotional closeness or distance with respect to the experiential dynamic that is denoted in the injury-event descriptions.

Grammar and interactional features. The grammar that is associated with interactional features typically involves a co-construction of roles as well as the participants' expressions of attitude and evaluations about each other and/or the event's context during discourse. These role-based relations involve interactional process that can be identified with three basic speech function contrasts that emerge as statements or exclamations that offer information, questions that seek information, and commands that direct behaviour. The present study's sample included statements that offered information. In the case of evaluative language, it was noted and tracked as positive, neutral, or negative descriptive features (Sam is kind/Sam is normal/Sam is rude).

Grammar and textual organization features. The grammar for message organization (how a speaker chooses to order words in a clause), was conceptualized as the textual function of language that is related to the speaker's objective (Asp & de Villiers, 2010; Halliday & Matthiessen, 2014). The analysis of textual function helped account for instances where textual function (a speaker's goal) was clearly communicated or not. Such clarity is based on whether the text is organized in a way that makes sense (is cohesive and coherent). To evaluate if a text included elements that contributed to the text's cohesiveness and coherence, the linguistic terms focus and prominence were used to show how a person's knowledge of syntactic structures

worked as a resource to identify what information was provided at the start of the clause (focus) or at the end of the clause (prominence). These elements helped trace discourse coherence and intertextuality by noting the relationships between the elements of the text-data within the textual-context from which it emerged (e.g., the NHIS data collection context).

The linguistic analysis tools that can help track explicit, implicit, or no mention of participants, include five subtypes of cohesive relation that were: reference (explicit mention); substitution (explicit mention using a different type of referent for a person, such as 'girl' for 'Sally'); ellipsis (not mentioned explicitly because the person in question is presumed as known by the interactants, e.g., 'and jumped further than anyone else in the long-jump', where 'she' is ellipted because the immediately preceding clause was 'she ran and…'); conjunction (e.g., use of words like 'and' as in the above example); and lexical cohesion (e.g., the use of 'smart' or synonyms of smart throughout the text that would more likely refer to Sally's academic achievement rather than to Sally's athletic achievement).

Textual organization features, focus and prominence. Relatedly, focus and prominence features in the grammar of message organization can work to note how persons organize a communicative act specific to the emphasis they choose to give to the information they share based on where they place each clause element (e.g., process, participant[s]), see Appendix A). Emphasis can be placed at the start of the clause, which is a site in the clause that is referred to as focus. If the emphasis is instead placed at the end of the clause, that site is referred to as prominence. In the example 'Sam cut the girl' the clause's elements are (a) Agent (Sam) as focus; (b) Process (cut) as an affective[55] process, and (c) Patient (the girl) as prominence. The clausal elements that are placed in the focus site can be points of departure of what is shared and

[55] 'Affect' is in the grammatical construction that presents affect with an object so is used to denote a verb; thus, 'affect' refers to the type of action that is associated with a particular verb such as the verb 'to cut' in: The father 'cut' Sam's hand in a fist-fight, where the action to cut affected Sam's previously uncut hand with a cut.

what elements become backgrounded information due to the attention that is drawn by the element in the focus site. Noting what elements are placed in the focus site and what elements are then backgrounded as a result were of special interest in this study for the purpose of identifying language-use patterns and noting how such patterns showed shifts in attention from one clausal element to another. That type of shift, could also be a part of covert mentions of intent; thus, textual structure patterns could potentially also function as markers of deceit. Focus and prominence are individual linguistic features, but are typically considered together because of their interrelated semantic function (see point 7 in Appendix C).

Other variables. In addition, five author created variables were used to code the DPF data. Four of the five variables were specific to tracking the injured child/youth, and the fifth variable was specific to the tracking of other child/youth interactants. Two out of the four variables for the injured child/youth were created under the variable category Participants from the Ideational grammar category to note how the injured child/youth was referred to. The two variables that were used such references were labeled 'Injured Child/Youth' (child/youth mentioned as a person) and 'Injured Child/Youth Role 2' (child/youth mentioned in a different role in a second or subsequent clause). The two variables 'Injured Child/Youth' and 'Injured Child/Youth Role 2' included a variable level called 'Injured Child/Youth Body Part' to help note the instances in which the injured child/youth was referred to as a person (e.g., 'Sally's hand was hurt') or as a body part (e.g., 'The hand was hurt').

The other two author created variables for the injured child/youth were 'Injured Child/Youth Role Shift 1'[56] and 'Injured Child/Youth Role Shift 2' (note that the word 'shift' in these two variables indicated a shift into a different role such as shifting from the role of Agent

[56] Not to be confused with variables used to track number of roles under the Ideational grammar category where the injured child/youth remained in the Patient role even if, for example, they were referred to as a person in the first clause and a body part in the second clause.

in clause one into the role of Patient in the second or subsequent clauses). These two variables were created under the grammar category Other discourse features to track the temporal shifts in the injured child/youth's role. Of note is that the variable 'Injured Child/Youth Role Shift 1' represented a shift from the pre injury-event to the injury-event; thus, this variable denoted the first role given to the injured child/youth in the injury-event description. The variable 'Injured Child/Youth Role Shift 2' represented a second role shift. The fifth variable was specific to noting if another child/youth (vs. an adult) interactant was included in the injury-event description and this variable was labeled 'Another Child/Youth'. Four out of the five author created variables met the study's inclusion criteria (see next paragraph for the criteria), the exception was 'Injured Child/Youth Role Shift 2'.

Inclusion criteria. The first inclusion criterion for the DPF data set was an alpha level of 0.01 ($p < .01$)[57] for the dependent categorical variables, as determined with the statistical technique Fisher's Exact Test. The second inclusion criterion for each of the dependent variables that met the $p < .01$ criterion, was a frequency count of $n \geq$ five per crosstabulation with an independent variable. Out of 41 DPF grammar-based dependent categorical variables (see Appendix E), 12 (29.3%) met the inclusion criteria. Of the 12, nine (75%; 21.9% out of 41) were from Injury-event Type, and three (25%; 7.3% out of 41) were from Point-of-view (see Table 9).

Allowances to the inclusion criteria. On meeting inclusion criteria, of the 12 dependent variables, eight (66.7%; 19.5% out of 41) included a significant ($p < .01$) association, and four (33.3%; 9.8% out of 41) included a marginally non-significant association. Of the four marginally non-statistically significant associations, two concerned the Injury-event Type analysis, and the other two concerned the Point-of-view analysis (see Table 9). The two variables

[57] The alpha level .01 was selected rather than the more commonly used alpha level .05 in the social sciences to control for overall for Type I error.

for Injury-event Type included Tense and Prominence 1. These two variables included a lower-bound confidence interval that was within the study's $p < .01$ statistical significance parameter, so their respective p values that equaled .011 were not used to exclude these two variables from the analyses (see Table 10). The two variables for Point-of-view were Another Child/Youth and Focus 1. This second set of two marginally non-significant associations did not include a lower-bound confidence interval within the study's $p < .01$ statistically significant parameter; rather, they exceeded the significance parameter by 0.004 for Another Child/Youth, and by 0.006 for Focus 1. Because the marginal difference from the significance parameter was less than 1%, they were included in the study to enable a discussion of the one variable, Aspect, that met the $p < .01$ significance criterion for the independent variable Point-of-view.

DPF's Dissimulation of Intent (DoI). Dissimulation of Intent was a composite variable meant to function as an estimate of deceit. This composite variable included a set of five proxy variables from the primary DPF dependent variables set. The five proxy variables were selected and qualified based on their known grammatical function: they can work to shift attention from one participant to another participant or to the context (Asp & de Villiers, 2010). The five linguistic features for the DoI estimate were qualified as fewer[58] or more[59] based on the function of each linguistic feature. For example, when a verb is used outside of its word category, and is instead used as a noun, this means that an event's participants can be excluded (not mentioned) in a description. This exclusion can happen because, unlike a verb, a noun does not implicate participants. This process is called nominalization (see point 7 in Appendix C) and can be illustrated with the verb to injure. When the verb to injure is used in its corresponding word category (verb), one participant is required to carry-out the agent role as the person that does the

[58] Fewer, lower, and higher, are references of proportional differences between groups, where a group's proportion is expressed as a proportion relative to total number of words in a group.
[59] See preceding footnote.

injuring, and another participant is required in the role of patient as the person that undergoes the injury (the exception being self inflicted intentional injuries where the one person is both agent and patient). Whereas, when the verb to injure is used outside of its word category and is instead used as a noun as 'the injury', participants are not implicated in the 'carrying-out' of the injury process with the noun-based use because there is not an action to carry-out as in 'The injury was serious'.

For the DPF's qualified proxy variables for the estimate of deceit, feature 1 was from the Other discourse features grammar category, and features 2 to 5 were from the Textual Organization grammar category. The five language-use features were qualified as (1) less Tense Shift, (2) more Nominalization, (3) more Ergative Verbs, (4) less Focus, and (5) less Prominence. Unique to the DoI was that two estimates of deceit were required to more fully represent the injury-event descriptions based on whether the injured child/youth was ascribed the participant role of Agent (see Table 13a) or of Patient (see Table 13b).

3.4 Analysis Plan

Design. The design used for this study was a case-control match design.

Procedure, Analysis 1 –WTC. For Analysis 1, the Word Type Count (WTC) analysis, the Linguistic Inquiry and Word Count (LIWC, 2007) software program (see Study Variables for a description) was used to parse the injury-events' injury-event descriptions on a word-by-word basis into word type categories according to the LIWC language dimensions (see Appendix B). An example of how the words are parsed by the LIWC software program into the LIWC word type categories by language dimensions follows with the word-type variables Negative Emotion words and Positive Emotion words. The variable Negative Emotion words includes word level

variables like abandon*,[60] abuse*, despair*, and harm*, while the variable Positive Emotion words includes word level variables like love*, glad*, trust*, nice*. The word-type variables Negative Emotion words and Positive Emotion words are, in turn, placed under the broader variable category Affect. Affect is then organized under Affective Processes and, Affective Processes is then arranged under the Psychological Processes dimension.

The WTC analyses involved the use of the injury-event descriptions' frequency and proportion word tally output from the LIWC (2007) software. The data from this tally were analyzed with the Kruskal-Wallis *H* Test[61] for mean rank (MR) comparisons. The Kruskal-Wallis *H* Test was used to identify between-group differences in language-use patterns by Injury-event Type and Point-of-view for the 23 (37.7% out of the 61) dependent variables that met the study's skewness and kurtosis inclusion criteria (see Study Variables and Table 5). For Injury-event Type, the symbols MR_I, MR_U, and MR_A were used to refer to the mean rank for Intentional, Unintentional, and Ambiguous respectively. For Injury-event Type, the analyses and the post-hoc test were used to analyze each of the three level comparisons[62] that were Intentional vs. Unintentional, Intentional vs. Ambiguous, and Unintentional vs. Ambiguous (see Tables 6a and 6b). For Point-of-view, the symbols MR_P, and MR_{NP} were used to refer to the mean rank for Parent and Non-parent respectively that represented the level comparison for Point-of-view (see Table 6c). The mean rank comparison analyses were specific to research question one: (1) Do child and youth injury-event descriptions differ in language-use patterns? How? (1.1) According to the WTC analysis? (1.1.1) By Injury-event Type? and (1.1.2) By Point-of-view?

[60] The asterisk is a space holder that allows the LIWC software to include all words with variants of a word's root (e.g., nice* for nice, nicely, niceness; abuse* for abuse, abused, abusing, abusive, abuser).

[61] The Kruskal-Wallis *H* Test for mean-rank comparisons is considered to be the non-parametric version of the parametric statistical technique called the one-way Analysis of Variance (ANOVA) for mean differences (Kruskal & Wallis, 1952).

[62] For the variable Injury-event Type, the Bonferroni correction was not applied to the mean rank comparisons (1. Intentional vs. Unintentional; 2. Intentional vs. Ambiguous; 3. Unintentional vs. Ambiguous) because the analyses included fewer than four group means (Keselman, Games, & Rogan, 1979).

The WTC analyses also involved an estimate of deceit as Likelihood of Deceit (LoD) with data from the WTC's data set. For the LoD, the number of cases for the levels of the independent variables Injury-event Type and Point-of-view were modified to obtain an equal number of cases across levels for this analysis. The selection was made with the exact number random selection option in SPSS to match the number of cases in the level of the variable with the fewest number of cases which were, $n = 22$ for level Ambiguous from the independent variable Injury-event Type, and $n = 27$ for level Non-parent from the independent variable Point-of-view. This means that the total number of cases for the LoD's Injury-event Type was 66 (22 x 3 levels = 66) and for Point of view was 54 (27 x 2 levels = 54).

The LoD query was undertaken with five qualified proxy variables (described in Study Variables) for the estimate of deceit as LoD that have been associated with expressions of deceit and were: (I) fewer Personal Pronouns, (II) fewer Exclusive words, (III) more Negative Emotion words, (IV) more Motion words (e.g., verbs), and (V) more Cognitive Mechanisms words. As noted earlier in the Study Variables section, the fit of LoD into the estimate of deceit was calculated on a point basis. This proportional approach allowed the reporting of the estimate of deceit as LoD on an ordinal scale from 1-5. (see Table 7).

The LoD differential proportion analysis was followed up with a mean rank comparison that was run with the Kruskal-Wallis *H* Test to get a sense of the association between the five unqualified proxy variables for the estimate of deceit and the two independent variables Injury-event Type and Point-of-view. This was done to better understand the variable level context in which the qualified instantiations of the five proxy variables of deceit took place. The symbols, MR_I, MR_U, and MR_A were used to refer to the mean rank for Intentional (MR_I), Unintentional (MR_U), and Ambiguous (MR_A) for Injury-event Type for the WTC's LoD (see Table 8).

Similarly, the symbols, MR_P and MR_{NP} were used to refer to the mean rank for Parent and Non-parent for Point-of-view (see Table 8). The proportional analysis and the mean rank comparison test were specific to research question two: (2) What are the language-use patterns that are associated with the set of proxy variables used to query for an estimate of potential deceit? (2.1) According to the WTC's estimate of Likelihood of Deceit? (2.1.1) by Injury-event Type and (2.1.2) by Point-of-view?

Procedure, Analysis 2 –DPF. For Analysis 2, the Discourse Pattern Function (DPF) analysis, the descriptive grammar analysis[63] approach outlined by Asp and de Villiers (2010) was used to hand code the injury-events' text-data language-use patterns on a clause-by-clause basis (see Study Variables). Coding values were assigned to the linguistic features in the text based on their grammar-based linguistic function (Asp & de Villiers, 2010) as guided by interaction process features and their constituent linguistic features (see Appendix A), and on whether the linguistic features were present or absent in the clause. For example, for each linguistic feature that was in the text, it was coded as Feature Present = 1 or Feature Absent = 0 (see Study Variables). Asp and de Villiers's (2010) approach to descriptive grammar analyses aligns with the definition of grammar offered by Huddleston and Pullum (2002). Huddleston and Pullum (2002) note that grammar is a means of communicating thoughts and experiences with the common rules or principles by which language functions, where function refers to a system that has structure, and that this structure confers and conveys meaning, including personal goals and intentions. Therefore, a descriptive grammar analysis that is applied with a view to noting the communicative function of texts (Halliday & Matthiessen, 2014), can give insight into a person's ideational, interactional, and grammar guided sense-making choices speakers make. This is

[63] As opposed to prescriptive grammar analysis.

specific to the relationship between words and word order that speakers use when they try to communicate their goals and intentions to others (also referred to as textual organization by Asp & de Villiers, 2010; Halliday & Matthiessen, 2014). This study's DPF descriptive grammar-based language-use features (see Appendix E) were coded based on whether they were present as Feature Present = 1 and whether they were absent as Feature Absent = 0.

Each grammar category was considered as a source of meaning-making markers that would help highlight the type and frequency of the linguistic features that tended to be associated with each other across the clauses of the injury-event descriptions. The utility of such an approach was getting a view into the injury-event descriptions based on their semantically guided syntactic structure and content (e.g., words as chosen by the speakers, rather than by the researcher), that, in turn, were connected and tethered to a specific situational context (e.g., injury-event) within a dyad's specific social-context (e.g., child/youth-parent/caregiver) and a sociocultural context (e.g., child/youth-parent roles, gender roles, roles in the home, roles in institutions like a hospital or a school) by Injury-event Type and Point-of-view.

Unlike the other DPF variables, coherence was coded differently. Coherence was considered in the study, because, while the grammar analysis output provided a tabulation of details on the texts' linguistic constituents, it was also necessary to see if the data output per Injury-event Type and Point-of-view had the feature coherence (see Study Variables). Given that coherence is a complex of inferential processes (Asp & de Villiers, 2010) vs. a discrete variable, coherence was operationalized in this study as the linguistic complex that included data which allowed for the identification of the interactants' roles (e.g., who did what to whom regarding who person x and person y were) within the social context of an injury-event. Based on this simplified operationalization for coherence, the injury-event descriptions for which the question

'who did what to whom' could not be answered based on the available text were coded as Ambiguous; thus, the analyses included three injury-event types: Intentional, Unintentional, and Ambiguous and two point-of-view types: Parent, Non-parent. This means that in this study, its variable Coherence was coded as Feature Present = 1 and Feature Absent = 0 for each level of the independent variables Injury-event Type and Point-of-view in the same way that all the other DPF variables were.

Coding process, DPF. The study's injury-event descriptions' clauses were hand coded by the author under the supervision of an expert coder in clinical discourse (described below). The coding was based on the process coding approach outlined by Asp and de Villiers (2010) with the process labels listed by Stillar (1998) (see Appendix A). In this study, clauses were demarcated by the verb –the process marker– in the clause. The clauses were then coded for the presence or absence of each linguistic features listed in Appendix E. In the three examples that follow, the process marker in the form of a verb is in underline and the clauses are separated by a forward slash: (1) His mother grabbed his arm / and bruised him / and dislocated shoulder; (2) A kid punched her in the eye with his fist / when she was defending her brother; (3) <She> took a bottle of pills because of depression, / was feeling unhappiness with poor living conditions. This type of analysis is referred to by Stillar (1998) as process analysis,[64] because the verbs denote a process and each process type necessarily implicates interactants in specific roles as well as other linguistic constituents that are required to carry out the specified process per the verb type that is used (see Appendix A for examples). Coding disagreements between this study's author and the expert coder in clinical discourse were resolved over email communication with each coder first providing a rationale for their coding decision to the other coder. After each coder read the other

64 Asp and de Villiers (2010) refer to this process as argument role analysis.

coder's coding rationale, then a question and answer discussion followed on why one code was chosen over another code. Based on this discussion, the coders would then arrive at a common understanding of why coding a clause with one process would be more suitable to the case in question rather than coding it with another process, and this was done for the entire sample.

The DPF analyses were based on the same $N = 204$ injury-event descriptions that comprised the WTC data set. However, because the DPF data set included the data for each manually coded clause, the DPF data set consisted of 565 clauses. As noted in the Study Variables section, the Fisher's Exact Test was used with the 41 categorical dependent variables (see Appendix E) with an alpha level of 0.01. Of the 41 variables, 12 (29.3%) met the variable ($p < .01$) and cell size ($n \geq 5$) inclusion criteria (see Table 9). Of the 12 variables, nine (75%; 21.9% out of 41) were from the independent variable Injury-event Type crosstabulation, and three (25%; 7.3% out of 41) were from the independent variable Point-of-view crosstabulation (see Table 9).

A Fisher's Exact Test with the Monte Carlo option was done in SPSS with 10,000 sampled tables and a starting seed of 1517194786, with an alpha level of 0.01. This analysis was used to explore (a) the proportional contribution that each of the dependent variables made to their respective variable's significance ($p < .01$) and to the dependent variables' contribution to (b) the proportional distribution of each variable's feature count per level of the independent variable. The alpha level for this analysis was set at 0.01 rather than 0.05 to control for error from any possible score dependence that can result from the small cell count that is associated with the Fisher's Exact Test's crosstabulations (see Table 11).

For example, for the variable Process, each of its levels' proportional contribution was 43% for Affective, 32% for Motion, and 25% for Designative (see Table 11). Further, using the

level Motion as an example, Motion's proportional distribution across the three levels of the Independent variable was 36% for Intentional, 58% for Unintentional, and 6% for Ambiguous. Viewed this way, each dependent variable level's degree of association with each level of the independent variable could be considered as a representation of a language-use feature in the injury-event descriptions. This means that each dependent variable, with its constitutive set of levels, was considered as a model of a probable instantiation of qualified experiential phenomena that were associated with the study's child/youth injury-event descriptions. The Fisher's Exact Test was used with question one: (1) Do child and youth injury-event descriptions differ in language-use patterns? How? (1.2) According to the DPF analysis? (1.2.1) By Injury-event Type? and (1.2.2) By Point-of-view?

The DPF analyses also involved the estimate of deceit. In this instance the estimate was referred to as Dissimulation of Intent (DoI). The five proxy variables and their qualification was informed by Asp and de Villiers (2010) based on their attention shifting function. For example, the attention that is ordinarily placed on interactants can be shifted away on to context and process elements (e.g., social context with the process 'to argue': 'there was an argument'; material context with the process 'to fall': 'the bookshelf fell') that allow speakers to omit or to marginalize the injury-event's participants in that the identification of agentic behaviour that could be associated with intent in a dyadic interaction (e.g., the person in the Agent role) is made less obvious. The five variables that were used in the proportional analysis for the DoI estimate of deceit included (I) less Tense Shift, (II) more Nominalization, (III) more Ergative Verbs from the Other discourse features grammar category, and (IV) less Focus, and (V) less Prominence

from the Textual Organization grammar category (see Study Variables) (see Tables 14a and 14b). The language-use patterns specific to agency, intent, and deceit[65] were queried for.

The DoI's differential proportion analysis was done for the five proxy variables for DoI with the injured child/youth in the role of Agent and in the role of Patient. Additionally, to explore the degree of association between the independent variables Injury-event Type and Point-of-view with the five unqualified estimate of deceit variables, the Fisher's Exact Test with an alpha level of 0.01 was included as a part of the analyses. The differential proportion and Fisher's Exact Test analyses were specific to research question two: (2) What are the language-use patterns that are associated with the set of proxy variables used to query for an estimate of potential deceit? (2.2) According to the DPF's estimate of Dissimulation of Intent? (2.2.1) by Injury-event Type and (2.2.2) by Point-of-view?

[65] This approach was taken because deceit per se cannot be inferred solely on structuring patterns (e.g., based solely on the text that is on the page). For this reason, like agency and intent, deceit was outlined with language-use patterns that were inclusive of content (words chosen), and syntax and semantics (how chosen words are used).

CHAPTER 4. Analyses and Results

The word-use by word type count (WTC) and the word-use by discourse pattern function (DPF) linguistic analyses helped identify differences in language-use patterns in the USA's National Health Interview Survey's (NHIS) injury-event descriptions by Injury-event Type and Point-of-view. The identified differences, with some interpretation,[66] are presented first in this chapter for the WTC analysis, and then for the DPF analysis. Due to the emergence of the injury-event type Ambiguous[67] during data coding, a comparison among intentional, unintentional, and ambiguous injury-event descriptions was included in the analyses.

Each analysis begins with Research question one that addresses how the sample's language-use patterns were different by Injury-event Type and Point-of-view. Research question two follows, and it explores an estimate of deceit also by Injury-event Type and Point-of-view with a sub-sample of the data set that was used for Research question one. Each research question section begins with a brief summary of its respective data set and a brief caption of the analysis approach that was used to broach it (for details see Analysis Plan). Further, within each research questions' section, sub-sections are included that are specific to the findings for Injury-event Type, Point-of-view, and a set of proxy variables for the estimate of deceit.

The findings in the sub-sections were reported first as a levels analysis for the independent variables Injury-event Type and Point-of-view (i.e., the three levels Intentional, Unintentional, Ambiguous; and the two levels Parent, Non-parent; respectively), and were then reported as an analysis of the dependent variables within the study's body, mind, and context experiential domains by Injury-event Type and Point-of-view. The study's frequency counts

[66] See Appendix F for a sample of the results without such interpretation.

[67] Ambiguous is operationalized in this study as a level of the independent variable Injury-event Type, and is capitalized for this reason and refers to the absence of text that indicates the interaction roles regarding who did what to whom; for example, in the sentence 'She broke her arm' it is not possible to determine who 'she' refers to (e.g., mother, sister, friend, the injured).

were notated in this section with the symbols '*n*' for variable and case counts and '*N*' for total variable and total case counts.

4.1 Analysis 1, Word-type Count

Research Question 1. Do child and youth injury-event descriptions differ in language-use patterns? How? (1.1) According to the WTC analysis? (1.1.1) By Injury-event Type? (1.1.2) By Point-of-view?

4.1.1 Word-type Count (WTC).

The study's 23 WTC dependent variables[68] were analyzed with the Kruskal-Wallis *H* Test for mean rank (MR) comparisons by Injury-event Type and Point-of-view. Of the 23 dependent variables, 16 (69.6%) included a significant mean rank (MR) difference at an alpha level of 0.05. Of the 16, 14 (87.5%; 60.9% out of 23) were for Injury-event Type. The other two (12.5%; 8.7% out of 23) were for Point-of-view and are reported below under subsection 1.1.2 WTC by Point-of-view.

4.1.1.1 WTC by Injury-event Type. The WTC's mean rank (MR) analysis for Injury-event Type included this independent variable's three levels Intentional, Unintentional, and Ambiguous (levels 1 through 3 analysis). Of the 14 statistically significant ($p < .05$) dependent variables for Injury-event Type, seven (50%; 30.4% out of 23) variables were from the Standard Linguistic dimension, and the other half were from the Psychological Processes dimension (see Tables 6a and 6b). Three structural patterns emerged with the WTC and were organized and described first by the LIWC (2007) word categories to provide an overview of the overall data pattern before it was presented by mean rank (MR) per level for Injury-event Type and then by the experiential domains of body, mind, and context. <segment deleted>

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[68] See Study Variables under the Methodology section.

WTC's three structural patterns for Injury-event Type –An overview. Pattern 1 was the 14 variables[69] that included a MR significant difference ($p < .05$). The seven variables from the Standard Linguistic dimension[70] (50%; 30.4% out of 23) were Word Count ($\eta^2 = 0.146$, $p = .001$); Function words ($\eta^2 = 0.140$, $p = .001$); Six Letters or More[71] ($\eta^2 = 0.114$, $p = .001$); Past ($\eta^2 = 0.076$, $p = .001$); Verbs ($\eta^2 = 0.074$, $p = .001$); Auxiliary Verbs ($\eta^2 = 0.070$, $p = .001$); and Articles ($\eta^2 = 0.058$, $p = .003$). The other seven variables were from the Psychological Processes dimension[72] and included Anger ($\eta^2 = 0.104$, $p = .001$); Social Processes($\eta^2 = 0.084$, $p = .001$); Cognitive Mechanisms ($\eta^2 = 0.052$, $p = .005$); overall Affect[73] ($\eta^2 = 0.043$, $p = .013$); Inclusive ($\eta^2 = 0.040$, $p = .017$); Negative Emotion words ($\eta^2 = 0.034$, $p = .033$); and Perceptual Processes ($\eta^2 = 0.032$, $p = .040$) (see Tables 6a, 6b, and Figure 3).

Pattern 2 and Pattern 3 were specific to the descending mean rank order of the 14 variables by the levels of the independent variable Injury-event Type, and this is where the unique emerging structure for each injury-event type became evident with respect to which variables were more likely to be associated with which injury-event type. Pattern 2 was the more common descending mean rank order Intentional,[74] Unintentional, and Ambiguous, that was noted for 11[75] (78.6%) out of the 14 variables. Of these 11 variables, six (55%; 42.9% out of 14) were from the Standard Linguistic dimension and five (45%; 35.7% out of 14) were from the

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[69] The variables are listed in descending effect size order, within LIWC (2007) dimension; Effect size as Eta square (η^2) is reported here as the effect size that is used with the non-parametric statistical technique Kruskal-Wallis *H* Test for mean-rank comparisons, and is calculated as: η^2 = Chi-square/N – 1 (Green & Salkind, 2011, p. 386).

[70] Variables from the Standard Linguistic dimension in the $p > .05$ group were: Personal Pronouns, She/He, Prepositions, Conjunctions, and Pronouns.

[71] The LIWC (2007) variable named Six Letters or More is the variable into which words that are six or more letters long are parsed into.

[72] Variables from the Psychological Processes dimension in the $p > .05$ group were: Biological, Body, Relativity, and Space.

[73] The LIWC (2007) variable Affect is inclusive of positive and negative affect words; thus is referred to in this study as 'overall Affect'.

[74] A higher mean rank (MR) meant that a word's frequency was higher in one injury-event type category vs. another injury-event type category that had a lower MR for the same dependent variable.

[75] Standard Linguistic dimension: Word Count, Function words, Past, Verbs, Auxiliary Verbs, and Articles; Psychological Processes dimension: Anger, Cognitive Mechanisms, Inclusive, Negative Emotion words, and Perceptual Processes.

Psychological Processes dimension. Pattern 3 was the set of the three (21.4% out of 14) remaining variables that had a different[76] descending mean rank order than Pattern 2. Two of the three (14.2% out of 14) were from the Psychological Processes dimension, and the third one (7.1% out of 14) was from the Standard Linguistic dimension.

Overall, Intentional included more (11 out of 14, 78.6%) dependent variables with a MR that was higher than the MR for Unintentional and Ambiguous, Unintentional was not once ranked higher than Intentional or Ambiguous, and Ambiguous was ranked above Intentional and Unintentional twice ('overall Affect' and 'Six Letters or More') and over Unintentional once (Perceptual Processes) (see Tables 6a and 6b). These findings are presented next first by Injury-event Type level to gain an understanding of what word categories were more likely to be associated with one injury-event type over another, and then by body, mind, and context to learn how the associations can inform how injured children and youths are conceptualized at the individual level with data that was gathered at the individual level through injury-event descriptions.

WTC's Kruskal-Wallis H Test analysis for Injury-event Type, by level. The three overall structure patterns outlined above for the levels 1 through 3 analysis for Injury-event Type showed the frequency of words used by LIWC (2007) word categories and dimensions specific to the study's 14 ($p < .05$) dependent variables for Injury-event Type.[77] The objective in the following descriptions for the same data was to show what word categories were more likely to be associated with one injury-event type over another based on the Kruskal-Wallis *H* Test mean

[76] Ambiguous, Unintentional, Intentional for 'Six Letters or More' from the Standard Linguistic dimension; Ambiguous, Intentional, Unintentional for 'overall Affect' from the Psychological Processes dimension; and Intentional, Ambiguous, Unintentional for 'Perceptual Processes' from the Psychological Processes dimension.

[77] It is noted that for the mean rank (MR) post-hoc level comparisons, the data in one instance (e.g., Intentional vs. Unintentional) would show the inverse data pattern for a level comparison between the same two variable levels in a different grouping instance (e.g., Unintentional vs. Intentional). In this study the post-hoc level comparisons that were noted were Intentional vs. Unintentional, Intentional vs. Ambiguous, and Unintentional vs. Ambiguous.

rank level comparisons.

For Intentional, (a) in relation to Unintentional and Ambiguous, Intentional was more likely ($p < .05$) to include a higher mean rank (MR) for the dependent variables Word Count ($\eta^2 = 0.146$, $p = .001$), Function words ($\eta^2 = 0.140$, $p = .001$), references to the Past ($\eta^2 = 0.076$, $p = .001$), Verbs ($\eta^2 = 0.074$, $p = .001$), Auxiliary Verbs ($\eta^2 = 0.070$, $p = .001$), and Articles ($\eta^2 = 0.058$, $p = .003$) from the Standard Linguistic dimension; and Anger ($\eta^2 = 0.104$, $p = .001$), Social Processes ($\eta^2 = 0.084$, $p = .001$), Cognitive Mechanisms words ($\eta^2 = 0.052$, $p = .005$), Inclusive ($\eta^2 = 0.040$, $p = .017$), Negative Emotion words ($\eta^2 = 0.034$, $p = .033$), and Perceptual Processes ($\eta^2 = 0.032$, $p = .040$) from the Psychological Processes dimension; (b) in relation to Unintentional only (post-hoc), Intentional was more likely ($p < .05$) to include a higher MR for the dependent variable Word Count ($\eta^2 = 0.064$, $p = .001$), Auxiliary Verbs ($\eta^2 = 0.042$, $p = .006$), Function words ($\eta^2 = 0.036$, $p = .011$), references to the Past ($\eta^2 = 0.033$, $p = .014$), Verbs ($\eta^2 = 0.022$, $p = .046$), from the Standard Linguistic dimension; and Anger ($\eta^2 = 0.072$, $p = .001$), Social Processes ($\eta^2 = 0.057$, $p = .001$), Perceptual Processes ($\eta^2 = 0.033$, $p = .014$) from the Psychological Processes dimension; and (c) in relation to Ambiguous only (post-hoc), Intentional was more likely ($p < .05$) to include a higher MR for the dependent variable Function words ($\eta^2 = 0.256$, $p = .001$), Word Count ($\eta^2 = 0.239$, $p = .001$), Verbs ($\eta^2 = 0.143$, $p = .001$), references to the Past ($\eta^2 = 0.131$, $p = .001$), Articles ($\eta^2 = 0.113$, $p = .001$), and Auxiliary Verbs ($\eta^2 = 0.102$, $p = .001$), from the Standard Linguistic dimension; and Anger ($\eta^2 = 0.127$, $p = .001$), Social Processes ($\eta^2 = 0.122$, $p = .001$), Cognitive Mechanisms words ($\eta^2 = 0.107$, $p = .001$), Inclusive ($\eta^2 = 0.085$, $p = .004$), and Negative Emotion words ($\eta^2 = 0.068$, $p = .009$) from the Psychological Processes dimension (see Tables 6a and 6b).

For Unintentional, (a) in relation to Intentional and Ambiguous, Unintentional was not

more likely ($p > .05$) to include a higher MR for any of the dependent variables; (b) in relation to Intentional only (post-hoc), Unintentional was not more likely ($p > .05$) to include a higher MR for any of the dependent variables; and (c) in relation to Ambiguous only (post-hoc), Unintentional was more likely ($p < .05$) to include a higher MR for the dependent variables Function words ($\eta^2 = 0.130$, $p = .001$), Word Count ($\eta^2 = 0.099$, $p = .001$), Articles ($\eta^2 = 0.077$, $p = .002$), Verbs ($\eta^2 = 0.059$, $p = .007$), and references to the Past ($\eta^2 = 0.047$, $p = .016$) from the Standard Linguistic dimension; and Cognitive Mechanisms ($\eta^2 = 0.062$, $p = .005$), and Inclusive ($\eta^2 = 0.047$, $p = .016$), from the Psychological Processes dimension (see Tables 6a and 6b).

For Ambiguous, (a) in relation to Intentional and Unintentional, Ambiguous was more likely ($p < .05$) to include a higher MR for the dependent variable Six Letters or More ($\eta^2 = 0.114$, $p = .001$) from the Standard Linguistic dimension; and overall Affect ($\eta^2 = 0.043$, $p = .013$) from the Psychological Processes dimension; (b) in relation to Intentional only (post hoc), Ambiguous was more likely ($p < .05$) to include a higher MR the dependent variable Six Letters or More ($\eta^2 = 0.229$, $p = .001$); and (c) in relation to Unintentional only (post hoc), Ambiguous was more likely ($p < .05$) to include a higher MR for the dependent variables Six Letters or More ($\eta^2 = 0.109$, $p = .001$), and overall Affect ($\eta^2 = 0.054$, $p = .001$) (see Tables 6a and 6b).

The description of the language-use data patterns by level comparisons of the independent variable Injury-event Type listed above provided a variable centered view of what words were more likely to be associated with a type of injury-event vs. another. The language pattern descriptions that follow show the same data, but in a configuration that facilitated an understanding of how the language patterns looked like when the injured was considered as a person that is comprised of a body, mind, and context, rather than as an injury outcome.

WTC's Kruskal-Wallis H Test analysis for Injury-event Type, by body, mind, and context and LIWC (2007) dimensions. The body per the words in LIWC's Psychological Processes dimension: This LIWC dimension included the variable Body and it did not include a statistically significant difference ($p > .05$) in the mean rank (MR)[78] comparison, but had Ambiguous ranked first followed by Intentional and Unintentional, even though Unintentional included the highest case count. In contrast, references to physiological processes of perception that were represented by the variable Perceptual Processes (e.g., see, hear, feel), was statistically significant ($\eta^2 = 0.032$, $p = .04$), had Intentional ranked first followed by Ambiguous and Unintentional, and included one significant post-hoc test difference ($p < .05$) between Intentional and Unintentional ($\eta^2 = 0.033$, $p = .014$; $MR_I = 99.94$, $MR_U = 85.02$) even though Unintentional included the highest case count. This means that intentional injury-event descriptions included more references to Perceptual Processes than unintentional injury-event descriptions at a rate greater than chance (see Tables 6a and 6b). The greater use of perceptual processes words has been associated with expressions of truth telling because first-hand knowledge of an actual event's perceptual details is typically only available to persons that were involved or present at an event (DePaulo et al., 2003; Adams & Jarvis, 2006).

The mind per the words in LIWC's Psychological Processes dimension: The variable Cognitive Mechanisms (e.g., think, know) had Intentional ranked first followed by Unintentional (even though Unintentional included a higher case count) and Ambiguous, and included two significant differences ($p < .05$) out of the three post-hoc mean rank comparisons. One post-hoc significant difference was between Intentional and Ambiguous ($\eta^2 = 0.107$, $p = .001$; $MR_I = 55.95$, $MR_A = 33.23$), and the other was between Unintentional and Ambiguous ($\eta^2 = 0.062$, $p =$

[78] For this section, the symbols, MR_I, MR_U, and MR_A were used to refer to the mean rank for Intentional (MR_I), Unintentional (MR_U), and Ambiguous (MR_A).

.005; MR_U = 67.04, MR_A = 44.07). This means that intentional and unintentional injury-event descriptions included more references to Cognitive Mechanisms than ambiguous injury-event descriptions at a rate greater than chance. The greater use of Cognitive Mechanisms has been associated with the greater effort that is required to describe an event in a way that is different from the way that the event actually happened. This can be the case in instances when a person wants to evade culpability (self or other), so they modify an event's description (Newman et al., 2003; DePaulo et al., 2003).

Concerning affect, the variable overall Affect[79] had Ambiguous ranked first (even though Ambiguous included the smallest case count) followed by Intentional and Unintentional, and included one significant difference ($p < .05$) out of three post-hoc mean rank comparisons. The post-hoc difference was between Unintentional and Ambiguous (η^2 = 0.054, p = .001; MR_U = 59.28, MR_A = 80.43). This means that ambiguous injury-event descriptions included more references to overall Affect than unintentional injury-event descriptions at a rate greater than chance. Expressions of affect have been associated with psychological cues to thought processes, emotional states, intentions, and motivations (Tausczik & Pennebaker, 2010), and with truthful accounts (Bond & Lee, 2005). However, the expression of affect is meant to be congruent with an experienced event's context (Pennebaker & Chung, 2011; Vrij et al., 2007). Expressions of affect range from positive to negative, and positive affect is not fully congruent with an injury outcome. Instead, a discrepancy between affect type and event type (e.g., positive affect and an injury outcome), has been interpreted as a strategy to present an event's negative outcome as less serious to avoid culpability (DePaulo et al., 2003).

[79] The LIWC (2007) variable Affect includes words for positive and negative affect, so is referred to in this thesis as 'overall Affect'.

With respect to Negative Emotion words, a sub-category of overall Affect, this variable had Intentional ranked first (even though Unintentional included a higher case count) followed by Unintentional and Ambiguous, and included one significant difference ($p < .05$) out of three post-hoc mean rank comparisons. The difference was between Intentional and Ambiguous ($\eta^2 = 0.068$, $p = .009$; $MR_I = 54.78$, $MR_A = 37.41$). This means that intentional injury-event descriptions included a higher frequency of Negative Emotion words than ambiguous injury-event descriptions at a rate greater than chance. Following from the observation that was made for overall Affect, the use of Negative Emotion words would be considered to be congruent with an injury outcome (Pennebaker & Chung, 2011; Vrij et al., 2007). For this reason, it could then be the case that such congruence constitutes a more accurate representation of the experienced injury-event and the expression of affect, where greater accuracy could contribute to a more forthright disclosure of affect, based on the inclusion of more descriptive detail (DePaulo et al., 2003) for Intentional given its higher MR and significant post-hoc test in the Intentional vs. Ambiguous level comparison for the variable Word Count.

Concerning expressions of negative affect specific to anger, the variable Anger had Intentional ranked first (even though Unintentional included a higher case count), followed by Unintentional and Ambiguous, and included two significant differences ($p < .05$) out of three post-hoc mean rank comparisons. One difference was between Intentional and Unintentional ($\eta^2 = 0.072$, $p = .001$; $MR_I = 105.18$, $MR_U = 81$), and the other difference was between Intentional and Ambiguous ($\eta^2 = 0.127$, $p = .001$; $MR_I = 55.87$, $MR_A = 33.50$). This means that intentional injury-event descriptions included more references to Anger than unintentional and ambiguous injury-event descriptions at a rate greater than chance. Notably, the significant mean-rank differences ($p < .05$) showed that Anger ($\eta^2 = 0.104$, $p = .001$), included the highest effect size

specific to the expression of affect as compared to Negative Emotion words ($\eta^2 = 0.034$, $p = .033$), and overall Affect ($\eta^2 = 0.043$, $p = .013$), despite the fact that Anger, as a sub-category of Negative Emotion words and overall Affect, was tallied by LIWC once in each of its corresponding categories in addition to its own (see Analysis Plan). This means that Intentional was more likely to include more expressions of affect as words that were associated with the lexical category anger vs. other expressions of affect that are associated with lexical categories for negative emotions or overall affect more generally. This finding for Intentional may be indicative of the expression of anger that is made by the person who describes an injury-event in which one person's right to personal safety is violated.

The context per the words in LIWC's Psychological Processes dimension: In terms of the interactional and referential aspects of the study's injury-event descriptions' expression of Inclusive references (e.g., and, both, include) with Social Processes (e.g., we, family, humans, friends) as well as interactions (e.g., talk, listen, ask) were also represented in the text-data. This was further indexed by the use of verbs and their corresponding auxiliary verbs (described below). The variable Inclusive had Intentional ranked first followed by Unintentional and Ambiguous, and included two significant differences ($p < .05$) out of three post-hoc mean rank comparisons. The post-hoc differences were between Intentional and Ambiguous ($\eta^2 = 0.085$, $p = .004$; $MR_I = 55.38$, $MR_A = 35.27$) and between Unintentional and Ambiguous ($\eta^2 = 0.047$, $p = .016$; $MR_U = 66.46$, $MR_A = 46.82$). This means that intentional and unintentional injury-event descriptions included more references for Inclusive than ambiguous injury-event descriptions at a rate greater than chance.

For the variable Social Processes, Intentional was ranked first followed by Unintentional and Ambiguous, and included two out of three significant differences ($p < .05$) in the post-hoc

mean rank comparisons. One post-hoc difference was between Intentional and Unintentional (η^2 = 0.057, p = .001; MR_I = 105.72, MR_U = 80.59), and the other was between Intentional and Ambiguous (η^2 = 0.122, p = .001; MR_I = 56.36, MR_A = 31.75). This means that intentional injury-event descriptions included more references to Social Processes than unintentional and ambiguous injury-event descriptions at a rate greater than chance. Social Processes includes the sub-categories, Family, Friends, and Humans (e.g., adult, boy).

The context per the words in LIWC's Standard Linguistic dimension: The words that included expressions of the interactional and referential aspects of the study's injury-event descriptions per the Standard Linguistic dimension included verbs and their corresponding auxiliary verbs (noted above and described here). The variable Verbs had Intentional ranked first followed by Unintentional and Ambiguous, and included three out of three significant differences ($p < .05$) in the post-hoc mean rank comparisons. The three post-hoc differences were between (i) Intentional and Unintentional (η^2 = 0.022, p = .046; MR_I = 100.1, MR_U = 84.89); (ii) Unintentional and Ambiguous (η^2 = 0.059, p = .007; MR_U = 66.73, MR_A = 45.52); and (iii) Intentional and Ambiguous (η^2 = 0.143 p = .001; MR_I = 56.6, MR_A = 30.89). This means that intentional injury-event descriptions included more references to Verbs than unintentional and ambiguous injury-event descriptions, as did unintentional as compared to ambiguous injury-event descriptions, at a rate greater than chance. The inclusion of more verbs reflected that a greater number of processes were considered necessary to describe how the injury-event's injury outcome happened in intentional injury-event descriptions.

For the variable Auxiliary Verbs, Intentional was ranked first followed by Unintentional and Ambiguous, and included two post-hoc significant differences ($p < .05$). The post-hoc differences were between Intentional and Unintentional (η^2 = 0.042, p = .006; MR_I = 102.64,

MR_U = 82.96), and between Intentional and Ambiguous (η^2 = 0.102, p = .001; MR_I = 55.54, MR_A = 34.68). This means that intentional injury-event descriptions included more references to Auxiliary Verbs than unintentional and ambiguous injury-event description at a rate greater than chance, and this finding was congruent and consistent with the finding for Verbs. Auxiliary verbs and verbs are typically co-located in text.

Auxiliary Verbs, were used in communicating temporal dimensions of an event other than tense such as progressive aspect (e.g., that an injury-event happened during a span of time when a person 'was going' to the store to pick up milk). In terms of more obvious references to time, the text-data included references made to the past. For the variable Past, Intentional was ranked first followed by Unintentional and Ambiguous, and included three significant differences ($p < .05$) out of the three post-hoc mean rank comparisons. The post-hoc differences were between Intentional and Unintentional (η^2 = 0.033, p = .014; MR_I = 102.01, MR_U = 83.44), Unintentional and Ambiguous (η^2 = 0.047, p = .016; MR_U = 66.29, MR_A = 47.59), and Intentional and Ambiguous (η^2 = 0.131, p = .001; MR_I = 56.34, MR_A = 31.82). This means that intentional injury-event descriptions included more references to Past than unintentional and ambiguous injury-event descriptions, and that unintentional injury-events included more references to Past than Ambiguous at a rate greater than chance, and this finding is also congruent and consistent with the finding for Verbs. Past and verbs co-occur.

In relation to the use of verbs on their own or with a corresponding auxiliary verb, both types of use can be helpful in featuring detail of the action that took place during an injury-event. That is, both types of use can yield an understanding of who did what to whom, and with what. This is especially the case when verbs' semantic and referential features in coactive events are articulated further with function words. In the case of overall function words, the variable

Function words had Intentional ranked first followed by Unintentional and Ambiguous, and included three statistically significant differences ($p < .05$) in the post-hoc mean rank comparison. The post-hoc differences were between Intentional and Unintentional ($\eta^2 = 0.036$, $p = .011$; $MR_I = 102.82$, $MR_U = 82.82$), Unintentional and Ambiguous ($\eta^2 = 0.130$, $p = .001$; $MR_U = 69$, $MR_A = 34.91$), and Intentional and Ambiguous ($\eta^2 = 0.256$, $p = .001$; $MR_I = 58.78$, $MR_A = 23.05$). This means that intentional injury-event descriptions included more Function words relative to unintentional and ambiguous injury-event descriptions, and that unintentional injury-events relative to ambiguous injury-events included more references to Function words at a rate greater than chance.

With respect to specific types of function words, such as those that are represented by the variable Articles which is a categorized under the variable Function words, Intentional was ranked first followed by Unintentional and Ambiguous, and included two significant differences ($p < .05$) out of three post-hoc mean rank comparisons. One post-hoc difference was between Intentional and Ambiguous ($\eta^2 = 0.113$, $p = .001$; $MR_I = 55.82$, $MR_A = 33.68$), and the other between Unintentional and Ambiguous ($\eta^2 = 0.077$, $p = .002$; $MR_U = 67.28$, $MR_A = 42.95$). This means that intentional and unintentional injury-event descriptions included more references to Articles as compared to ambiguous injury-event descriptions at a rate greater than chance.

More specific to the structure of the injury-event descriptions (i.e., number of words per description), the variable Word Count had Intentional ranked first followed by Unintentional and Ambiguous, and included three significant differences ($p < .05$) out of three post-hoc mean rank comparisons. The post-hoc differences were between Intentional and Unintentional ($\eta^2 = 0.64$, $p = .001$; $MR_I = 106.63$, $MR_U = 79.9$), Unintentional and Ambiguous ($\eta^2 = 0.099$, $p = .001$; $MR_U = 68.23$, $MR_A = 38.5$), and Intentional and Ambiguous ($\eta^2 = 0.239$, $p = .001$; $MR_I = 58.52$, $MR_A =$

24). This means that intentional injury-event descriptions included more words as tallied by the variable Word Count than unintentional and ambiguous injury-event descriptions, as did unintentional injury-event descriptions as compared to ambiguous injury-event descriptions at a rate greater than chance. This finding is congruent with Intentional being ranked first across the other five (out of six, 83.3%) dependent variables from the Standard Linguistic dimension.

Concerning structure at the word level, the variable 'Six Letters or More' (i.e., word length), this variable included the unique distinctive feature that was its more frequent inclusion in Ambiguous as demonstrated by Ambiguous getting (despite Ambiguous having the smallest case count) ranked first followed by Unintentional and then Intentional. Six Letters or More included two significant differences ($p < .05$) out of three post-hoc mean rank comparisons. The post-hoc differences were between Intentional and Ambiguous ($\eta^2 = 0.229$, $p = .001$; $MR_I = 43.65$, $MR_A = 77.39$), and between Unintentional and Ambiguous ($\eta^2 = 0.109$, $p = .001$; $MR_U = 57.50$, $MR_A = 88.77$). This means that ambiguous injury-event descriptions included more words that were Six Letters or More as compared to intentional and unintentional injury-event descriptions at a rate greater than chance.

Notably, Six Letters or More included an inverse mean rank order (Ambiguous, Unintentional, and Intentional) than the more frequently observed mean rank order (Intentional, Unintentional, Ambiguous) that was noted for most of the variables (11 out of 14, 78.6%). This is unique to this study's findings in that Ambiguous had a smaller case count than Intentional and Unintentional, and longer words, such as those that are indexed by Six Letters or More, are arguably less frequent in daily discourse as compared to shorter[80] words that are more common and that require less effort to retrieve (Shannon, 1950; Zipf, 1949; Ferrer i Cancho & Solé,

[80] The average word length in modern standard English has been estimated to be 4.5 letters (Shannon, 1950).

2003). This is in contrast to the greater cognitive effort that is associated with the use of longer words when describing an event (Criss, Aue, & Smith, 2011). The assumption would be, then, that Ambiguous would include a low frequency count for Six Letters or More, and not a higher frequency count than the other injury-event categories (Intentional, Unintentional) that had a larger case count. However, such an assumption was not supported in this study.

The structure of the injury-event descriptions (i.e., number of words per description, 'Word Count') and structure at the word level, (i.e., word length, 'Six Letters or More') were noted at the end of this body, mind, and context schematic so that the experiential context for which they provide structure could be outlined first. Then noting that the two variables Word Count and Six Letters or More are language-use elements that more closely correspond to the mind domain would make sense. Word Count and Six Letters or More are a part of the background structure that represent expressions of the choices made when providing an injury-event description. This summary per the study's experiential domains of body, mind, and context provided an outline on how the descriptions of child and youth injury-event outcomes are described within a schematic that considers the injured as a person rather than as a body only.

4.1.1.2 WTC by Point-of-view

The Word Type Count (WTC) analysis for Point-of-view included the independent variable's two levels Parent and Non-parent. Of the study's 23 dependent variables that were analyzed with the Kruskal-Wallis *H* Test for mean rank (MR) comparisons,16 (69.6%) included a significant MR difference at an alpha level of 0.05. Of the 16 variables, two (12.5%; 8.7% out of 23) were for Point-of-view[81] and included Verbs and Past from the LIWC's (2007) Standard

[81] The other 14 variables were for Injury-event Type and were described and reported on in the preceding subsection.

Linguistic dimension (see Table 6c). The two symbols MR_P and MR_{NP} were used to refer to the mean rank for Parent and Non-parent.

WTC's structural patterns for Point-of-view –An overview. Non-parent was ranked higher than Parent for Verbs and references to the Past based on frequency count, and this was despite Parent having a larger case count (177, 86.8% out of $N = 204$) as compared to Non-parent (27, 13.2% out of $N = 204$).

WTC's Kruskal-Wallis H Test analysis for Point-of-view, by level. Non-parent, as compared to Parent (even though Parent included a greater case count), was more likely ($p < .05$) to include a higher MR of the variable Verbs ($\eta^2 = 0.016$, $p = .029$, $MR_P = 98.8$, $MR_{NP} = 126.9$) and Past ($\eta^2 = 0.026$, $p = .023$, $MR_P = 99.0$, $MR_{NP} = 125.4$) at a rate greater than chance. This means that for Parent as compared to Non-parent was not more likely ($p > .05$) to include a higher frequency of the variables Past and Verbs at a rate greater than chance.

Summary for the WTC's mean rank comparison for Point-of-view, by level: Two points were notable for Point-of-view: It only included two statistically significant ($p < .05$) variables, Verbs and Past, as compared to Injury-event Type that included 14 (87.5%) out of the total 16 statistically significant ($p < .05$) for the WTC sample. Also, Non-parent included a higher mean rank as compared to Parent for the variables Verbs and Past even though the case count for Non-parent was smaller ($n = 27$, 13.2% out of $N = 204$) than it was for Parent ($n = 177$, 86.8% out of $N = 204$). The smaller number (two) of dependent variables for Point-of-view that were statistically significant ($p < .05$) may have been due to a greater commonality in word-use specific to describing child/youth injuries from the point-of-view of household adults, irrespective of the adult's relationship to the child/youth.

In the case of the variable Past, the lower mean rank for Parent could be due to less

emotional social distance that is more likely to exist between the injured child/youth and a parent as compared to a person in a non-parent role. This observation is supported by research on adult provided event descriptions. The study looked at the impact that experienced emotional intensity can have on how a past emotional upheaval is described, especially when the upheaval is of an intensity that can be conducive to psychological trauma when witnessed (McIsaac & Eich, 2004). This impact has also been reported for instances in which adults' experienced emotional intensity was based on heard-of accounts rather than a witnessed event but that occasioned an emotional upheaval nonetheless (van Toledo & Seymour, 2013). Either case may have reflected the circumstances of some of the injury-event descriptions that were reported to the NHIS. In both instances, the experienced event may have been described with fewer references to the past, and instead included more references to the present. This is because the experienced emotional upheaval could have impacted the way in which the affected person in the Parent role described the event, which was less often as a past event (McIsaac & Eich, 2004).

Additionally, Tausczik and Pennebaker (2010) noted that study participants that had reported on a previously disclosed emotional upheaval were more likely to use the past tense, while participants that reported on a previously undisclosed event were more likely to use the present tense. If NHIS Parent participants had not already disclosed the injury-event through the process of description (e.g., had not cognitively processed the injury-event vs. only experienced it), then this could also be a plausible reason for the observed lower use of Past for Parent in the present study. In the case of the variable Verbs, the lower mean rank for Parent could be due to the relationship between the expressions of references to the Past and the variable Verbs. For Point-of-view, it is likely that the verbs were the linguistic element that was marked with the past tense given that other tense related variables were not included in the data set ($p > .05$).

WTC's Kruskal-Wallis H Test analysis for Point-of-view, by body, mind, and context and LIWC (2007) dimensions. The body per the words in LIWC's (2007) Standard Linguistic dimension: The variables Body and Perceptual Processes were not directly referred to in the analyses for Point-of-view. However, the body was indirectly referred to through the variable Verbs ($\eta^2 = 0.029$, $p = .016$; $MR_P = 98.80$, $MR_{NP} = 126.9$).[82] The indirect reference for body involved verbs that denoted body movements, such as motion verbs. Verbs were accounted for here under the body dimension and below under the study's context dimension in order to be consistent with the way in which the variable Verbs was treated earlier in the Injury-event Type analysis. Under body, Verbs were considered as expressions of the type of interactional and referential aspects of the interactions that were noted in the study's injury-event descriptions. This is because verbs denote interactants' roles and contextual items that need to be accounted for. For example, in the case of the verb 'to cut', the verb implies the action of the person that does with their body during the cutting and the body of the person that is cut (e.g., self or other), as well as the cutting item.

The mind per the words in the LIWC's Standard Linguistic dimension: The mind was not directly referenced in the Point-of-view analyses in the way it was for Injury-event Type, but was indirectly referred to through the variable Past. The process of describing events in the past involves the mind in the form of mental cogitation that is related to a lived experience, whether experienced first- or second-hand as noted above. For the variable Past, there was a significant difference ($p < .05$) between the mean rank (MR) for Parent and Non-parent, where Non-parent included a higher mean rank than Parent ($\eta^2 = 0.026$, $p = .023$; $MR_{NP} = 125.43$, $MR_P = 99$). This

[82] For this section, the symbols, MR_P and MR_{NP} were used to refer to the mean rank for Parent (MR_P), and Non-parent (MR_{NP}).

means that Non-parent cases included more references to Past than Parent cases at a rate greater than chance.

The context per the words in LIWC's Standard Linguistic dimension: As noted under the body dimension, the words that included expressions of interactional and referential features in language-use between the interactants in the study's injury-event descriptions included verbs. For the variable Verbs, a significant difference ($p < .05$) was identified and showed that Non-parent included a higher mean rank than Parent ($\eta^2 = 0.029$, $p = .016$: $MR_{NP} = 126.85$, $MR_P = 98.79$). This means that Non-parent cases included a higher frequency of the variable Verbs than Parent at a rate greater than chance.

Summary from the view of the experiential dimensions of body, mind, and context: For Point-of-view, this approach provided a limited yet informative outline of how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context per the variable levels Parent and Non-parent. The study's data were suggestive of an overall general similarity in the way in which adults described child and youth injuries; that the variability observed in injury-event descriptions is mostly represented by Verbs and references to the Past; a tendency for the descriptions to differ based on the nature of the relationship between the adult and the child such that of parent- or non-parent-child/youth; and a higher likelihood for non-parent injury-event descriptions to include a higher frequency of the descriptors that were specific to the dependent variables Verbs and Past. The paucity of data that were available for analysis with Point-of-view highlighted the need to approach the study of paediatric injury-events by Injury-event Type –the actual phenomenon under study– specifically with the categories Intentional vs. Unintentional at the least, and more fully with the categories Intentional, Unintentional, and Ambiguous. This is necessary in order to better understand the

phenomenological features that are associated with the body, mind, and context experiential domains that are common and unique to injury-event descriptions by injury-event type.

Research Question 2. What are the language-use patterns associated with the set of proxy variables used to query for an estimate of potential deceit? (2.1) According to the WTC's estimate of Likelihood of Deceit? (2.1.1) By Injury-event Type? (2.1.2) By Point-of-view?

4.1.2 WTC's Likelihood of Deceit (LoD)

The total number of cases for the Likelihood of Deceit (LoD) estimate included a sample of (a) 66 (32.4% out of *N* = 204) cases (injury-event type descriptions) for Injury-event Type, 44 (22 Intentional; 22 Unintentional) of which were randomly selected and case control matched by age and sex with the 22 (10.8% out of *N* = 204) cases for Ambiguous, and (b) 54 (26.5% out of *N* = 204) cases for Point-of-view, 27 (Parent) of which were randomly selected and case control matched by age and sex with the 27 (13.2%, out of *N* = 204) cases for Non-parent (see section Study Variables). This was done to run the estimate of deceit on an equal number of cases per group design for Injury-event Type and Point-of-view.

The WTC's Likelihood of Deceit (LoD) estimate included five qualified dependent proxy variables for the estimate of deceit. The proxy variables were qualified as 'more' or 'fewer' according to the proportional linguistic features that have been associated with each of the selected qualified variables in the context of deceit research (Newman et al., 2003; DePaulo et al., 2003) and coded as Feature Present = 1 or Feature Absent = 0 for Injury-event Type and Point-of-view in their respective level comparison (see Table 7).

The second type of query that was done with the proxy variables of deceit included an analysis with the Kruskal-Wallis *H* Test for mean rank comparisons with the unqualified (i.e., without the 'more' or 'fewer' qualifiers) proxy variables to contextualize the qualified versions

for the independent variables Injury-event Type and Point-of-view (see Table 8). This was done to see if any of the level comparisons were statistically significant ($p < .05$) in a context as estimated by a different statistic. The findings for Injury-event Type are presented first below.

4.1.2.1 WTC's LoD for Injury-event Type

WTC's LoD structural patterns for Injury-event Type –An overview. The differential proportion analysis for Injury-event Type did not include a five out of five Feature Present = 1 or Feature Absent = 0 pattern across each level of the independent variable Injury-event Type's Intentional vs. Unintentional, Intentional vs. Ambiguous, and Unintentional vs. Ambiguous level comparisons (see Table 7). In the case of Intentional, this variable level was the least similar to the estimate of LoD in the Intentional vs. Unintentional level comparison. In this instance, Intentional included one out of the five qualified proxy variables as Feature Present = 1. In the same level comparison, Unintentional included two out of the five qualified proxy deceit variables with a Feature Present = 1. In contrast, in the case of the Unintentional vs. Ambiguous level comparison, Unintentional was the most similar to the estimate of LoD with four out of the five qualified proxy variables with a Feature Present = 1. In the same level comparison, Ambiguous included one out of the five qualified proxy variables with a Feature Present = 1 (see Table 7).

A second analysis was done with the Kruskal-Wallis *H* Test for mean rank comparisons with the unqualified (i.e., without the 'more' or 'fewer' qualifiers) proxy variables. The finding was a significant difference ($p < .05$) for two dependent variables from the Psychological Processes dimension (LIWC, 2007) and were Cognitive Mechanisms words and Negative Emotion words for Injury-event Type, and these two variables also included a significant difference ($p < .05$) in the WTC variable set used for Research Question One. The descending

mean rank order for the variables Cognitive Mechanisms words and Negative Emotion words was Intentional, Unintentional, and Ambiguous (see Table 8), and this descending mean rank order was the same as the most common descending mean rank order noted for the WTC set of dependent variables used for Research Question One. The findings from the mean rank comparisons post-hoc analysis are included below, subsequent to the level comparisons.

WTC's LoD differential proportion analysis for Injury-event Type, by level comparisons. Two linguistic patterns emerged with the LoD analysis. The first pattern was the proportion for each of the five unqualified proxy variables Personal Pronouns, Exclusive words, Negative Emotion words, Motion words, and Cognitive Mechanisms words for each level of Injury-event Type: Intentional, Unintentional, and Ambiguous. The second linguistic pattern consisted of the Feature Present = 1/Feature Absent = 0 pattern that was obtained for each of the five qualified dependent proxy variables across each level of the independent variable Injury-event Type within the context of their respective level comparison.[83] The findings for the LoD's Feature Present/Feature Absent differential proportion analysis level comparisons follows (see Table 7 and Figure 4 for a diagrammatic representation).

For Intentional vs. Unintentional, Intentional included one Feature Present = 1 linguistic feature, and Unintentional included two Feature Present = 1 linguistic features, that were (a) more Negative Emotion words, and (b) fewer Personal Pronouns and fewer Exclusive words respectively. Based on the frequency count of the differential Feature Present = 1 and Feature Absent = 0 proportion analysis indices, Intentional and Unintentional were shown to be more similar than different (1 of 5 and 2 of 5 respectively), but to include unique language-use features

[83] Coding example: For the level comparison Intentional vs. Unintentional, the proportion of the dependent proxy variable Personal Pronouns for the level Intentional was 9.1% and 4.6% for the level Unintentional. With the qualifier 'fewer' for "fewer Personal Pronouns', Intentional was assigned a zero for Feature Absent, and Unintentional was assigned a one for Feature Present.

based on their injury-event type. Proportionally, between levels, such features were: Intentional included more references to people, less self-involvement in the injury-event, and more expressions of negative emotions; whereas, Unintentional included fewer references to people, more self-involvement, and fewer expressions of negative emotions. The overall differential proportion for Feature Present = 1 between Intentional and Unintentional across the five qualified proxy variables for the estimate of deceit as LoD was 20% to 40% respectively, with a total differential between-levels ratio of 20 (see Table 7).

For Intentional vs. Ambiguous, Intentional included three Feature Present = 1 linguistic features, and Ambiguous included two Feature Present = 1 linguistic features that were (a) more Negative Emotion words, more Motion words, and more Cognitive Mechanisms words; and (b) fewer Personal Pronouns and fewer Exclusive words respectively. Based on the frequency count of the differential Feature Present = 1 and Feature Absent = 0 proportion analysis indices, Intentional and Ambiguous were shown to be more similar than different (3 of 5 and 2 of 5 respectively), but to include unique language-use features based on their injury-event type. Proportionally, between levels, such features were: Intentional included more references to people, less self-involvement in the injury-event, more expressions of negative emotions, more references to action processes, and more words that referenced cogitation; whereas, Ambiguous included fewer references to people, more self-involvement in the injury-event, fewer expressions of negative emotions, fewer references to action processes, and fewer words that referenced cogitation. Overall, the differential proportion between Intentional and Ambiguous across the five qualified proxy variables for the estimate of deceit as LoD was 60% to 40% respectively, with a total differential between-levels ratio of 20.

For Unintentional vs. Ambiguous, Unintentional included four Feature Present = 1 linguistic features, and Ambiguous included one Feature Present = 1 linguistic feature that were (a) fewer Exclusive words, more Negative Emotion words, more Motion words, and more Cognitive Mechanisms words, and (b) fewer Personal Pronouns respectively. Based on the frequency count of the differential Feature Present = 1 and Feature Absent = 0 proportion analysis indices, Unintentional and Ambiguous were shown to be the least similar to each other (4 of 5 and 1 of 5 respectively), and to include unique language-use features based on their injury-event type. Proportionally, between levels, such features were: Unintentional included more references to people, more self-involvement in the injury-event, more expressions of negative emotions, more references to action processes, and more words that referenced cogitation; whereas, Ambiguous included fewer references to people, less self-involvement, fewer expressions of negative emotions, fewer references to action processes, and fewer words that referenced cogitation. Overall, the differential proportion between Unintentional and Ambiguous across the five qualified proxy variables for the estimate of deceit as LoD was 80% to 20% respectively, with a total differential ratio of 60 –the largest in the three level comparisons outlined above for Injury-event Type. This analysis showed Unintentional to be more like the composite estimate of Likelihood of Deceit in this comparative context.

Continuing with this thesis's proposition that comparing injury-event types would allow their differentiation based on the language-use features that may be more likely to be associated with one injury-event type vs. another, the LoD estimate of deceit analysis helped highlight what the similarities and differences were by level comparison. For example, in the Intentional vs. Unintentional level comparison, Unintentional included two out of five LoD linguistic features, fewer Personal Pronouns and fewer Exclusive words, as Feature Present = 1. Whereas, in the

Unintentional vs. Ambiguous level comparison, Unintentional included four of five LoD linguistic features, fewer Exclusive words, more Negative Emotion words, more Motion words, and more Cognitive Mechanisms words. The LoD estimate also showed that Intentional and Unintentional are more similar than different in their respective level comparison with Ambiguous, where the one Feature Present = 1 linguistic feature that differed between them was fewer Exclusive words for Unintentional.

The LoD also helped show that Intentional and Unintentional were least similar when compared with each other, where the single Feature Present = 1 linguistic feature for Intentional was more Negative Emotion words that is congruent with an injury-event outcome, and the two Feature Present = 1 linguistic features for Unintentional were fewer Personal Pronouns and fewer Exclusive words that less frequently include explicit mentions of other participants and fewer attempts to exclude the self from the events that transpired and lead to an injury outcome. The one additional Feature Present = 1 that was included in Unintentional and helped distinguish Unintentional from Intentional was fewer Exclusive words. The use of more exclusive words (e.g., but, except, without) have been associated with forthright accounts because they represent efforts made by a speaker to describe how they were not involved in an event as it transpired in relation to their degree of involvement versus more generally describing how an event happened (Newman et al., 2003).

WTC's LoD Kruskal-Wallis H Test analysis for Injury-event Type. The query into the association between the five unqualified (without the 'less' and 'more' qualifiers) dependent proxy variables for the estimate of deceit as LoD and the independent variable Injury-event Type, included significant differences ($p < .05$) among the levels Intentional, Unintentional, and Ambiguous for the two variables Cognitive Mechanisms words ($\eta^2 = 0.167$, $p = .004$) and

Negative Emotion words ($\eta^2 = 0.110$, $p = .028$), and are detailed in Appendix G and summarized in Table 8. A one paragraph summary is included here.

In the Kruskal Wallis *H* Test query for the association among the five unqualified (e.g., without the 'more' and 'less' qualifiers) proxy variables' ranked means, a significant ($p < .05$) difference was identified for Cognitive Mechanisms and Negative Emotions. The post-hoc test identified three significant ($p < .05$) differences. Two of the differences were accounted for by Negative Emotion words and Cognitive Mechanisms in the Intentional vs. Ambiguous group comparison. The third difference was accounted for by Cognitive Mechanisms in the Unintentional vs. Ambiguous group comparison. These three patterns corroborate the proportional analysis findings in relation to the association between Intentional and Negative Emotion words. These three patterns are also suggestive of an association between Unintentional and Cognitive Mechanisms, that when quantified (i.e., more Cognitive Mechanisms) has been associated with expressions of deceit (DePaulo et al., 2003).

4.1.2.2 WTC's LoD for Point-of-view

WTC's LoD structural patterns for Point-of-view –An overview. Like the differential proportion analysis for Injury-event Type, the differential proportion analysis for Point-of-view also did not include a five out of five Feature Present = 1 or for Feature Absent = 0 pattern for the qualified proxy variables for the estimate of deceit in the Parent vs. Non-parent level comparison. In the case of Point-of-view, Parent was the most similar to the estimate of LoD with four out of the five qualified proxy variables with a Feature Present = 1. Whereas, Non-parent included one out of the five qualified proxy variables with a Feature Present = 1. When compared with the Intentional vs. Ambiguous group comparison from the differential proportion analysis for Injury-event Type, Parent was most similar to Intentional with the same three out of

the five qualified proxy variables, and Non-parent was most similar to Ambiguous with the same three of the five qualified proxy variables. Notably, Ambiguous was noted in an earlier section as the least similar to the estimate of LoD with four out of five proxy variables with a Feature Absent = 0 pattern, and this was also the case for Non-parent (see Table 7). The Kruskal-Wallis *H* Test for mean rank comparison analysis that was done for Injury-event Type was also done with Point-of-view to query for the relationship among the unqualified (i.e., without the 'less' and 'more' qualifiers) proxy variables and did not indicate a significant difference ($p > .05$) for Point-of-view. The findings are detailed in Appendix G and summarized in Table 8.

The WTC patterns for the estimate of LoD, for Point-of-view. In the context of the estimate of deceit as LoD, the findings for Point-of-view highlighted that Parent injury-event descriptions tended towards including more language-use features that have been associated with the qualified proxy variables for the estimate of deceit as LoD as compared to Non-parent. Parent injury-event descriptions can be outlined as being more likely to focus on the context and contextual circumstances for the three[84] out of the five proxy variables that were more Motion, more Negative Emotion words, and more Cognitive Mechanisms, as Feature Present = 1, while being forthright with respect to their role in the injury-event for one out of the five proxy variables that was fewer Exclusive words as Feature Absent = 0; and more likely to be somewhat anonymized specific to interaction roles, possibly with the aim to keep the injury inflicting family member's identity unnamed for one out of the five proxy variables that was fewer Personal Pronouns as Feature Present = 1. With respect to the query into the association among the unqualified five proxy variables for Point-of-view with the Kruskal-Wallis *H* Test for mean rank comparisons, a statistically significant difference ($p > .05$) was not identified (see Table 8).

[84] More Negative Emotion words and more Motion word were informed by Newman et al. (2003) and more Cognitive Mechanisms words was informed by DePaulo et al. (2003).

Summary viewed from the experiential dimensions of body, mind, and context: In the WTC's LoD, references to the body were more likely to be associated with Intentional and Unintentional as compared to Ambiguous as Motion words (e.g., verbs),[85] and this was also the case for Parent as compared to Non-parent. Concerning references to the mind, three variables were implicated. The three variables had the same pattern as Motion words, with Intentional and Unintentional as compared to Ambiguous showing as being more likely to be associated with Cognitive Mechanisms words Negative Emotion words and Exclusive words. The same was the case for Parent as compared to Non-parent. References to the context as expressed by the variable Personal Pronouns for the social context were also more likely to be associated with Intentional and Unintentional as compared to Ambiguous. In contrast to the pattern for Parent for the experiential domains of body and mind, Parent was less likely to be associated with the variable Personal Pronouns for the experiential context domain as compared to Non-parent. Additionally, with the exception of Motion words and Cognitive Emotion words, Intentional as compared to Unintentional was more likely to be associated with Negative Emotion words, Exclusive words and Personal Pronouns.

4.2 Analysis 2, Discourse Pattern Function

A notation scheme was used to assist with the organization of the information (four levels) for the Discourse Pattern Function (DPF) findings. The DPF grammar categories were listed with numbers (e.g., 1, 2, 3; Ideational), variables were listed with upper case numerals (e.g., I, II, III; Participants), variable levels were listed with lower case numerals (e.g., i, ii, iii; Injured Child/Youth), and levels of the variable levels were listed with letters (e.g., a, b, c; Patient Mentioned). The notation scheme was used to organize the nine dependent variables to

[85] Motion words are primarily motion verbs in the LIWC (2007) software.

access the level of detail noted in the Analysis Plan. With respect to the fourth indexed level, it was referred to as 'the level of the variable level' (e.g., Patient Mentioned -the variable level, and Agent Mentioned –the level of the variable level) and was required to indicate the level at which a data point emerged and the characteristics of the data point itself (e.g., participant mentioned as Patient vs. Agent). Here is an example of how the notation levels were used in the study's data set, the (1) Ideational grammar category included the variable (I) Participants that had more than one variable level, one of the levels was called (i) Injured Child/Youth that, in turn, had levels, two of which were (a) Patient Mentioned and (b) Agent Mentioned (see Study Variables).

Research Question 1. (1) Do child and youth injury-event descriptions differ in language-use patterns? How? (1.2) According to the DPF analysis? (1.2.1) By Injury-event Type? and (1.2.2) By Point-of-view?

4.2.1 Discourse Pattern Function (DPF).

The study's 41 DPF categorical dependent variables (see Appendix E) were analyzed with the Fisher's Exact Test by the independent variables Injury-event Type and Point-of-view. The resulting data set included 12 (29.3% out of 41) DPF dependent variables that met the study's inclusion criteria (see Study Variables and Table 9). Of the 12, nine (75%; 22.3% out of 41) were from the dependent variables' crosstabulation with Injury-event Type, and three (25%; 7.3% out of 41) were from the dependent variables' crosstabulation with Point-of-view. The findings for Injury-event Type follow. The findings for Point-of-view follow in section 1.2.2.

4.2.1.1 DPF by Injury-event Type. Of the nine[86] significant ($p < .01$) findings, six (66.7%; 14.6% out of 41) were from the Ideational grammar category. Of these six, two were variables (22.2%; 4.9% out of 41), and four were variable levels from the variable Participants

[86] Specific to the nine variables from the Injury-event Type crosstabulation, two data patterns emerged from the same data output. One pattern included Ambiguous and the other did not (see Tables 10 and 11).

(44.4%; 9.8% out of 41). The two variables were (I) Process and (II) Tense. The four variable levels from the variable Participants[87] were (i) Injured Child/Youth, (ii) Injured Child/Youth Role 2,[88] (iii) Another Child/Youth, and (iv) Not Mentioned.[89] Variables and variable levels from the Interactional grammar category were not included and this is because they had a zero or near zero frequency. For the Textual Organization grammar category, two variables (22.2%; 4.9% out of 41) were included and were (i) Ellipsis/Substitution 1[90] and (ii) Prominence 1. For the Other discourse features grammar category, one variable (11.1%; 2.4% out of 41) was included that was Injured Child/Youth Role Shift 1 (see Table 9). An overview of the data pattern follows (next section), the two-levels (i.e., Intentional, Unintentional) analysis and the three-levels (i.e., Intentional, Unintentional, Ambiguous) analysis (described below) were outlined by the levels of the independent variables first. The data were then reported within the study's body, mind, and context experiential domains to show the data pattern for the injured children and youths as a person rather than an injury outcome.

DPF structural patterns for Injury-event Type –An overview. Four structural features were noted in the overall pattern for Injury-event Type based on the Fisher's Exact Test analysis output. The first structural feature concerned the grammar categories used in the DPF analysis that were (1) Ideational, (2) Textual Organization, and (3) Other discourse features. The second structural feature was the set of dependent variables that met inclusion criteria for the levels

[87] The variable Participants was accounted for by its variable levels (as noted here) rather than by the broad category Participants. This was in keeping with the study's goal to identify semantic relations between participants.

[88] Role 2 refers to the second role reference that was made to the injured child/youth in the injury-event description (e.g., role 1 was Patient because the injured child was pushed into the wall so cut their lip, and role 2 was Agent when the injured child/youth pushed the back).

[89] Not Mentioned referred to instances where a linguistic element such as a participant role was not explicitly mentioned but was instead either inferable at the time of coding based on the available text, or expected based on the text's grammar structure. This is in contrast to the coding for 'No' as Feature Absent = 0 that is specific to instances where a linguistic element was not explicitly mentioned and was not inferable at the time of coding based on the available text, so was considered absent.

[90] The number one (1) after a dependent variable such as in Ellipsis/substitution 1 refers to its first instance that a linguistic feature is noted in the injury-event description.

Intentional and Unintentional only that was referred to as the two-levels analysis (see Table 10). The third structural feature was the set of dependent variables that met the inclusion criteria for the levels Intentional, Unintentional, and Ambiguous that was referred to as the three-levels analysis (see Table 11). The fourth structural feature was the small Feature Present = 1 proportion for Ambiguous as compared to the proportions for Intentional and Unintentional, where the proportions for Ambiguous ranged from 3% to 26%, whereas for Intentional the proportional range spanned from 21% to 58%, and Unintentional from 29% to 61%.

DPF Fisher's Exact Test for Injury-event Type, by level. For this analysis, the findings were presented in descending rank order with a focus on Intentional relative to (a) Unintentional for the two-levels analysis and (b) to Unintentional and Ambiguous for the three-levels analysis, and are organized below by grammar category. The ranking was based on the dependent variables' proportional distribution across the Injury-event Type's levels. A summary of the overall rankings for the two-levels analysis (see Figure 5a) and the three-levels analysis (see Figure 5b) follows.

The two-levels analysis for the independent variable Injury-event Type's level comparison was based on proportions across Intentional and Unintentional, and included language-use features as expressions of injury processes that were directed at the injured child/youth in intentional injury-event descriptions. For example, per the Ideational grammar category, the injured child/youth was explicitly mentioned as a person in the role of patient more frequently for Intentional (70.8%) as compared to Unintentional (29.2%). The same was the case with the explicit mention of the injured child/youth as a body part in the role of patient for Intentional (55.6%) as compared to Unintentional (44.4%). Additionally, the one out of five injury outcome processes that ranked Intentional (62.5%) higher than Unintentional (37.5%) was

the variable level Possession (e.g., 'possessed' contusions on the face) that summarily noted that the injured child/youth was the possessor of the injury outcome (see Table 10).

Like the two-levels analysis, the three-levels analysis for the independent variable Injury-event Type's level comparisons was based on the proportions of the dependent variables across Intentional, Unintentional, and Ambiguous, and included language-use features as expressions of injury processes. However, unlike the two-levels analysis, the language-use features for the three-levels analysis centered primarily on injury processes that happened around the injured child/youth, rather than to the injured child/youth. As to why this may be the case, it was noted that the primary participant role for the two-levels analysis was Patient, and the primary participant role for the three-levels analysis was Agent. Patients by definition have things done to them and Agents by definition do things to others[91] in their social context or to their surrounding material context. These just noted participant roles work as an example of how content –the language-use features in injury-event descriptions– such as the mention of a participant role, is associated with the features of its other process-based constituents (see Appendix A). This means that such language-use features and their process-based constituents unitarily conveyed specific and meaning oriented expressions of injury-event based processes as a grammatically formed structure (see Table 11 and Appendix H for a detailed account).

DPF language-use patterns across body, mind, and context –the study's experiential domains, for Injury-event Type. The exposition of the data for the 565 clauses in the study that is detailed in Appendix H for the two- and three-levels analyses was reported in this section as an analysis of the associations between the language-use features in the injury-event descriptions and the references made to the body, mind, and context experiential domains by the DPF's

[91] Can include 'doing' something to oneself as is the case in self-inflicted injuries.

grammar categories (e.g., Ideational). Additionally, because the two- and three-levels analyses were drawn from the same data output, they were presented contiguously in order to better represent the data pattern for the overall analysis.

The body per the DPF's (1) Ideational category's variables: Direct references to the injured child/youth's body were noted with two variable levels from the variable (I) Participants. The two variable levels were (i) 'Injured Child/Youth' and (ii) 'Injured Child/Youth Role 2'. Both variable levels included the level (a) 'Injured Child/Youth Body Part'. The two-levels analysis included the variable level Injured Child/Youth only, and the three-levels analysis included the variable level Injured Child/Youth Role 2 only. For the two-levels analysis, the variable level (i) Injured Child/Youth's (p = .001, CI_p = [0, 0.002], Cramer's V = .294, 35.9% out of $n_{\text{Total Clauses}}$ = 565) level (a) Injured Child/Youth Body Part accounted for 13.3% of the $n_{\text{Injured Child/Youth}}$ = 204. Of this 13.3%, Intentional (55.6%) included a more frequent mention of an injured child/youth as a body part as compared to Unintentional (44.4%). For the three-levels analysis, the variable level (ii) Injured Child/Youth Role 2 (p = .009, CI_p = [0.006, 0.011], Cramer's V = .293, 82.7% out of $n_{\text{Total Clauses}}$ = 565) included the level (b) 'Injured Child/Youth Body Part' and it accounted for 12% of the $n_{\text{Injured Child/Youth Role 2}}$ = 467. Of this 12%, Unintentional (53.6%) included a more frequent mention of an injured child/youth as a body part as compared to Intentional (28.6%) and Ambiguous (17.9%).

Continuing with the (1) Ideational grammar category, the body was also referenced less directly in the two-levels analysis by three out of the five (II) Process (p = .007, CI_p = [0.005, 0.009], Cramer's V = .194, 17% out of $n_{\text{Total Clauses}}$ = 565) variable levels. The three variable levels were (i) Transfer-locational (e.g., taking the injured child/youth to the hospital, 24% out of n_{Process} = 96), (ii) Transfer-personal (e.g., transferring an item from the medicine cabinet to one's

person such as in the case of a self-inflicted poisoning like ‘took mom’s pills from the medicine cabinet / he swallowed them all’, 20.8% out of $n_{\text{Process}} = 96$), and (iii) Possession (e.g., ‘possessing’ contusions to the face, 16.7% out of $n_{\text{Process}} = 96$). The proportions for these three variable levels were similar for Intentional and Unintentional; however, two variable levels ranked Unintentional above Intentional and were (i) Transfer-locational (Unintentional 65.2% vs. Intentional 34.8%) and (ii) Transfer-personal (Unintentional 65% vs. Intentional 35%). In contrast, the variable level that ranked Intentional higher than Unintentional was (iii) Possession (Intentional 62.5% vs. Unintentional 37.5%). These three variable levels were also included in the mind domain below, because while these three variable levels make reference to the injured child/youth’s body, they also implicate coactive action processes on how the body of the injured was handled (Transfer-locational), used (Transfer-personal), and considered (Possession) as a result of an injury.

One other variable level from the two-levels analysis referenced the body directly, and this variable was associated with the (2) Other discourse features grammar category. The variable level was (i) ‘Location (body) Mentioned’[92] from the variable (I) ‘Injured Child/Youth Role Shift 1’ ($p = .001$, $CI_p = [0.000, 0.001]$, Cramer’s $V = .300$, 11.8% out of $n_{\text{Injured Child/Youth Role Shift 1}} = 203$). For the variable level ‘Location (body) Mentioned’, ‘Location’ referred to a location on the injured child/youth's body (e.g., face, elbow), and was indexed under the (2) Other discourse features grammar category rather than under the (1) Ideational grammar category (cf. variable level (ii) Injured Child/Youth Body Part), because the body reference was mentioned as an adjunct (Asp & de Villiers, 2010, p. 67). This means that the variable level ‘Location (body) Mentioned’ was outside the clausal structure that is associated with Processes

[92] Not to be confused with the variable level Location (e.g., stairwell) for the variable Process from the Ideational grammar category.

(Stillar, 1998, see Appendix A). That is, the location of the affected body part did not take a Participant role (e.g., Patient). Instead, the body part was referred to as a location that was a part of the circumstantial context. This was more frequent for Intentional (62.5%) than it was for Unintentional (37.5%). Because the variable (I) 'Injured Child/Youth Role Shift 1' was also implicated in the context domain, the data details for its other three out of four variable levels were included in the context domain below.

In the case of the three-levels analysis for the variable (II) Process (see Appendix A) (p = .007, CI_p = [0.005, 0.009], Cramer's V = .194, 77.7% out of $n_{\text{Total Clauses}}$ = 565) from the (1) Ideational grammar category, the body was referred to with three out of three variable levels. Two out of the three ranked Intentional highest, followed by Unintentional as second highest and Ambiguous as third. These two variable levels were (i) Affective and (ii) Designative. The third variable level that ranked Intentional second to Unintentional with Ambiguous ranked third was (iii) Motion (addressed below). In the case of the variable level (i) Affective[93] (43.1% out of n_{Process} = 439), it included the body as a referent in instances where the interactive action process was indicated by a verb like 'cut' along with a noun for the injured child/youth's body part such as 'hand' (e.g., 'He cut the hand'). Affective was accounted more frequently by Intentional (50.3%) as compared to Unintentional (41.8%) and Ambiguous (7.9%). For the variable level (ii) Designative (24.8% out of n_{Process} = 439), it was nearly twice more frequent for Intentional (56.9%) than for Unintentional (29.4%) and nearly four times more frequent than for Ambiguous (13.8%). Designative would have required body movements to carry out the designated action associated with the given event's range in which the action took place. Examples of an event's

[93] Affective here refers to instances where x affects y, rather than to affective in the context of expressions of emotion. For example, for Affective processes which can be represented by verbs like 'cut', they require that participants are denoted, such as the Agent that held and directed the cutting item, and the recipient (the Patient) of the Agent's volitional and directed action made with the cutting item towards the recipient of the action (self or other).

range includes the process verbs ‘play’ and ‘stitch’: Playing (the action) in a soccer match (the range, from the beginning of the soccer match until its end); Stitching (the action) done during a suturing medical procedure to close a wound (the range, from the beginning of the suturing procedure until its end).

The third (II) Process variable level that also denoted body action processes, but ranked Intentional second to Unintentional was (iii) Motion (32.1% out of $n_{\text{Process}} = 439$). Motion would have also required body movements to attain a goal or formed part of the outcome of an injury mechanism, such as falling after being pushed. Motion was more frequently accounted for by Unintentional (58.2%) than for Intentional (36.2%) and Ambiguous (5.7%). The language-use patterns for the three out of three Process variable levels (i) Affective, (ii) Designative, and (iii) Motion showed that the more frequently referenced action processes for intentional injury-event descriptions were attributed to a time range based event (Designative 56.9%, Intentional) as compared to Unintentional and Ambiguous; and were used in similar proportions to reference actions that were directed to the injured child/youth (Affective 50.3%, Intentional) for intentional and unintentional injury-event descriptions as opposed to Ambiguous; while unintentional injury-event descriptions were more likely to be attributed to the child/youth moving about (Motion 58.2%, Unintentional) as compared to Intentional and Ambiguous.

The mind per the DPF’s Ideational category’s variables: The language-use patterns for the variable (II) Process in the three-level analysis noted above for the body domain centered on the variable levels (i) Affective, (ii) Designative, and (iii) Motion. They were included in the mind domain too because the language-use patterns for each Process variable also bore out ideational processes that underpinned the nature of the participants’ interactions by calling into account particular process-based participant roles (see Appendix A). Participant roles were

ascribed certain ways of interacting with the social and material contexts in the injury-event descriptions. Such interactions, in turn, informed the understanding of the agent-based nature of the relational coactive elements that formed a part of the experience-based meaning-making processes (Halliday & Matthiessen, 1999, p. 1-3) that took place during an injury-event, were expressed in what was the reported event (Asp & de Villiers, 2010), and were notated by the NHIS field representatives.

The context per the DPF's Ideational category's variables: In a similar manner, the language-use pattern from the two-level findings for the variable (II) Process (p = .007, CI_p = [0.005, 0.009], Cramer's V = .194, 17% out of $n_{\text{Total Clauses}}$ = 565), highlighted interactional coactive processes that were of a different kind to those noted for the three-levels analysis. The language-use patterns in the two-levels analysis highlighted more frequently interactions with the material context, such as between a person's body and the physical space in which the injury-event participants were in for four out of five variable levels. Altogether, the four out of the five variable levels denoted the logistics of a (i) Transfer-locational process (24% out of n_{Process} = 96); (ii) Transfer-personal process (20.8%, out of n_{Process} = 96); (iii) Possession process (e.g., 'possessing' contusions on the face; 16.7% out of n_{Process} = 96); and (iv) Location process (e.g., 'at the foot of the stairs' for the location where the injury took place; 17.7% out of n_{Process} = 96); with the total proportion completed by (v) 'No' as Feature Absent = 0 (20.8% out of n_{Process} = 96) that were associated with the injury-event's social and material context. For this list of (II) Process variables, Intentional ranked second to Unintentional except for Possession. These Process variables implicated the context as well, because they comprised the contextual referents that informed what processes were requisite in fulfilling a communicative objective between the

NHIS participant and the NHIS field representative, and between the NHIS field representative and the NHIS data collection tool at the time they entered a description for an injury-event.

Viewed from the two- and three-levels analyses' experiential domains of body, mind, and context, the data patterns for the independent variable Injury-event Type helped highlight how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context. For example, in the body domain, Intentional was more frequently associated with language-use features that referred to the injured child/youth in the Participant role of Patient as a body part (e.g., 'the leg broke') rather than a person (e.g., 'his leg broke'), and with the Process variables Possession (e.g., the injured child/youth possessed a broken leg), Affective (e.g., the injured child/youth was affected with a broken leg), and Designative (e.g., the injured child/youth's sustained a broken leg injury during a time designated activity). This means that intentional injury-events were more likely to include a reference to the injured children/youths as a body part in the descriptions' first clause. This finding for Participant role was corroborated by the more frequent references that were made to a location on the injured children/youths' body with the author created variable Injured Child/Youth Role Shift 1 to track the first role that was assigned to the injured child/youth at the start of the injury-event description as the temporal and circumstantial shift that demarcated the pre injury-event from the injury-event.

Whereas, Unintentional was more frequently associated with language-use features in the body domain that referred to the injured child/youth as a body part in their second assigned role, and with the Process variables Motion (e.g. running), Transfer-locational (e.g., taking the injured child/youth from point A to point B), and Transfer-personal (e.g., the transferring of an object on to the injured child/youth such a bookshelf falling on the child/youth). This language-use pattern for Unintentional suggested that the injured children/youths were more likely to be mentioned

explicitly in the first clause as a person and then to be referred to as a body part in subsequent clause.

In the case of the mind domain, Intentional was more frequently associated with the interpretation of injury-events with the same Process variables noted in the body domain, Possessive, Affective, and Designative, and to be conceptualized temporally as non-past (e.g., 'he hit the boy on the head'), to include temporally ordered process sequences and to exclude the explicit mention of the agent that injured the child/youth by including a passive clause structure (e.g., 'and she was cut on her lip'). In the case of Unintentional, it also included the same Process types that were noted in the body domain with respect to the interpretation of the processes that lead to the injury outcome. These processes were Motion, Transfer-locational, and Transfer-personal, and these processes were more likely to be realized with verbs marked in the past tense. Unintentional also was more likely to exclude tense as a temporal marker when the injury-event was summarily described as a minor clause. Examples of minor clauses include 'ear concussion', and 'cousin watching child'. Minor clauses are not tensed. This contrast with Intentional showed that in the mind domain, intentional injury-events were more likely to include expressions of time as non-past, to shift attention away from the agent with passive clause structures, and to include clause sequences that are temporally ordered. Whereas, in the case of unintentional injury-event descriptions, the process verbs were more likely to be verbs that denoted the movement of the body from point A to point B, or the movement of an object to or from the injured child/youth in the past tense, or to exclude tense altogether when the injury-events were described in a minor clause structure.

Continuing with the mind domain, the textual organization of the intentional injury-event descriptions was less likely to include ellipted language-use features and was more likely to

include the circumstantial variable Place and the process variable Range in the clausal structures' site Prominence (the last thing mentioned). Whereas, Unintentional was more likely to include ellipted language-use features. Unintentional also was more likely to include the circumstantial variables Item, Manner, Instrument, and Location, as well as the variables Process, Range, and Patient in the clausal structures' site Prominence. This contrast with Intentional showed that in the mind domain textual organization was different for Intentional and Unintentional, with Intentional having fewer ellipted items making the clauses more fully lexicalized. However, Intentional also included fewer language-use features in the clausal structures' Prominence site that did not reference the injured child/youth, but instead drew attention to the place where the injury-event happened and to the time delimited activity during which the injury happened.

In the case of Unintentional, it included more ellipted language use features, but included a broader range of language-use features in the clausal structures' site for Prominence that explicitly mentioned the Patient, the Process, the specific Location (e.g., foot of the stairs vs. the house that would be Place), the Manner, and the Manner as Instrument. This pattern for Unintentional provided a contrast to the pattern for Intentional. Intentional injury-event descriptions while more lexically complete in terms of including fewer ellipted items, were more likely to include language-use features that shifted attention away from the injured child/youth to the general context of place and event specific injury processes (e.g., during a hockey game). The opposite was the case for unintentional injury-event descriptions.

Concerning the Participant roles in the context domain, the injured children/youths were more frequently mentioned explicitly in the roles of Patient Mentioned and Agent Mentioned for Intentional. Whereas, the injured children/youths were more likely to be noted as Patient Pragmatically Determined, Agent Pragmatically Determined, and Agent Ellipted for

Unintentional. Additionally, the context domain also included the variable Injured Child/Youth Role Shift 1 that was more likely to include the variable levels Patient Mentioned, Location (body) Mentioned, and Agent Mentioned for Intentional, and more likely to include Agent Ellipted for Unintentional. This means that Intentional included more references for the injured child/youth in the Patient role under the variable Injured Child/Youth Role Shift 1, and in the role of Agent Ellipted for Unintentional.

4.2.1.2 DPF by Point-of-view. Of the three (25%, out of 12; 7.3% out of 41) dependent categorical variables for Point-of-view, two (16.7% out of 12; 4.9% out of 41) were from the (1) Ideational grammar category that included (I) Participants and (II) Aspect. Zero variables were included from the (2) Interactional grammar category. One variable (8.3% out of 12; 2.4% out of 41) was included from the (3) Textual Organization grammar category, and it was Focus 1. Zero variables were included from the (4) Other discourse features category (see Table 12). The independent variable Point-of-view included two levels, Parent and Non-parent.

DPF structural patterns for Point-of-view –An overview. Five structural features were noted in the overall pattern for Point-of-view based on the Fisher's Exact Test analysis output. The first structural feature concerned the grammar categories used in the DPF analysis. Only two out of the four grammar categories were included in the study's data set and were (1) Ideational and (2) Textual Organization. Significant differences for the (3) Interactional grammar category and the (4) Other discourse features variables ($p > .01$) were not identified. The second structural feature was the absence ($p > .01$) of the variable Process (see Appendix A) in the Ideational grammar category. The third structural feature was (I) Participants having only one variable level included that was (i) Another Child/Youth. The fourth structural feature was the small Feature Present = 1 proportion for Non-parent vs. Parent, where the proportions for Non-parent ranged

from 8% to 12% and ranged from 88% to 92% for Parent. The one exception was the equal proportion between Non-parent and Parent for the variable Focus 1 (what was said first in a clause) that was noted as Patient. The fifth structural feature was the absence of a variable or variable level for the injured child/youth as a person or as a body-part.

DPF Fisher's Exact Test for Point-of-view, by level. Point-of-view was analyzed in the same way that Injury-event Type was. The analysis involved a level comparison of the proportions for Point-of-view's levels Parent and Non-parent with the purpose of noting similarities and differences in the use of language-use features as expressions of injury processes. However, in contrast to the findings for Injury-event Type, the variable Process (see Appendix A) was not included ($p > .01$). Another contrast in the findings between Injury-event Type and Point-of view was that the Point-of view findings did not include references to the injured child/youth either as a person or as a body part. The mentioned (I) Participants were noted in the agent role under the variable level (II) Another Child/Youth's (a) Agent Mentioned from the (1) Ideational grammar category. The injured child/youth was instead noted as a structural element that was referenced by the variable (III) Focus 1 from the (2) Textual Organization grammar category.

With the available language-use elements, the findings for Point-of-view were suggestive of two plausible variable level associations. The first of the two more detailed patterns concerned the likelihood that the variable level (i) Another Child/Youth's level (a) Agent Mentioned (13.1% out of $n_{\text{Participants}} = 497$; Parent 92.3% vs. Non-parent 7.7%) from the Ideational grammar category was associated with the variable (III) Focus 1's variable level (i) Agent (40% out of $n_{\text{Focus 1}} = 433$; Parent 90.8% vs. Non-parent 9.2%) from the (2) Textual Organization grammar category. This first more detailed pattern showed that in the instances when another child/youth

was included as Agent Mentioned in Parent injury-event descriptions, they were also more likely to be noted in the clausal structures' Focus 1 site as Agent. The second of the two more detailed patterns concerned the likelihood that the variable level (i) Another Child/Youth's level (b) 'No' (Feature Absent = 0; 86.9% out of $n_{\text{Participants}} = 497$; Parent 87.5% vs. Non-parent 12.5%) was associated with Process (56.8% out of $n_{\text{Focus 1}} = 433$; Parent 89.0% vs. Non-parent 11.0%) in the clausal structures' Focus 1 site, as well as with the variable level (II) Aspect's level (i) Continuous (7.5% out of $n_{\text{Participants}} = 497$; Parent 88.1% vs. 11.9%). This second pattern showed that of the instances in which Parent injury-event descriptions did not include an Agent Mentioned as a Participant, the focus was then more likely to be shifted to processes as indicated by the variable level (i) Process and as (ii) Continuous in (III) Aspect.

In the case of Point-of-view, it is necessary to note that due to the wide range in the proportions between Parent and Non-parent, it could be that the findings for Point-of-view more closely represented the language-use features for Parent cases (86.8%) than for Non-parent cases (13.2%). For the same reason, Non-parent's data, as the inverse of the data for Parent, needs to be interpreted with this detail in mind. Nonetheless, this study's data analysis included a query into Point-of-view because it represented the population that provided the data used in this study's sample, and also represents a more common entry point into the query of how injuries happen.

DPF language-use patterns across body, mind, and context –the study's experiential dimensions, for Point-of-view. The body: In the case of Point-of-view per the DPF categories, direct or indirect references to the body were not included. The mind: The mind per the DPF Ideational grammar category was represented by the proportion of expressions of the temporal markers noted by the variable (I) Aspect's level (i) Continuous from the (1) Ideational grammar

category, and this was more frequent for Parent than for Non-parent provided injury-event descriptions. Continuous aspect was helpful in noting that social and material relations in the NHIS textual context were conceptualized as a continuous temporal event rather than as a completed event, such as 'she was running' vs. 'she ran' (Huddleston & Pullum, 2015, p. 51). Since the variable Process from the Ideational grammar category was not included for Point-of-view, continuous aspect allowed a view into likely processes related language-use features that were involved in the injury-events. For example, for the clauses 'she was running' and 'she ran' the process Motion for the verb 'to run' would be noted, and once noted, its constituent linguistic elements like Agent and Location could be located and coded, and if not located, coded accordingly, nonetheless, for the clause.

While Process was not included as a variable for Point-of-view, Process was included as a variable level for the (III) variable Focus 1 from the (2) Textual Organization grammar category. Focus refers to a structural site in a clause; specifically, focus refers to the word that is said first, so the type of language element that is located at the Focus site at the start of the clause can vary and is the keystone to the linguistic structure that follows. As a level, (i) Process included one variable level out of three variable levels for the variable (III) Focus 1. As a variable level, Process was included more frequently in Parent injury-event descriptions as compared to Non-parent injury-event descriptions. The same was the case for the variable level Agent. In contrast, the variable level Patient that included an equal proportion for Parent and Non-parent (see Table 12). The variable (III) Focus 1 and its three out of three variable levels involved the mind domain because the placing of a chosen word as the first-thing mentioned in the clause requires a choice. The Focus grammar feature was useful because the variable (III) Focus 1 indicated what was communicated as the point of departure within the context of the

injury-event descriptions through the (III) Focus 1 variable levels (i) Process, (ii) Agent, and (iii) Patient.

The context per the DPF Ideational category: The absence of participant roles other than the one out of one ($p < .05$) variable level (i) Another Child/Youth from the variable (I) Participants was unique to Point-of-view. The language-use pattern noted was that Parent injury-event descriptions were more likely to explicitly mention another child/youth in the agent role as Agent Mentioned as compared to the Non-parent injury-event descriptions. Additionally, the injured child/youth was not included either as a person or as a body part ($p > .01$) in either the Parent and Non-parent injury-event descriptions. Overall, Parent and Non-parent provided injury-event descriptions were more different than similar in the way in which another child/youth participant was referred to ($p < .01$), but were more similar than different in the way in which the injured child/youth participant was referred to ($p > .01$).

Summary from the view of the experiential dimensions of body, mind, and context: For Point-of-view, this view provided an informative outline of how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context. The study's data were suggestive of there being greater similarity across the DPF dependent variables ($p > .01$), such that only three dependent variables ($p < .01$) were available for the analysis with the independent variable Point-of-view. Of the three dependent variables that were included, two included the mind domain and highlighted that parent as compared to non-parent provided injury-event descriptions were more likely to include descriptions that were temporally continuous as well as more likely to focus on information about the processes that were involved in the injury outcome and about the participants in the agent role, but equally about participants in the patient role concerning textual organization. Parent provided injury-event descriptions as compared to the

descriptions that were provided by non-parents, were more likely to include language features that expressed information on the relational coactive context for participants that was specific to children/youths injury-event participants that were not the injured child/youth.

Research Question 2. What are the language-use patterns associated with the set of proxy variables used to query for an estimate of potential deceit? (2.2) According to the DPF's estimate of Dissimulation of Intent? (2.2.1) By Injury-event Type? (2.2.2) By Point-of-view?

4.2.2 DPF's Dissimulation of Intent (DoI).

The DPF's analysis for estimate of deceit as dissimulation of intent (DoI) included five proxy qualified variables. Of these five qualified variables, one was from the (1) Other discourse features grammar category that was (I) less Tense Shift. The remaining four qualified variables were from the (2) Textual Organization grammar category and were (II) more Nominalization, (III) more Ergative Verbs, (IV) less Focus, and (V) less Prominence. The DPF's DoI analysis consisted of level comparisons based on proportional data that were coded as Feature Present = 1 or Feature Absent = 0, and this was done in the same way it was for the WTC's LoI estimate of deceit described under Analysis 1. Unique to the DPF's DoI for the estimate of deceit was the need to do two analyses to accurately account for the injured children/youths' Participant roles, one as Agent and the other as Patient. This was required because the structural clausal elements Focus (the first word) and Prominence (the last word) can vary based on what a speaker chooses to place into each location.

The findings for Injury-event Type and Point-of-view for the injured child/youth in the Agent role are presented first (see Table 13a), and these are followed by the findings for Injury-event Type and Point-of-view for the injured child/youth in the Patient role (see Table 13b). The data from the DoI Agent and DoI Patient estimates of deceit was also analyzed with the Fisher's

Exact Test to assess the degree of association of the five (non-qualified) proxy deceit variables by Injury-event Type and Point-of-view. This was done to get a sense of the association between the proxy variables and the independent variables prior to considering the dependent variables' in their qualified format in the level comparisons.

4.2.2.1 DPF's DoI with the injured child/youth in the Agent role.

DPF's DoI differential proportion for Injury-event Type, by level comparisons. Intentional vs. Unintentional. Intentional included one out of five Feature Present = 1 instance that was (I) more Nominalization, while Unintentional included four out of five Feature Present = 1 instances that were (II) less Tense Shift, (III) more Ergative Verbs, (IV) less Focus, and (V) less Prominence. For Feature Absent = 0, Intentional included four out of five instances that were (I) less Tense Shift, (II) more Ergative Verbs, (III) less Focus, and (IV) less Prominence, while Unintentional included one out of five Feature Absent = 0 instance that was (V) more Nominalization. The differential proportion for Feature Present = 1 between Intentional and Unintentional across the five proxy variables for the estimate of deceit as Dissimulation of Intent (DoI) was 20% to 80% respectively, with a total differential between groups ratio of 60 (see Table 13a).

Intentional vs. Ambiguous. Intentional included one out of five Feature Present = 1 instance that was (I) less Prominence, while Ambiguous included four out of five instances of Feature Present = 1 that were (II) less Tense Shift, (III) more Nominalization, (IV) more Ergative Verbs, and (V) less Focus. For Feature Absent = 0, Intentional included four out of five instances that were (I) less Tense Shift, (II) more Nominalization, (III) more Ergative Verbs, and (IV) less Focus, while Ambiguous included one out of five Feature Absent = 0 instance that was (V) less Prominence. The differential proportion for Feature Present = 1 between Intentional and

Ambiguous across the five proxy variables for the estimate of deceit as Dissimulation of Intent (DoI) was 20% to 80% respectively, with a total differential between groups ratio of 60 (see Table 13a).

Unintentional vs. Ambiguous. Unintentional included one out of five instance of Feature Present = 1 that was (I) less Prominence, while Ambiguous included four out of five instances of Feature Present = 1 that were (II) less Tense Shift, (III) more Nominalization, (IV) more Ergative Verbs, and (V) less Focus. For Feature Absent = 0, Unintentional included four out of five instances that were (I) less Tense Shift, (II) more Nominalization, (III) more Ergative Verbs, and (IV) less Focus, while Ambiguous included one out of five Feature Absent = 0 instance that was (V) less Prominence. The differential proportion for Feature Present = 1 between Unintentional and Ambiguous across the five proxy variables for the estimate of deceit as Dissimulation of Intent (DoI) was 20% to 80% respectively, with a total differential between groups ratio of 60 (see Table 13a).

Two summary patterns emerged from the three level comparisons for the DoI Agent estimate by Injury-event Type. The first pattern showed that the Feature Present = 1/Feature Absent = 0 pattern for Intentional vs. Ambiguous was the same as the Feature Present = 1/Feature Absent = 0 pattern for Unintentional vs. Ambiguous, so highlighted that Intentional and Unintentional were the same with the level comparisons when contrasted with Ambiguous. The second pattern showed that Intentional and Unintentional were different with the level comparisons when contrasted with each other. However, when the Feature Present = 1/Feature Absent = 0 coding pattern for Intentional, Unintentional, and Ambiguous were considered by level (see next subsection) the unique feature pattern for each level for Injury-event Type became more salient.

DPF's DoI differential proportion for Injury-event Type, by level. Intentional. For Feature Present = 1, Intentional did not include more instances[94] of any of the five qualified proxy variables. For Feature Absent = 0, Intentional did include more instances of (I) less Tense Shift, (II) more Ergative Verbs, and (III) less Focus. The pattern for the differential proportion in relation to Unintentional without qualification showed that Intentional included a higher proportion of Tense Shift (100%), Nominalization (71.4%), Focus (25.5%), and Prominence (4.3%), and a lower proportion of Ergative Verbs (14.3%). In relation to Ambiguous, Intentional included a higher proportion of Tense Shift (100%) and Focus (25.5%), and a lower proportion of Nominalization (71.4%), Ergative Verbs (14.3%), and Prominence (4.3%).

Unintentional. For Feature Present = 1, Unintentional included more instances of (I) less Prominence. For Feature Absent = 0, Unintentional included more instances of (II) more Nominalization. The pattern for the differential proportion in relation to Intentional without the qualification showed that Unintentional included a higher proportion of Ergative Verbs (57.1%), and a lower proportion of Tense Shift (50%), Nominalization (35.7%), Focus (19.2%), and Prominence (1.4%). In relation to Ambiguous, Unintentional included a higher proportion of Tense Shift (50%) and Focus (19.2%), and a lower proportion of Nominalization (35.7%), Ergative Verbs (57.1%), and Prominence (1.4%).

Ambiguous. For Feature Present = 1, Ambiguous included more instances of (I) less Tense Shift, (II) more Nominalization, (III) more Ergative Verbs, and (IV) less Focus. For

[94] More instances refers to 2 out of the 2 possible times rather than 1 out of the 2 possible times in the three levels' proportional comparisons (i.e., Intentional vs. Unintentional, Intentional vs. Ambiguous, Unintentional vs. Ambiguous); for example, for Intentional, it included a Feature Present = 1 for the dependent variable more Nominalization in the Intentional vs. Unintentional level comparison, but not in the Intentional vs. Ambiguous level comparison. Whereas, in the case of Unintentional, it included a Feature Present = 1 for the dependent variable less Prominence in the Intentional vs. Unintentional level comparison and in the Unintentional vs. Ambiguous level comparison, and this finding for Unintentional with respect to less Prominence showed that it was more likely to include a Feature Present = 1 for less Prominence in this data sample irrespective of the level comparison in which Unintentional was considered; thus, indicating that less Prominence for the injured child/youth in the Agent role was more likely to be associated with Unintentional.

Feature Absent = 0, Ambiguous included more instances of (V) less Prominence. The pattern for the differential proportion in relation to Intentional without qualification showed that Ambiguous included a higher proportion of Nominalization (100%), Ergative Verbs (100%), and Prominence (100%), and a lower proportion of Tense Shift (0%) and Focus (11.1%). In relation to Unintentional, Ambiguous included a higher proportion of Nominalization (100%), Ergative Verbs (100%), and Prominence (100%), and a lower proportion of Tense Shift (0%) and Focus (11.1%).

Summary per the DPF's DoI differential proportion by Injury-event Type: In the case of the qualified variable less Tense Shift, Ambiguous, in relation to Intentional and Unintentional included a zero proportion as compared to Intentional (100%) and Unintentional (50%). Comparatively, this means that Intentional and Unintentional included a higher proportion of instances where injury-events were described in a way that included a tense shift such as from past tense to non-past (e.g., present) and vice-versa. Event descriptions that include tense shifts from the past tense into non-past tend to be associated with a higher degree of emotionality that was experienced during the described event. As such, the absence of, or lower frequency of Tense Shift could be considered as a linguistic marker for the expression of emotional distance (McIsaac & Eich, 2004) in the injury-event descriptions that is greater for Ambiguous as compared to Unintentional and Intentional.

In the case of the qualified variable more Nominalization, Ambiguous (100%) included more instances of excluding the mention of participants through the process of Nominalization as compared to Intentional (71.4%) and Unintentional (35.7%). Nominalization was achieved through the process of using the verb as if it was a noun. When this is done, the participants that would be selected by the verb can go unmentioned as in 'The hospitalization of Sam was a

tragedy' (vs. 'The parents hospitalized Sam', and 'The hospitalization was a tragedy'). Additionally, Ambiguous (100%) included more instances of excluding the mention of participants through the use of Ergative Verbs, as compared to Intentional (14.3%) and Unintentional (57.1%). Ergative verbs –verbs of motion and change– achieve a similar effect of excluding participants by not requiring the mention of Agent or the Cause when the verb is inactive as in 'the arm broke' vs. 'Sam broke the arm'.

In the case of the qualified variable less Focus, Ambiguous (11.1%) included fewer instances as compared to Intentional (25%) and Unintentional (19.2%) where the injured child/youth was mentioned first in the clause's structural site for Focus (i.e., what is said first in the clause), for example (in underline) 'Sam went out and slipped on the porch', where Sam is Focus in an agent role. In contrast, for the qualified variable less Prominence, Ambiguous (100%), as compared to Intentional (4.3%) and Unintentional (1.4%) included a higher proportion of instances where the injured child/youth was more frequently mentioned last in the clauses structural location for Prominence (i.e., what was said last in the clause), for example (in underline), 'stepping out, the back porch was slippery for Sam', where Sam in an agent role was placed in the clause's Prominence site.

DPF's DoI differential proportion for Point-of-view, by level comparison. For Point-of-view's level comparison Parent vs. Non-parent, Parent included four out of five qualified variables for the estimate of deceit with a Feature Present = 1. Two of the four qualified variables were a part of the Textual Organization category and were (I) less Focus, and (II) less Prominence. The other two out of four qualified variables were a part of the Other discourse features category, and were (III) less Tense Shift and (IV) more Ergative Verbs. For Feature Absent = 0, Parent included one out of five qualified variables that was a part of the Other

discourse features category and was (V) more Nominalization. In the case of Non-parent, the pattern was the inverse of the pattern for Parent, and this is detailed below (see Table 14).

Non-parent vs. Parent. For Non-parent relative to Parent, Non-parent included one out of five qualified variables with a Feature Present = 1 from the Other discourse properties category that was (I) more Nominalization. For Feature Absent = 0, Non-parent included four out of five qualified variables that were (II) less Tense Shift, (III) more Ergative Verbs from the Other discourse features category, and (IV) less Focus and (V) less Prominence from the Textual Organization category. The differential proportion for Feature Present = 1 between Parent and Non-parent across the five proxy variables for the estimate of deceit as Dissimulation of Intent for the injured child/youth's role as Agent was 80% to 20% respectively, with a total differential between groups ratio of 60.

DPF's DoI differential proportion analysis for Point-of-view, by level. Parent. For Feature Present = 1, Parent included four out of five variables that were (I) less Tense Shift, (II) more Ergative Verbs, (III) less Focus, and (IV) less Prominence. For Feature Absent = 0, Parent included one out of five variables that was (V) more Nominalization. For the differential proportion without qualified variables, Parent in relation to Non-parent included a higher proportion for (I) Ergative Verbs (55.6%), and a lower proportion for (II) Tense Shift (50%), (III) Nominalization (33%), (IV) Focus (17.2%), and (V) Prominence (1.6%) as compared to Non-parent. In the case of Non-parent, the pattern was the inverse of the pattern for Parent, and this is detailed below (see Table 14).

Non-parent. For Feature Present = 1, Non-parent included one out of five variables that was (I) more Nominalization. For Feature Absent = 0, Non-parent included four out of five variables that were (II) less Tense Shift, (III) more Ergative Verbs, (IV) less Focus, and (V) less

Prominence. For the differential proportion without qualified variables: Non-parent in relation to Parent included a higher proportion for (I) Tense Shift (66.7%), (II) Nominalization (53.8%), (III) Focus (24.6%), and (IV) Prominence (3.1%), and a lower proportion for (V) Ergative Verbs (38.5%).

Summary for the DPF's DoI differential proportion for Point-of-view: Parent, in relation to Non-parent included fewer instances of Tense Shift, Nominalization, Focus, and Prominence, but a higher proportion of Ergative Verbs. With respect to Tense Shift, this means that Parent was more likely to include expressions of emotional social distance than Non-parent. Additionally, Parent had fewer mentions of participants through the process of Nominalization. This shows that Parent injury-event descriptions included more use of verbs as verbs (rather than verbs as a nouns) relative to Non-parent. When verbs are used as nouns, the participants that would be required to co-occur and mentioned can instead be backgrounded or excluded.

A clause with a backgrounded participant would look like 'The hospitalization of Sam was a tragedy'. In this example the process of hospitalization is focus (what is mentioned first) vs. 'The parents hospitalized Sam' where the verb required the participants 'parents' as the Agent(s) and Sam as the Patient. Using the same example, a clause with an unmentioned participant would look like 'The hospitalization was a tragedy'. Parent provided injury-event descriptions also included more instances of Ergative verbs. Ergative verbs are verbs of motion and change that work to achieve a similar effect as nominalization. Ergative verbs can be used without the mention of participants such as Agent as well as the Cause of the injury. This function of ergative verbs takes place when the verb is intransitive, as in 'the arm broke' vs. 'Sam broke the arm'. Parent also included fewer instances where the injured child/youth was mentioned in the clause's structural site for Focus (in underline), for example, '<u>Sam</u> went out and

slipped on the back porch'. Similarly, Parent included a lower proportion of instances where the injured child/youth was mentioned in the clause's structural site for Prominence (in underline) 'during winter, mom goes out the back porch with Sam'. For Parent and Non-parent, Focus (17.2%; 24.6% respectively) was more frequent than Prominence (1.6%; 3.1% respectively).

Summary for the DPF's DoI differential proportion for Injury-event Type and Point-of-view: Overall, the Feature Present = 1/Feature Absent = 0 pattern across the five qualified proxy variables was the same for Intentional and Non-parent, with Feature Present = 1 for (I) more Nominalization, while for Feature Absent = 0 the qualified proxy variables were (II) less Tense Shift, (III) more Ergative Verbs, (IV) less Focus, and (V) less Prominence. Notably, the Feature Present = 1 and Feature Absent = 0 patterns for Unintentional and Parent were the inverse of the patterns for Intentional and Non-parent. Also, the between categories comparison, Unintentional and Parent included the most number of Feature Present = 1 (four out of five) proxy variables for the estimate of deceit as DoI. For the within category comparison, the pattern for Ambiguous was the same when compared with Intentional and when compared with Unintentional with four out of five for Feature Present = 1. Given this consistent pattern for Ambiguous, and the similarity between the patterns for Intentional and Non-parent as well as the similarity between the patterns for Unintentional and Parent, Ambiguous could be said to have a consistent and unique language-use pattern in the within category comparison for Injury-event Type.

DPF's DoI Fisher's Exact Test for Injury-event Type. The Fisher's Exact Test for Injury-event Type and each of the five estimate of deceit variables (unqualified) helped identify one marginally non-significant ($p > .011$) and one significant ($p < .001$) association. The marginally non-statistically significant association was with (I) Tense Shift ($p = .011$, $V = 0.185$, $\eta^2 = .039$), and the statistically significant was with (II) Focus ($p = .001$, $V = .299$, $\eta^2 = .089$).

DPF's DoI Fisher's Exact Test for Point-of-view. The Fisher's Exact Test did not identify ($p > .05$) a significant association between Point-of-view and the five estimate of deceit proxy variables.

Summary for the DPF's DoI Fisher's Exact Test for Injury-event Type and Point-of-view: In keeping with the non-parametric assumptions[95] for the estimate of the degree of association between observed sample data and a population parameter from the theoretical field of statistics, two statistically significant findings were identified in the data for the estimate of Dissimulation of Intent with the Fisher's Exact Test. There was a modest significant ($p < .01$) association between Injury-event Type and two of the five proxy variables for the estimate of deceit that were Tense Shift and Focus, but not ($p > .01$) between Injury-event Type and the other three that were Nominalization, Ergative Verbs, and Prominence. The modest association for Tense Shift and Focus with Injury-event Type provided support for the degree of thematic relatedness between these two variables and Injury-event Type, where the theme was pediatric injury-event descriptions in the NHIS thematic-context. This finding suggested that if said relationship is replicated in subsequent studies, Tense Shift and Focus could be considered as language-use features that could work to characterize injury-events as being more or less likely to be related to one injury-event type vs. another. For example, Tense Shift and Focus were both (a) more frequently included in Intentional and Unintentional relative to Ambiguous, and more frequently used in Intentional relative to Unintentional, as well as (b) more frequently included in Non-parent relative to Parent.

DPF language-use patterns across body, mind, and context –the study's experiential dimensions, for the DoI with the Injured Child/Youth as Agent. From the view of the experiential

[95] Randomness and independence of samples for non-parametric statistical techniques.

dimensions of body, mind, and context, the DPF's DoI specific to the injured child/youth in the role of Agent, this view provided an informative outline of how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context. For the body domain, the language-use data pattern showed that ambiguous injury-event descriptions were more likely to include a higher proportion of nominalizations followed by intentional and unintentional injury-event descriptions. Ambiguous injury-event descriptions were also more likely to include a higher proportion of ergative verbs, followed by unintentional and intentional injury-event descriptions. Together with the language-use features from the mind domain such as the absence of Tense Shift, and the language-use feature context domain such as the absence of Prominence, as well as having the lowest proportion of Focus, Ambiguous denoted a language-use pattern that included the most features that likened it to the estimate of deceit as Dissimulation of Intent (DoI) (see Appendix I).

Summary for the DPF's DoI for Injury-event Type and Point-of-view: Overall, the grammar-based study of the estimate of deceit with the five proxy variables of deceit, including the two proxy variables that included the injured child/youth as Agent for Focus and Prominence, indicated that the content and structure of injury-event descriptions varied by Injury-event Type and Point-of-view. In instances where the injured child/youth's role was Agent, they were mentioned (a) least frequently in Ambiguous (11.1%) and most frequently in Intentional (25.5%) in the clause's Focus position (first thing mentioned; subject); (b) least frequently in Unintentional (1.4%) and most frequently in Ambiguous (100%) in the clause's Prominence position (last thing mentioned; object); and (c) less frequently in Parent for Focus (17.2%) and Prominence (1.6%) and most frequently for Non-parent for Focus (24.6%) and Prominence (3.1%).

4.2.2.2 DPF's DoI with the injured child/youth in the Patient role.

DPF's DoI emergent language-use patterns for Injury-event Type and Point-of-view –An overview. For the overall differential proportion for Injury-event Type with the injured child/youth in the Patient role, four patterns were noted. Pattern 1: The Feature Present 1/Feature Absent = 0 pattern showed that none of the three levels for the independent variable Injury-event Type included a five out of five for Feature Present = 1 or for Feature Absent = 0 across the five proxy variables for the estimate of deceit as dissimulation of intent (DoI). This first observation was the same as the pattern that was outlined for the injured child/youth in the Agent role in the preceding section (see Table 13b). Patterns 2 and 3: Instead, unique Feature Present = 1/Feature Absent = 0 patterns emerged for Intentional vs. Unintentional (Pattern 2), and for Ambiguous vs. Intentional and Unintentional (Pattern 3). These observations were the same as those noted for Pattern 2 and Pattern 3 for the injured child/youth in the Agent role in the preceding section; however, sameness was only based on having unique Feature Present = 1/Feature Absent = 0 patterns. The patterns themselves were different. Pattern 4: These differences were specific to the language-use patterns that were noted between the DoI analysis patterns with the injured child/youth in the Agent role and the DoI analysis patterns with the injured child/youth in the Patient role was in the proportions for the two qualified variables less Focus and less Prominence from the Textual Organization grammar category.

More specifically, for Pattern 2 from the Intentional vs. Unintentional level comparison, Intentional included two Feature Present = 1 qualified proxy variables (rather than one in the Agent role) as compared to three for Unintentional (rather than four in the Agent role) (details below). For Pattern 3, from the Ambiguous vs. Intentional and Ambiguous vs. Unintentional level comparisons, Ambiguous had the same Feature Present = 1/Feature Absent = 0 pattern. The

Feature Present = 1 frequency count for Ambiguous was three (rather than four in the Agent role), as compared to Intentional (two, rather than one in the Agent role), and Unintentional (two, rather than one in the Agent role) (details below) (see Table 13b).

Concerning Pattern 4 that represented the difference noted between the proportions of the two Textual Organization grammar category's qualified variables less Focus and less Prominence across level comparisons for the injured child/youth in the Agent role and for the injured child/youth in the Patient role, indicated that in the Intentional vs. Unintentional level comparison, Intentional was coded as Feature Absent = 0 in both instances for less Focus. Whereas, this was not the case for less Prominence. In the case of less Prominence, Intentional included a Feature Absent = 0 with the injured child/youth in the Agent role and a Feature Present = 1 with the injured child/youth in the Participant role. In the case of Ambiguous with the injured child/youth in the Agent role for the level comparisons Intentional vs. Ambiguous and Unintentional vs. Ambiguous, Ambiguous included a Feature Present = 1 for less Focus and a Feature Absent = 0 for less Prominence; whereas, Ambiguous included a Feature Absent = 0 in both Ambiguous related level comparisons.

Similarly, for the overall differential proportion for Point-of-view, four patterns were noted. For Pattern 1, the Feature Present = 1/Feature Absent = 0 pattern showed that the two levels for the independent variable Point-of-view did not include a five out of five for Feature Present = 1 or for Feature Absent = 0 across the five qualified proxy variables for the estimate of deceit as dissimulation of intent (DoI). Patterns 2 through 4: Instead, unique Feature Present = 1/Feature Absent = 0 patterns emerged within-group category for Parent vs. Non-parent (Pattern 2), and between-group categories for Parent from Point-of-view and Unintentional from Injury-event Type (Pattern 3), as well as for Non-parent from Point-of-view and Intentional from

Injury-event Type (Pattern 4).

In the case of Pattern 2, for the within category level comparison between Parent and Non-parent, Parent included more Feature Present = 1 proxy variables (three, rather than four in the Agent role) as compared to Non-parent (two, rather than one in the Agent role). For Pattern 3, for one of the between-group category patterns, Parent included the same pattern as Unintentional for Feature Present = 1 (three, rather than four in the Agent role) and Feature Absent = 0 (one, rather than two in the Agent role). For Pattern 4, for the second between-group category pattern, Non-parent included the same pattern as Intentional for Feature Present = 1 (two, rather than one in the Agent role) and Feature Absent = 0 (three, rather than four in the Agent role) (see Table 13b).

DPF's DoI differential proportions for Injury-event Type, by level comparisons. Intentional vs. Unintentional. Intentional included two out of five instances of Feature Present = 1 that were (I) more Nominalization, and (II) less Prominence, while Unintentional included three out of five instances of Feature Present = 1 that were (I) less Tense Shift, (II) more Ergative Verbs, and (III) less Focus. For Feature Absent = 0, Intentional included three out of five instances that were (I) less Tense Shift, (II) more Ergative Verbs, and (II) less Focus, while Unintentional included two out of five instances of Feature Absent = 0 that were (I) more Nominalization, and (II) less Prominence. The differential proportion for Feature Present = 1 between Intentional and Unintentional across the five proxy variables for the estimate of deceit as Dissimulation of Intent was 40% to 60% respectively, with a total differential between groups ratio of 20.

Intentional vs. Ambiguous. Intentional included two out of five instances of Feature Present = 1 that were (I) less Focus, and (II) less Prominence, while Ambiguous included three

out of five instances of Feature Present = 1 that were (I) less Tense Shift, (II) more Nominalization, and (III) more Ergative Verbs. For Feature Absent = 0, Intentional included three out of five instances for (I) less Tense Shift, (II) more Nominalization, and (III) more Ergative Verbs, while Ambiguous included two out of five instances of Feature Absent = 0 for (I) less Focus, and (II) less Prominence. The differential proportion for Feature Present = 1 between Intentional and Ambiguous across the five proxy variables for the estimate of deceit as Dissimulation of Intent was 40% to 60% respectively, with a total differential between groups ratio of 20.

Unintentional vs. Ambiguous. Unintentional included two out of five instances of Feature Present = 1 that were (I) less Focus, and (II) less Prominence, while Ambiguous included three out of five instances of Feature Present = 1 for (I) less Tense Shift, (II) more Nominalization, and (III) more Ergative Verbs. For Feature Absent = 0, Unintentional included three out of five instances for (I) less Tense Shift, (II) more Nominalization, and (II) more Ergative Verbs, while Ambiguous included two out of five instances of Feature Absent = 0 for (I) less Focus, and (II) less Prominence. The differential proportion for Feature Present = 1 between Unintentional and Ambiguous across the five proxy variables for the estimate of deceit as Dissimulation of Intent was 40% to 60% respectively, with a total differential between groups ratio of 20.

DPF's DoI differential proportion analysis per Injury-event Type, by level. Intentional. For Feature Present = 1, Intentional included more instances (I) less Prominence. For Feature Absent = 0, Intentional included more instances of (II) less Tense Shift, and (III) more Ergative Verbs. The pattern for the differential proportion in relation to Unintentional without the qualification showed that Intentional included a higher proportion for Tense Shift (100%), Nominalization (71.4%), and Focus (17%), and a lower proportion for Ergative Verbs (14.3%),

and Prominence (6.4%). In relation to Ambiguous, Intentional included a higher proportion for Tense Shift (100%), and a lower proportion for Nominalization (71.4%), Ergative Verbs (14.3%), Focus (17%), and Prominence (6.4%).

Unintentional. (a) For Feature Present = 1, Unintentional included more instances of (I) less Focus. For Feature Absent = 0, Unintentional included more instances of (II) more Nominalization. The pattern for the differential proportion in relation to Intentional without qualification showed that Unintentional included a higher proportion for Ergative Verbs (57.1%), and Prominence (17.8%), and a lower proportion for Tense Shift (50%), Nominalization (35%), and Focus (1.4%); In relation to Ambiguous, Unintentional included a higher proportion for Tense Shift (50%), and a lower proportion for Nominalization (35.7%), Ergative Verbs (57.1%), Focus (1.4%), and Prominence (17.8%).

Ambiguous. For Feature Present = 1, Ambiguous included more instances of (I) less Tense Shift, (II) more Nominalization, and (II) more Ergative Verbs. For Feature Absent = 0, Ambiguous included more instances of (I) less Focus, and (II) less Prominence. The pattern for the differential proportion in relation to Intentional without qualification showed that Ambiguous included a higher proportion for Nominalization (100%), Ergative Verbs (100%), Focus (100%), and Prominence (22.2%), and a lower proportion for Tense Shift (0%). In relation to Unintentional, Ambiguous had a higher proportion for Nominalization (100%), Ergative Verbs (100%), Focus (100%), and Prominence (22.2%), and a lower proportion for Tense Shift (0%).

Summary for the DPF's DoI differential proportion analysis for Injury-event Type: Ambiguous (0%), in relation to Intentional (100%) and Unintentional (50%) included fewer mentions of Tense Shift with the injured child/youth in the role of Patient, and this is consistent with the earlier reported finding with the injured child/youth in the role of Agent. In the same

group comparisons, Ambiguous relative to Intentional and Unintentional, Ambiguous (100%) had more instances of excluding the mention of participants through the process of Nominalization (Intentional, 71.4%; Unintentional, 35.7%) and the use of Ergative Verbs (Intentional, 14.3%; Unintentional, 57.1%), and this is also consistent with the earlier reported finding with the injured child/youth in the role of Agent.

However, for Ambiguous, in contrast to the finding for Focus (11.1%) in relation to Intentional (25.5%) and Unintentional (19.2%) for the injured child/youth in the role of Agent, there were more instances of Focus (100%) in relation to Intentional (17%) and Unintentional (1.4%) for the injured child/youth in the role of Patient. Also for Ambiguous, similar to the finding for Prominence (100%) in relation to Intentional (4.3%) and Unintentional (1.4%) for the injured child/youth in the role of Agent, there were also more instances of Prominence (22.2%) in relation to Intentional (6.4%) and Unintentional (17.8%) for the injured child/youth in the role of Patient.

DPF's DoI differential proportion for Point-of-view, by level comparison. Parent vs. Non-parent. For Parent relative to Non-parent, Parent included three out of the five qualified estimate of deceit variables with a Feature Present = 1. Two of the three qualified variables were from the Other discourse feature category and were (I) less Tense Shift, and (II) more Ergative Verbs. The third qualified variable was from the Textual Organization category and was (III) less Focus. For Feature Absent = 0, Parent included two qualified variables that were (IV) more Nominalization and (V) less Prominence. In the case of Non-parent, the pattern was the inverse of the pattern for Parent, and this is detailed below (see Table 14).

Non-parent vs. Parent. For Non-parent relative to Parent, Non-parent included two qualified variables as Feature Present = 1, with one from the Other discourse features category

that was (I) more Nominalization, and the other from the Textual Organization category that was (II) less Prominence. For Feature Absent = 0, Non-parent in relation to Parent included three language-use features. Two of the features were from the Other discourse features category and were (I) less Tense Shift, and (II) more Ergative Verbs. The third feature was from the Textual Organization category and was (III) less Focus. The differential proportion for Feature Present = 1 between Parent and Non-parent across the five proxy variables for the estimate of deceit as Dissimulation of Intent for the injured child/youth's role as Patient was 40% to 60% respectively, with a total differential between groups ratio of 20 (see Table 14).

DPF's DoI differential proportion for Point-of-view, by level. Parent. For Feature Present = 1, Parent included more instances of (I) more Ergative Verbs. For Feature Absent = 0, Parent included more instances of (I) less Prominence; For the differential proportion without the qualification, Parent in relation to Non-parent included a higher proportion for Ergative Verbs (55.6%) and Prominence (14.1%), and a lower proportion for Tense Shift (50%), Nominalization (33.3%), and Focus (3.1%) (see Table 14).

Non-parent: For Feature Present = 1, Non-parent included more instances of (I) more Nominalization. For Feature Absent = 0, Non-parent included more instances of (I) less Tense Shift, (II) and less Focus. For the differential proportion without the qualification, Non-parent in relation to Parent included a higher proportion for Tense Shift (66.7%), Nominalization (53.8%), and Focus (10.8%), and a lower proportion for Ergative Verbs (38.5%), and Prominence (13.8%) (see Table 14).

Summary for the DPF's DoI differential proportion analysis for Point-of-view: Parent, in relation to Non-parent included fewer instances of Tense Shift, Nominalization, and Focus, but a higher proportion for Ergative Verbs. In comparison to the earlier finding for Point-of-view with

the injured child/youth in the Agent role, the language-use pattern only differs between the two variables from the Textual Organization grammar category that were Focus and Prominence. That is, in the case of the earlier finding for Point-of-view with the injured child/youth in the Agent role, Focus and Prominence included a smaller frequency. However, in the case of the earlier finding for Point-of-view with the injured child/youth in the Patient role, only Focus included a smaller proportion. This means that in the case of the earlier reported finding for Point-of-view with the injured child/youth in the Patient role, Parent as compared to Non-parent was more likely to mention the injured child/youth in the clause's structural site for Prominence, making the tally of Feature Present = 1 variables for the estimate of dissimulation of intent as DoI equal to three for Focus and Prominence rather than four for the injured child/youth in the Agent role for Focus and Prominence. Considered together, the language-use patterns showed that in the instances when the injured child/youth was in the Patient role, the pattern was less like the proposed pattern for the estimate of dissimulation of intent as DoI.

Summary for the DPF's DoI differential proportion for Injury-event Type and Point-of-view: Overall, the Feature Present = 1/Feature Absent = 0 pattern across the five qualified variables was the same for the level comparisons. For example, Intentional from Injury-event Type and Non-parent from Point-of-view, included a Feature Present = 1 for (I) more Nominalization, and (II) less Prominence, and Feature Absent = 0 for (III) less Tense Shift, (IV) more Ergative Verbs, and (V) less Focus-Patient. Similarly, the Feature Present = 1/Feature Absent = 0 pattern for Unintentional and Parent included the same Feature Present = 1 for (I) less Tense Shift, (II) more Ergative Verbs, and (III) less Focus, and Feature Absent = 0 for (IV) more Nominalization, and (V) less Prominence. Notably, the Feature Present = 1/Feature Absent = 0 pattern for Unintentional and Parent were the inverse of the pattern for Intentional and Non-

parent. In the level comparisons, these two patterns showed that Non-parent more frequently than Parent included linguistic features that were the same as the linguistic features for Intentional. In the case of Parent these two patterns showed that Parent more frequently than Non-parent included linguistic indicators that were the same as the linguistic features for Unintentional. This finding is consistent with respect to the sameness in pattern specific to the Feature Present = 1/Feature Absent = 0 language-use features in the level comparisons analysis for the injured child/youth in the role of Agent noted earlier.

In the level comparisons, the pattern for Ambiguous Feature Present = 1/Feature Absent = 0 was consistent in its two level comparisons Intentional vs. Ambiguous and Unintentional vs. Ambiguous. This means that Ambiguous could be useful in distinguishing Ambiguous from Intentional and Unintentional. Additionally, Ambiguous could also be useful in distinguishing Intentional from Unintentional when its proportional distribution across the five proxy variables are looked at together with its Feature Present = 1/Feature Absent = 0 pattern. For example, the relative proportion for Intentional as compared to Unintentional in relation to Ambiguous was proportionally higher across four out of the five proxy variables. The exception was for the proxy variable Ergative Verbs. This means that the relative higher proportion of Ergative Verbs for Unintentional (57.1%, as compared to Intentional 14.3%) could be a linguistic feature that could be useful in making a distinction between Intentional and Unintentional despite their equivalent Feature Present = 1/Feature Absent = 0 pattern when compared to Ambiguous.

DPF's DoI Fisher's Exact Test for Injury-event Type. The Fisher's Exact Test between Injury-event Type and each of the five unqualified estimate of deceit variables identified one significant ($p < .05$) association. The association was with Focus 1 ($p = .004$, $V = 0.299$, $\eta^2 = .089$), and this was consistent with the significant ($p < .05$) association that was reporter earlier

for the injured child/youth in the Agent role. In contrast, a significant association between Injury-event Type and Tense Shift was not identified ($p > .05$) with the injured child/youth in the Patient role that was significant in the finding reported earlier for the injured child/youth in the Agent role. This difference may be related to the lesser degree of control over events that is associated with injured children/youths in the Patient role as compared to the instances when they are assigned the Agent role. In such a case, the relationship between an event's features (a) loss of control and (b) Patient role may lead to a lesser degree of emotionality due to the concordance between the more likely expectation of a lesser degree of control and, therefore, the lesser degree of control to lose. Whereas, in the case of the injured child/youth in the Agent role, the loss of control may be a less likely expectation, so the lack of concordance between the expectation of control and the greater degree of control to lose may result in greater emotionality. In turn, the greater emotionality is more likely to evoke more Tense Shift for the instances where the injured child/youth is in the Agent role (O'Kearney & Perrott, 2006).

DPF's DoI Fisher's Exact Test for Point-of-view. The Fisher's Exact Test did not identify any significant ($p > .05$) association between Point-of-view and the five unqualified estimate of deceit proxy variables, and this is consistent with the finding noted for the injured child/youth in the Agent role.

Summary for the DPF's DoI Fisher's Exact Test for Injury-event Type and Point-of-view: The findings for the analyses for the injured child/youth in the Patient role were similar in three ways to the findings obtained with the injured child/youth in the Agent role noted earlier. One similarity was in the significant ($p < .05$) association between Injury-event Type and Focus. Another similarity was the absence of significant associations between Point-of-view and the five unqualified proxy variables for the estimate of dissimulation of intent as DoI. The third

similarity was specific to the Textual Organization grammar category variables Focus and Prominence that helped note where in a clause's structural site the mention of the injured child/youth was placed in instances when the injured child/youth was in the Agent role or in the Patient role.

In the case of the qualified variable less Focus, it included a similarity in the level comparisons for the Feature Present = 1/Feature Absent = 0 language-use pattern across both DoI analyses (injured child/youth in the Agent role; injured child/youth in the Patient role). The noted similarities were between two level comparisons that were Intentional vs. Unintentional and Parent vs. Non-parent. When considered as Feature Present = 1/Feature Absent = 0 patterns, the variable levels Unintentional and Parent included the same three Feature Present = 1 and two Feature Absent = 0, and the variable levels Intentional and Non-parent included the same two Feature Present = 1 and three Feature Absent = 0.

With respect to the two Textual Organization grammar category's qualified variables less Focus and less Prominence, less Focus tended to be consistent across the DoI analyses (injured child/youth in the Agent role; injured child/youth in the Patient role) for (a) the Intentional vs. Unintentional level comparison that included the Feature Absent = 0 for Intentional and a Feature Present = 1 for Unintentional, and also for (b) the Parent vs. Non-parent level comparison that included a Feature Present = 1 for Parent and a Feature Absent = 0 for Non-parent. These patterns indicated that the variable Focus could potentially be made a part of a set of linguistic features that can help identify the potential inclusion of covert mentions of intent in intentional injury-event descriptions as compared to unintentional injury-event descriptions in instances that include the injured child/youth either in the role of Agent or Patient.

In contrast, for the qualified variable less Prominence, it did not include a similarity in the level comparisons. Instead, less Prominence included a within-groups similarity across the two DoI analyses. Notably, said similarity was for the two level comparisons that were not consistent across the two DoI analyses for the qualified variable Focus. The two consistent Feature Present = 1/Feature Absent = 0 pattern for less Prominence involved the level comparisons Intentional vs. Ambiguous and Unintentional vs. Ambiguous, and the specific similarities for Intentional and Unintentional getting coded as Feature Present = 1, and Ambiguous getting coded as Feature Absent = 0 in both group comparisons. This means that for the qualified variable less Prominence across the two DoI analyses, the use of less Prominence tended to be consistent with the injured child/youth in the Agent role and in the Patient role in two (Intentional vs. Ambiguous and Unintentional vs. Ambiguous) out of three level comparisons for Intentional Injury-even Type, but not in the one out of one level comparison for Point-of-view (Parent vs. Non-parent).

Summary viewed from the experiential dimensions of body, mind, and context: For the DPF's DoI specific to the injured child/youth in the role of Patient, this view provided an informative outline of how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context. For the body domain, the language-use data pattern showed that ambiguous injury-event descriptions were more likely to include a higher proportion of nominalized verbs, followed by intentional and unintentional injury-event descriptions, and this was consistent with the earlier reported finding for the injured child/youth in the Agent role. Similarly, in the case of Ergative Verbs, Ambiguous injury-event descriptions were also more likely to include a higher proportion as compared to unintentional and intentional injury-event descriptions, and this was also consistent with the earlier reported finding for the injured

child/youth in the Agent role. Together with the language-use features from the mind domain such as the absence of Tense Shift, as well as having the lowest proportion of Focus, Ambiguous denoted a language-use pattern that included almost as may features that likened it to the estimate of deceit as Dissimulation of Intent (DoI), as compared to those features that were identified for the same analysis with the injured child/youth in the Agent role.

The excepted variable that made this analysis for Ambiguous with the injured child/youth in the Patient role distinct from the earlier pattern reported for the injured child/youth in the Agent role was less Prominence. Instead, rather than less Prominence including a zero proportion (0%), Prominence included the highest proportion (22.2%) with the injured child/youth was in the Patient role. This finding suggested that in the instances where the injured child/youth was in the Patient role, the two Textual Organization variables less Focus and less Prominence were more likely to include a Feature Absent = 0, because they included the highest proportion of Focus and Prominence for Ambiguous as compared to Intentional and Unintentional. This contrast in least (Agent role) vs. most (Patient role) for Focus and Prominence could be a pattern that could help identify relational roles in injury-event descriptions when the injured child/youth's relation (e.g., son) to an interactant (e.g., mother) is not explicitly mentioned, and render otherwise ambiguous injury-event descriptions interpretable for intent. Additionally, when the excepted variable is accounted for, this made the estimate of dissimulation of intent as DoI with the injured child/youth in the Patient role less like the estimate of DoI as compared to the patterns for the estimate of DoI with the injured child/youth in the Agent role.

Summary for the DPF, DoI's for Injury-event Type and Point-of-view: Overall, the grammar-based study of the estimate of Dissimulation of Intent with the injured child/youth as Patient indicated that the content and structure of injury-event descriptions varied by Injury-

event Type and Point-of-view. For example, viewed in a more familiar way with unqualified variables, the patterns for the five proxy variables for the estimate of deceit provided an idea of the proportional differences, including the differences in range and distance of the values. The unqualified view follows. Considered together, in instances when the injured child/youth's role was Patient, they were mentioned (a) least frequently in Unintentional (1.4%) and most frequently in Ambiguous (100%) in the clause's Focus position; (b) least frequently in Intentional (6.4%) and most frequently in Ambiguous (22.2%) in the clause's Prominence position; and (c) less frequently in Parent for Focus (3.1%) and Prominence (13.8%), and most frequently for Focus (10.8%) and Prominence (14.1%).

4.3 Summary for Hypotheses 1, 2, and 3

Hypothesis 1. Based on earlier pilot work by the author, it was hypothesized that the language used to describe intentional injury-events would be different from the language used to describe unintentional injury-events. The expected language-use differences were in the proportion of word-choice references that would be made to negative emotions as compared to positive emotions, references to others, spatial locations of the interactants in relation to each other, and activity (e.g., verbs). Findings: The findings for hypothesis 1 included significant post-hoc differences ($p < .05$) between the levels of the independent variable Injury-event type that were Intentional (INT), Unintentional (UNT), and Ambiguous (AMB). AMB was a third injury-event type that emerged during the data coding and is considered here as a part of the NIHS's data collection textual context's structure for the WTC data set.

I. Emotions as Negative Emotions:
   - INT, UNT, and AMB: $\eta^2 = 0.034$, $H = 6.835(2, N = 204)$, $p = .033$
   - INT and AMB: $\eta^2 = 0.068$, $H = 6.782(1, N = 101)$, $p = .009$

Emotions as Anger:

- INT, UNT, and AMB: $\eta^2 = 0.104$, $H = 21.207(2, N = 204)$, $p = .001$
- INT and UNT: $\eta^2 = 0.072$, $H = 13.070(1, N = 182)$, $p = .001$
- INT and AMB: $\eta^2 = 0.127$, $H = 12.700(1, N = 101)$, $p = .001$

Emotions as Positive Emotions:

- Significant differences were not identified ($p > .05$)

II. References to others as Social Processes:

- INT, UNT, and AMB: $\eta^2 = 0.084$, $H = 16.990(2, N = 204)$, $p = .001$
- INT and UNT: $\eta^2 = 0.057$, $H = 10.249(1, N = 182)$, $p = .001$
- INT and AMB: $\eta^2 = 0.122$, $H = 12.214(1, N = 101)$, $p = .001$

References to others as Function words:

- INT, UNT, and AMB: $\eta^2 = 0.140$, $H = 28.429(2, N = 204)$, $p = .001$
- INT and UNT: $\eta^2 = 0.036$, $H = 6.446(1, N = 182)$, $p = .011$
- INT and AMB: $\eta^2 = 0.140$, $H = 25.649(1, N = 101)$, $p = .001$
- UNT and AMB: $\eta^2 = 0.130$, $H = 16.142(1, N = 125)$, $p = .001$

References to others as Pronouns:

- Significant differences were not identified ($p > .05$)

References to others as Personal Pronouns:

- Significant differences were not identified ($p > .05$)

References to others as She/He:

- Significant differences were not identified ($p > .05$)

III. Spatial locations of the interactants in relation to each other as Space:

- Significant differences were not identified ($p > .05$)

Spatial locations of the interactants in relation to each other as Prepositions:

- Significant differences were not identified ($p > .05$)

IV. Activity as Verbs:

- INT, UNT, and AMB: $\eta^2 = 0.074$, $H = 15.035(2, N = 204)$, $p = .001$
- INT and UNT: $\eta^2 = 0.022$, $H = 3.969(1, N = 182)$, $p = .046$
- INT and AMB: $\eta^2 = 0.143$, $H = 14.289(1, N = 101)$, $p = .001$
- UNT and AMB: $\eta^2 = 0.059$, $H = 7.290(1, N = 125)$, $p = .007$

I-V. Significant differences ($p < .05$) were identified in the proportion of word-choice

references that were made to negative emotions as compared to positive emotions, references to others as Function words[96], and activity (e.g., verbs), but not references to others as Pronouns, Personal Pronouns, She/He, or spatial locations of the interactants in relation to each other.

Hypothesis 2. It was hypothesized that Intentional injury-event language-use patterns would be less similar to Ambiguous and Unintentional injury-event language-use patterns, than Ambiguous injury-event language-use patterns are to those that are associated with Unintentional injury-event descriptions for the WTC and the DPF data sets. Findings:

- Analysis 1: The hypothesis was confirmed for (a) the Word Type Count (WTC) analysis (see Figure 3), and (b) the WTC's Likelihood of Deceit (LoD) estimate (see Table 7).
- Analysis 2: The hypothesis was confirmed (a) the Discourse Pattern Function (DPF) analysis (see Figures 5a and 5b), and (b) the two DPF Dissimulation of Intent (DoI) estimates made with the injured child/youth in the Agent role (see Table 13a), and with the injured child/youth in the Patient role (see Table 13b).
- Summary: Intentional injury-event language-use patterns were less similar to Ambiguous and Unintentional injury-event language-use patterns, than Ambiguous injury-event language-use patterns were to the language-use patterns that were associated with Unintentional injury-event descriptions. Overall, intentional injury-event descriptions included a higher number of variables, most of which included a higher proportion as compared to unintentional and ambiguous injury-event descriptions. The comparatively smaller number of variables and their generally smaller proportions per variable for unintentional and ambiguous language-use patterns were more closely similar to each other than either was to intentional language-use patterns.

Hypothesis 3. It was hypothesized that intentional (INT) injury-event descriptions would be less likely to include the qualified proxy language-use markers of potential deceit than unintentional (UNT) injury-event descriptions in (a) the estimate of the likelihood of deceit as LoD that was associated with the Word Type Count (WTC) differential proportion analysis, and (b) the

[96] The LIWC (2007) variable Function words is a supra-category that includes the LIWC (2007) categories Pronouns, Personal Pronouns, and She/He.

estimate of the dissimulation of intent as DoI that was associated with the Discourse Pattern Function (DPF) differential proportional analysis.

3.a The findings for Likelihood of Deceit's (LoD) differential proportion analysis with the WTC showed that (see Table 7):

I. Fewer first-person personal pronouns (e.g., I, me) as Feature Present = 1.
   Finding: INT did not include (Feature Absent = 0) fewer personal pronouns as compared to UNT.

II. Fewer Exclusive words (e.g., but, or, just, if) as Feature Present = 1.
   Finding: INT did not have (Feature Absent = 0) fewer personal pronouns as compared to UNT.

III. More Negative Emotion words (e.g., anger, depression) as Feature Present = 1.
   Finding: INT did have (Feature Present = 1) more negative emotions as compared to UNT.

IV. More Motion words (e.g., run, climb, go) as Feature Present = 1.
   Finding: INT included the same proportion (Feature Absent = 0) of motion words as UNT.

V. More[97] Cognitive Mechanisms[98] (e.g., aware, think, determine) as Feature Present = 1.
   Finding: INT included the same proportion (Feature Absent = 0) of cognitive mechanisms words as UNT.

I-V. Summary: Intentional injury-event descriptions were less likely to include the qualified proxy language-use markers of potential deceit than unintentional injury-event descriptions, and this was the case for four out of the five qualified proxy variables. The one out qualified proxy variable was more Negative Emotions.

3.b The findings for Dissimulation of Intent's (DoI) differential proportion analysis for the Injured Child/Youth in the Agent and Patient roles with the DPF showed that (see Tables 13a and 13b):

I. Less Tense Shifts (e.g., past to present) as Feature Present = 1.
   Finding: INT did not include (Feature Absent = 0) less Tense Shifts in the DoI as compared to UNT with the injured child/youth in the Agent role or with the injured child/youth in the Patient role.

[97] Informed by DePaulo et al. (2003).

[98] Informed by DePaulo et al. (2003), with "cognitive mechanisms" (a term used by Newman et al. [2003]) operationalized as cogitation.

II. More Nominalization (the use of a word from a word class that is not a noun and using the word as a noun, like using a verb as a noun) as Feature Present = 1.
Findings: INT did include (Feature Present = 1) more Nominalization as compared to UNT in the DoI with the injured child/youth in the Agent role, and also with the injured child/youth in the Patient role.

III. More Ergative Verbs (motion or change verb that can denote an act without the need to mention a Cause or Agent, e.g., "The tooth-line changed"). as Feature Present = 1.
Finding: INT did not include (Feature Absent = 0) more ergative verbs in the DoI as compared to UNT with the injured child/youth in the Agent role or with the injured child/youth in the Patient role.

IV. Less Focus (what is said at the start vs. at the end of an injury-event description's verb-clause) as Feature Present = 1.
Findings: INT did not include (Feature Present = 0) less Focus in the DoI as compared to UNT with the injured child/youth in the Agent role or in the Patient role.

V. Less Prominence (what is said at the end vs. at the start of an injury-event description's verb-clause) as Feature Present = 1.
Finding: INT did not include (Feature Absent = 0) less Prominence in the DoI as compared to UNT when the injured child/youth was in the Agent role, but did include (Feature Present = 1) less Prominence with the injured child/youth in the Patient role.

I-V. Summary: Intentional injury-event descriptions were less likely to include the qualified proxy language-use markers of potential deceit than unintentional injury-event descriptions, and this was the case for three out of the five qualified proxy variables. The two out qualified proxy variables were more Nominalization (Agent and Patient roles), and less Prominence (Patient role).

The linguistic analyses findings per the study's hypotheses corroborate the research questions' findings and help highlight how the mapping-out of injury-event details at the individual level, for the accounting of language-use patterns, can contribute objectively derived data that are specific to injury-event phenomena. Specific to the hypotheses for the WTC analyses, the expected between-groups differences found were in the proportion of word choice

references made to negative and positive emotions, where references to positive emotions did not figure in the study's findings. Additionally, references to others as Function words, spatial locations between the injured child/youth and the interactant, and activity type like leisure activities and sports, were present (addressing Hypothesis 1). Specific to the WTC and DPF, it was also expected that Intentional injury-event language-use patterns would be less similar to Ambiguous and Unintentional injury-event language-use patterns than Ambiguous language-use patterns would be to Unintentional injury-event descriptions (addressing Hypothesis 2).

It was also expected that Intentional injury-event descriptions would be less likely to include language-use markers for intent as Likelihood of Deceit according to the WTC output data, than Unintentional injury-event descriptions (addressing hypothesis 3). Differences were also expected for Intentional injury-event descriptions, based on the DPF, where Intentional injury-events were less likely to include language-use makers for intent Unintentional injury-event descriptions, Additionally, it was expected that Ambiguous injury-event descriptions would be more similar in language-use markers noted for Unintentional injury-event descriptions. Such differences and similarities were expected to be marked by the grammar features associated with (a) Agency and Intent specific to argument (also referred to as process) roles related to ideation, and (b) Deceit (Dissimulation of Intent) specific to morphosyntactic resources like nominalization and ergative verbs related to message organization, (addressing hypothesis 3).

CHAPTER 5. Discussion

This chapter outlines how this thesis's proposed method for the identification of intentional injuries has the potential to contribute to the multidisciplinary efforts aimed at addressing flagged knowledge gaps that are specific to intentional maltreatment injury (IMI) identification for the purpose of intervention and its prevention in the domains of research (e.g., Keenan et al., 2004; Caffey, 1946/2011; Kempe et al., 1962/1985; Hudson & Kaplan, 2006; Lonergan et al., 2003; CDC, 2006; Flaherty et al., 2008; Jenny, 2009; Christian, 2015), and practice according to interdisciplinary research teams (Gilbert et al., 2009a) and the Public Health Agency of Canada (PHAC, 2010).

The PHAC's (2010) summative statement on "knowing little" (p. 50) about the relationship between detected and undetected maltreatment cases at the level of identification and substantiation provides a fitting point of departure for this chapter on how the hypothesized linguistic similarities and differences between intentional injury-event descriptions and those that were not intentional were explored, and how the proposed method and findings provided a means to contribute a sample intentional injury query rubric that could facilitate the attainment of sensitivity and specificity in standard IMI identification processes in relation to the substantiation of IMIs. This study's entry point into the complex phenomenon of child and youth IMIs and their identification was through the comparison of entire injury-event descriptions (vs. keywords) by the levels of the study's two independent variables Injury-event Type (Intentional, Unintentional, Ambiguous[99]), and Point-of-view (Parent, Non-parent).[100]

[99] Ambiguous was operationalized in this study as ambiguous interaction features; for example, in 'She broke her arm', who broke the arm is ambiguous. Was 'she', used to reference a mother, a sister, a friend, or the injured? Ambiguous emerged as an injury-event type category during the coding of the data; therefore, Ambiguous was included as a level of Injury-event Type.

[100] The two independent variables and their levels are capitalized throughout. This is a reporting convention (per the American Psychological Association) that is meant to distinguish a research study's operationalized definitions (i.e., previously defined to refer to a specific construct within a specific research study's context) from their usual lexical dictionary entry or other research.

The pursued objective was to broaden the scope of interpretable language data that can be made available to frontline helping professionals during an injury consultation or reporting process with the purpose of facilitating their effort to distinguish intentional injury-event descriptions from those that are not intentional. The proposed means to inform the preliminary steps that are required to do so formally at a later date, and a key contribution specific to the proposed method, was the use of the entire text-data in the study's injury-event descriptions to see if and how the descriptions were similar or different by more than one injury-event type (vs. only intentional) and by more than one type of adult household member who provided the description (vs. only parent). This was necessary for the identification of between-group differences by the type, number, and frequency of words (WTC) that tended to be used by Injury-event Type (see Tables 6a and 6b) and Point-of-view (see Table 6c), and by the meaning conferring language-use features that were more likely to be associated with interaction processes (DPF) by Injury-event Type (see Tables 10 and 11) and Point-of-view (see Table 12).

The two linguistic analysis techniques that were used to help broaden the scope of interpretable language data and the identification of language-use patterns advanced this effort in different but complimentary ways. One technique is based on a set of experimentally derived word categories offered by the Language Inquiry and Word Count software (LIWC, 2007), and was used to get an automated tally of the words by word category in the study's sample. The second technique is based on the modern standard English descriptive grammar offered by Asp and de Villiers (2010), and was used to obtain a tally of discourse process categories and their constituent linguistic features that accounted for the types of interactions in the injury-event descriptions. To demonstrate how the linguistic data can be made available for the purpose of developing method that can work to assist with distinguishing intentional injury-event

descriptions from those that are not intentional, the identified linguistic patterns that are specific to this thesis's data were used to inform the development of a sample intentional injury identification rubric –sample as in not for use, many more steps are required to make this sample usable (see Figure 6).

Another key conceptual element included presenting the findings by the experiential domains of body, mind, and context to learn how the injured children and youths were conceptualized in injury-event descriptions. The WTC was useful in tallying words that were explicitly used to reference the injured child or youths' body, mind, and context (social context, e.g., friend, step-mother, neighbor; and material context, e.g., car, backyard, chair) experiential domains according to the LIWC (2007) dictionary. In contrast, the DPF was useful in tallying both the interactional processes that were and were not explicitly used to reference the injured child or youths' body, mind, and context experiential domains. When not explicitly made, references to interaction processes were inferable based on the available text's expected constituent linguistic elements.[101] In particular, the DPF helped make evident how the injured children and youths were referred to (e.g., a body part or a person), perceived (e.g., agent or patient) and accounted for (e.g., involved in the injury outcome as a participant in a coactive event, or as another thing that happened to be in the surround), and whether they were made focal or prominent based on where they were mentioned in a clause (textual organization) in the injury-event description.

The WTC and DPF linguistic analysis techniques helped identify what words and discourse elements distinguished one type of injury-event from another and one type of point-of-view from another. The DPF allowed for a comprehensive analysis of the linguistic features that

[101] For example: For 'man', a determiner 'the' or 'a' is expected for 'the man' or 'a man', similarly, if 'a man' is the subject then a verb is expected next as in 'a man hit', and then an object would be expected after the verb for 'a man hit the child').

were used as expressions of the intra- and interpsychic interaction elements in the injury-event descriptions at the individual level that would not be otherwise available only with the WTC, and the WTC contributed information on the types, number, and frequency of words that were involved in the expressions of the intra- and interpsychic interactions in the study's injury-event descriptions.

The words in the WTC tally were analyzed with a mean rank comparisons statistical technique (Kruskal-Wallis *H* test) to query for the presence of between-group mean rank differences that were above chance across the dependent variables (i.e., statistically significant with an alpha level of 0.05) by Injury-event Type and Point-of-view. The process based linguistic features in the DPF tally were analyzed with a test for independence (Fisher's Exact Test) statistical technique to query for the presence of independence across the categorical dependent variables (i.e., statistically significant with an alpha level of 0.01) by Injury-event Type and Point-of-view.

Beyond the WTC and DPF linguistic patterns that were identified for the sample as a whole, an inquiry for the potential inclusion of deceit in the injury-event descriptions was also made. This exploration was undertaken to address frontline helping professionals' concern with missing an accurate determination of 'intentional injury' when intentional injury-event descriptions are described as if they were unintentional. The concern is based on potentially risking their patient, client, or student's (Gilbert et al., 2009a) ongoing exposure to intentional injuries, including intentional maltreatment injuries (IMIs), when the child or youth is sent back home. The analysis for the estimate of the potential inclusion of deceit was done with a sample of randomly selected cases, for five WTC and five DPF qualified proxy variables (see Study Variables) for the estimate of deceit by Injury-event Type and Point-of-view.

The analysis technique that was involved in the query for the potential inclusion of deceit was a differential proportion analysis where the proportional values for each of the five proxy variables per the levels of the independent variables were considered in a level comparison for Injury-event Type (i.e., Intentional vs. Unintentional, Intentional vs. Ambiguous, Unintentional vs. Ambiguous) and Point-of-view (i.e., Parent vs. Non-parent) and coded with either as a Feature Present = 1 or Feature Absent = 0 based on the qualifier (i.e., fewer, more) that was ascribed to each of the five proxy variables (see Study Variables). For example, in the case of the level comparison Intentional vs. Unintentional in the WTC's estimate of deceit, the dependent proxy variable Personal Pronouns was qualified as 'fewer Personal Pronouns', so the coding for Intentional on this qualified dependent variable would be zero (Feature Absent = 0) if its proportional value was higher (in this case it was 9.1%) than it was for Unintentional (4.6%) which means that the coding for Unintentional would be one (Feature Present = 1) (see Table 7). The same Feature Present = 1 or Feature Absent = 0 coding procedure was done for the DPF estimate of deceit. Notably, the DPF estimate of deceit included two versions to account for the language use patterns for the times when the injured child/youth was in the Agent role (see Table 13a) and in the Patient role (see Table 13b). The contribution of the WTC and DPF linguistic analyses for the entire sample is described first before that of their respective estimates of deceit (e.g., WTC, WTC's Likelihood of Deceit [LoD], DPF, DPF's Dissimulation of Intent [DoI]).

The overall WTC findings indicated that intentional injury-event descriptions as a type (Intentional) included more detailed descriptions in the form of a higher frequency of total significantly different dependent variables and had a higher number of said variables with a greater proportion as compared to Unintentional that ranked second to Intentional on the proportion of detail, and Ambiguous that ranked third to Intentional on the proportion of detail.

The WTC findings also indicated that despite the greater number of significantly different dependent variables that were associated with Intentional injury-event descriptions, some feature present proportions were greater for Ambiguous injury-event descriptions than they were for Intentional and Unintentional injury-event descriptions. This finding for the injury-event type Ambiguous was notable because Ambiguous included the fewest number of significantly different dependent variables, and of these, most had a feature present proportion that was lower than Intentional and Unintentional. In the case of the injury-event type Unintentional, it only included one more frequent feature present, and this was for the one variable Six Letters or More (words that were six letters or longer) that trended as a higher proportion as compared to the injury-event type Intentional, yet not significantly.

Concerning the WTC proportional pattern that had Intentional ranked first with the highest proportion followed by Unintentional as second and Ambiguous as third, when interpreted along with the findings for the WTC's estimate of deceit, the proportions were consistent with Porter and Yuille's (1996) findings. Porter and Yuille (1996) identified similar significant proportional distributions specific to their dependent variable Details[102] across their experimental conditions that may be understood as analogous to the injury-event types used in this thesis, as follows: Truthful Confession[103] that was ranked first on the proportion of detail (akin to Intentional that included more linguistic detail), Truthful Alibi[104] that was ranked second (akin to Unintentional that included some event details), and Partial Deception[105] that was ranked third (akin to Ambiguous that excluded the event's interaction process details). Of note, Porter

[102] To the extent that it is here theorized that descriptions of intentional injuries will be less likely to include some measure of deception, 'intentional' injury-event descriptions would be expected to be more detailed than both 'ambiguous' and 'unintentional' descriptions.

[103] Participants were asked to provide a completely truthful account admitting their involvement if requested.

[104] Participants were asked to simply relate the complete truth about anything that was asked by the interviewer.

[105] Participants were asked to provide an account containing "some truth and some falsehood" and to deny any knowledge of the transgression.

and Yuille's (1996) study showed that the proportions for the two independent variables that indexed 'truthful' (Truthful Confession and Truthful Alibi) included a higher proportion of detail as compared to the two independent variables that indexed 'deception' (Partial Deception and False Alibi), indicating that 'truthful' accounts are more likely to include greater event detail than those accounts that are less or not 'truthful'. Porter and Yuille's (1996) study looked at first-hand reports made by undergraduate study participants about a transgression they committed against another person according to their assigned experimental condition (noted above) when they reported the event on how the transgression happened.

The WTC analysis findings for intentional injury-event descriptions were also consistent with other research. Pennebaker and Chung (2011) reported that the inclusion of more rather than less detail from across experiential domains, like those that are operationalized in this study as body, mind, and context, are more common for experienced events,[106] such as a personal upheaval. This finding was obtained in a clinical psychology study context on the relationship between adults' disclosure of a personal upheaval and the later health benefits of the disclosure. Findings further suggest that the inclusion of such explicit and more detailed expressions of adults' lived experiences are fewer or not likely when they are imagined or have details in their respective descriptions changed (e.g., putting in or taking out words to modify how an event happened) when not imagined (DePaulo et al. 2003). The opposite is the case when the described experiences are not imagined and not changed and are instead expressed using words that wholly and explicitly reference the experienced phenomenon across the body, mind, and context experiential domains. This latter finding came from studies in the forensic linguistics setting where the association of the language in event disclosures and expressions of truthfulness was

[106] Experienced events were considered in this study as events that were either witnessed or were heard-of accounts (van Toledo & Seymour, 2013), because both witnessing and hearing about an injury-event were possible means for the reporting parent or non-parent adult household member to know that an injury took place in the household.

considered (DePaulo et al., 2003; Adams & Jarvis, 2006). The DePaulo et al. (2003) and Adams and Jarvis (2006) findings which also corroborate the current study's overall language-use pattern for intentional injury-event descriptions with respect to the greater amount of detail that is more likely to be associated first with Intentional as compared to Unintentional (second), and Ambiguous (third) injury-event description types.

The current study's findings on the type of detail that was more likely to be associated with Intentional as compared to Unintentional, and Ambiguous injury-event description types, was also consistent with the findings on word type reported in the same Pennebaker and Chung (2011) study. They observed differences in the use of words by word type and the proportion of the type of words that were associated with improved mood. The differences in mood were indicated by the word use patterns (e.g., higher proportion of positive emotion words as compared to the proportion of negative emotion words) that were more likely to be associated with expressions of a better sense of health as opposed to no such sense. This means that the types of words that were associated with improved mood were expressions of said experienced mood (Boyd & Pennebaker, 2015). For this reason, the word types and patterns identified with the WTC analysis are considered in this study to be representative expressions of injury-event descriptions' features. Such features were therefore considered as words that were deemed necessary and relevant first by a speaker (the participant) and then by the NHIS field representative (the transcriptionist) to qualify how an injury happened.

The study's WTC analyses' findings supported those of the DPF's, as well as the findings in forensic linguistic studies. At the word level, the injury-event descriptions' features that were noted above concerned the association of the explicit mention of event details (content) and an event description's length (structure) (Pennebaker & Chung, 2011; DePaulo et al., 2003; Adams

& Jarvis, 2006; Coulthard & Johnson 2010; Asp, 2000). Explicit mention of details also speaks to the attention that is given by the person to the information that they choose to provide (e.g., Porter & Yuille, 1996). Such attention includes the temporal focus of the speaker, where the focus, if past, present, or future is associated with the speaker's valuing of a person's behaviour. If the speaker does not value the person (e.g., an opponent; an aggressor), the speaker is more likely to describe the behaviour of the non-valued person negatively and in the past tense (Tausczik & Pennebaker, 2010). This finding was also supported by the current study's WTC analysis in that intentional, as opposed to unintentional injury-event descriptions, were more likely to include references to past events that were not only experienced as negative, but as anger evoking during social interactions with known others.

For unintentional injury-event descriptions, the one variable that trended as a higher proportion for Unintentional as compared to Intentional was Six Letters or More. While not statistically significant after the post-hoc test, this one variable's 13:1 ratio for the WTC analysis, in relation to Intentional, was useful nonetheless in noting the linguistically distinct feature that emerged for the Unintentional injury-event type category in the current study and to provide an explanation for this observation. The inclusion of longer words has been identified as a type of change that is associated with a deliberate effort to modify an event's description. That is, a modification could take the form of using a longer word instead of a shorter word. Shorter words require less cognitive effort to access because they are short and more likely to be common and familiar to most people since shorter words are more likely to be used frequently. In the case of longer words, they require more cognitive effort to access (Criss, Aue, & Smith, 2011), so are more likely to be less frequent in daily use, so less common and less familiar, and are therefore believed to require greater cognitive effort to access and to use concordantly with all the other

details that are associated with the event in question (Shannon, 1950; Zipf, 1949; Ferrer i Cancho & Solé, 2003). Notably, while this linguistic feature, Six Letters or More, for Unintentional injury-event descriptions represents a count of one, it provides insight into which one language-use feature may work to potentially have an otherwise intentional injury-event description be understood by a listener as an unintentional injury-event description instead.

Because the Six Letters or More language-use feature was also observed for Ambiguous along with other variables, it is not possible to make the same type of one variable distinction between Intentional and Ambiguous as it was between Intentional and Unintentional (i.e., 13:1) injury-event description types. The pattern that emerged for Ambiguous was one that included three language-use features in addition to the feature that defined ambiguous injury-events as Ambiguous at the time of coding the text-data which was the exclusion of interactional features in an injury-event description that would otherwise allow for the identification on who did what to whom (e.g., 'She broke her arm' vs. 'Her mom broke her arm'). The three additional language-use features that were specific to Ambiguous were the more frequent inclusion of words that were Six Letters or More as compared to Intentional and Unintentional injury-event descriptions. Ambiguous also included the more frequent expression of overall Affect and Perceptual Processes as compared to the injury-event types Intentional and Unintentional and when contrasted with the injury-event type Unintentional respectively.

Since the greater use of words that were six letters or longer was an indicator of cognitive effort at the word level, the supposition that the use of longer words can work to change a description so as to modify how an injury-event happened, was well supported (i.e., statistically significant) in the pattern that emerged for the variable Six Letters or More for the injury-event type Ambiguous. The proportion for Six Letters or More for the injury-event type Ambiguous

was higher and significantly different from the injury-event types Intentional and Unintentional. The more frequent use of longer words may have been partly necessary for a speaker to convey an injury-event description that accounted for sufficient information in order to answer the question 'How did the injury happen?' in a way that made sense to the listener given the already absent interactional roles. These patterns are consistent with previous evidence for less than forthright event descriptions in the DePaulo et al. (2003) and Adams and Jarvis (2006) findings.

On the exclusion of interactional features as overall Affect for the injury-event type Ambiguous, a higher proportion of overall affect words was observed for Ambiguous as compared to the injury-event types Intentional and Unintentional; however, the higher proportion for overall Affect only significantly distinguished the injury-event type Ambiguous from the injury-event type Unintentional. The greater use of overall affect words that include positive and negative emotion words, has been associated with truthful accounts (Bond & Lee, 2005). However, the expression of affect is meant to be congruent with an experienced event's context (Pennebaker & Chung, 2011; Vrij et al., 2007), and positive affect is not fully congruent with an injury outcome. On the contrary, the injury outcomes for Intentional injury-event descriptions in this study were notably qualified by negative affect, particularly expressions of anger, for the Intentional injury-event type descriptions. Indeed, references to positive emotion words as the variable Positive Emotion words was not statistically significant in the study's sample.

The inclusion of a range of expressions from positive to negative emotions reflects the larger literature on the reference to overall affect that includes expressions of negative and positive affect (rather than only one type like negative affect for intentional injuries) has also been associated with a speaker's effort to present themselves favorably to another person (e.g., interviewer). Overall affect can also be used as a relational strategy where the speaker uses both

expressions of positive and negative affect and adds or subtracts one type of affect over another in response to the listener's reaction during the interaction. That is, the listener's reactions are what informs the speaker on which type of affect is more adequate to use over another for the purpose of making their modified description acceptable to the listener (DePaulo et al., 2003).

In the absence of interactional features, however, as was the case for Ambiguous injury-event descriptions, expressions of the valuing of the interaction features that are congruent with an injury-event outcome would correspondingly be less likely to be included, (e.g., negatively valanced per the use of negative emotion words in the context of an injury outcome); thus, the expression of affect would more likely be what it was for the injury-event type Ambiguous, which was overall affect. This is consistent with expressions of overall affect in event descriptions where overall affect did not feature as a marker of veracity or deceit (Adams & Jarvis, 2006). This was because sufficient knowledge about the event's context was not available to the listener in the event description that was given (Burgoon, Hamel, & Qin, 2012). In the present study, the absence of an explicit mention of interaction roles for the injury-event type Ambiguous is akin to the lack of sufficient knowledge about the event's context noted by Burgoon et al. (2012), where the listener is not able to gauge from what is said to them if the expressions of overall affect were congruent with the nature of the injury-event interactants' role aside from the injury outcome.

The injury-event type Ambiguous trended toward a higher but non-significant proportion of words that were associated with perceptual processes (e.g., see, touch, hear). While not statistically significantly different, this trend in the expression of perceptual processes is important to note because their inclusion has been associated with truthful accounts (Vrij et al., 2007). This is because perceptual processes are harder to modify in a way where the

modification can be made to remain plausible and congruent with all the other details in the injury-event description (Bond & Lee, 2005; DePaulo et al., 2003). This means that if the reporting of perceptual features in the injury-event description are known to be accurate, but exclude the interactants' roles (as is the case for Ambiguous), it could be the case that this linguistic pattern shows accurate knowledge of the event's details along with the choice to exclude information on who did what to whom.

Overall, Ambiguous injury-event descriptions could be interpreted as forthright in so far as constituting an account that an injury-event happened as confirmed with accurate perceptual detail, but not fully forthright as confirmed by the absence of interaction roles, and the inclusion of words that are six letters or longer that are less commonly used and indicate volitional changes to the description of how an injury happened. Considered together, the pattern for the three variables that distinguished Ambiguous indicate a type of covert mention of intent. This finding for the injury-event type Ambiguous supports the Porter and Yuille (1996) findings for their experimental category Partial Deception that includes some truth and some falsehood.

The study's second independent variable Point-of-view with its two levels, Parent and Non-parent, included two significant WTC variables from which a pattern emerged nonetheless and was unexpected. The two variables were Verbs and references to the Past. The pattern for Non-parent provided injury-event descriptions included a higher proportion of references to verbs and references to the past than those that were Parent provided. This was the case even when the number of Parent injury-event descriptions was greater than those that were provided by a Non-parent.

References to the past and verbs were described by Tausczik and Pennebaker (2010) as tensed verbs that provide information on a person's temporal focus of attention while they

describe an event (Tausczik & Pennebaker, 2010). In the context of reporting injury-events that took place 90 days prior to the NHIS interview, a higher frequency of references to verbs that were tensed in the past in Non-parent descriptions was not an unexpected finding. Similarly, the inverse finding for Parent reported injury-event descriptions, was not an unexpected result either, given that a parent is generally expected to have a closer emotional tie to their injured child so would be more likely to experience heightened emotionality that could approximate vicarious trauma.

In such instances then, the retelling of the injury-event may involve less use of past tensed verbs when speaking about the injury-event again and possibly as if the event was taking place in the present (O'Kearney & Perrott, 2006). This phenomenon is referred to as the historical present tense (present tense to refer to past events) that can occur in spontaneous talk or in conversational narrative descriptions and is an indicator of emotional involvement. Traditionally the phenomenon is sometimes interpreted as making a story vivid or dramatic (e.g., Quirk et al. 1972), but is also now more often understood to be indexing heightened emotion or a reliving of something emotional (e.g., Fludernik, 1991). Of note, these were the language-use patterns that were identified for the level Ambiguous from Injury-event Type. The contribution of this finding is that the exclusion of interactants' roles in injury-event descriptions does not fully remove the expression of the interactants' involvement.

The discussion of the WTC differential proportion query into the potential inclusion of deceit in the injury-event descriptions by injury-event type and point-of-view follows. The inquiry that was made into the WTC's estimate of deceit was referred to as the Likelihood of Deceit (LoD) variable (see Study Variables). The summary finding for the LoD was: Intentional (vs. Unintentional) included 1-of-5 proxy features of deceit and Unintentional had 2-of-5, but

Intentional had more interactional features like negative emotion words, personal pronouns, social activities, and more exclusion of self from injury outcome processes; and Unintentional (vs. Ambiguous), rather than Ambiguous, had 4-of-5 proxy features of deceit and was most like Parent.

Per level, particular to Intentional, was its inclusion of one Feature Present = 1 for the proxy variable more Negative Emotion words. Particular to Unintentional and Ambiguous, was their inclusion of a Feature Present = 1 for the same two proxy variables that were fewer Personal Pronouns and fewer Exclusive words. The information that these two patterns provided was a means to say that for Unintentional there were fewer mentions of interactional features (e.g., identifying interactants) in the form of personal pronouns and fewer mentions of exclusive words to indicate how the speaker was not involved in the injury-event processes that lead to an injury outcome. The absence of exclusive words can indicate actual involvement in an event (Newman et al., 2003). Together with the use of fewer personal pronouns this pattern could be considered as a plausible means to evade ascribing agency to the interactant(s); thus, avoid clarity on who did what to whom.

The configuration for Unintentional (Unintentional vs. Ambiguous) rendered Unintentional the most like proxy estimate of deceit as Likelihood of Deceit (LoD); thus, the utility of the third comparative category Ambiguous is noted in that it helped to distinguish Unintentional from Intentional, and to note that Unintentional was most similar to Parent. In the case for Parent, however, concerning the mention of interactional features, Parent, unlike Unintentional, included a Feature Present =1 for fewer Personal Pronouns. Also for Parent, concerning the speaker's involvement in the injury-event, unlike Unintentional, included a Feature Absent = 0 for fewer Exclusive words. This means that in the case of Parent, looking at

these two qualified proxy variable differences shows that Parent as compared to Non-parent highlights (a) more frequent mentions of no self-involvement (Feature Absent = 0 for fewer Exclusive words), and (b) fewer mentions of the relational features between the injury-event's interactants (Feature Present = 1 for fewer Personal Pronouns).

This latter language-use pattern shows that Parent was more likely to include covert mentions of intent in injury-event descriptions and that such covert mentions of intent are more likely to include a combined configuration of proxy qualified variables for the estimate of deceit as Likelihood of Deceit from Unintentional (three Feature Present = 1 for more Negative Emotion words, more Motion words, more Cognitive Mechanisms words), and Ambiguous (one Feature Present = 1 for fewer Personal Pronouns; one Feature Absent = 0: fewer Exclusive words). Based on this finding, it is possible to comment that some of the Parent provided injury-event descriptions in the present study's sample may have been understood as being unintentional injury-event descriptions by a listener (i.e., the NHIS field representative). Should this type of potential miscoding take place in settings where intentionally injured children and youths present to helping professionals, it is possible that the opportunity to provide support to intentionally injured children and youths could be missed if their parent provided injury-event description is considered to be a description for an unintentional injury when marked with the linguistic features noted here for Unintentional.

Throughout the discussion of the language-use patterns for the WTC mean rank comparisons and the WTC's Likelihood of Deceit (LoD) estimate, it was notable that the inclusion and the exclusion of interaction roles were more likely to be associated with one vs. another injury-event type. Related to this, the analyses highlighted which words were more likely to be associated with one injury-event type and point-of-view over another. However, what

remained unanswered was how lexical selections (the words that are chosen by a speaker) were organized grammatically and syntactically (e.g., using agentless constructions such as 'There was a fight'), and discoursally by speakers to obtain their intended expressed meaning.

To address what remained unanswered with the WTC with respect to interactional features, a second linguistic analysis technique was used, and this technique permitted a view into details like how a word was used among a set of words to obtain an intended meaning. This second linguistic analysis technique was referred to as the discourse pattern function (DPF) descriptive grammar analysis that was informed and applied as outlined by Asp and de Villiers (2010). The contribution of the DPF findings built on the WTC's automated individual word count inventory that was obtained for the entire injury-event descriptions' sample. For example, of the total proportion of personal pronouns for injury-event type and point-of-view that were identified with the WTC's mean rank proportion analysis, the DPF helped identity those personal pronouns that were used to refer to the agent that inflicted the injury and those that were used to refer to the recipient (the patient) of the agent's actions. Similarly, the DPF's estimate of deceit Dissimulation of Intent (DoI), also allowed for an analysis of an estimate of deceit for injury-event descriptions in the instances where the injured child/youth was the agent and in the instances where the injured child/youth was the patient; whereas, the version of the WTC's Likelihood of Deceit (LoD) did not. The view into the semantic processes used to describe coactive events at the level of the dyad (injured child/youth and other person [parent or non-parent]) for the entire set of clauses in the sample and the DoI cases was facilitated by the DPF linguistic analysis technique. A discussion of the DPF tests of independence (Fisher's Exact Test) findings follows before the findings for the DPF's estimate of deceit as Dissimulation of Intent.

The DPF tests of independence included two different language-use patterns for the dependent variables that were associated with the variable categories Participants, Processes (verbs), Textual Organization, and Other Categories (variables designed by the author such as Injured Child/Youth Role Shift 1 as Agent) based on whether Ambiguous was included in the analysis or not. In the case of the present study, the two different language-use patterns (with and without Ambiguous) were reported because one goal of this project was to present the linguistic patterns that emerged for the purpose of more closely representing the language-use features for the entire NHIS data set, and to outline what such patterns may look like in samples from other data sets when compared with those identified in this study.

One key language-use data pattern was highlighted by the performed analysis based on whether Ambiguous was and was not included. When the analysis included Intentional and Unintentional only, the language pattern showed that Intentional included more frequent references to the injured child/youth in the first clause as a person, then as a body part, and third as not mentioned explicitly but inferred based on the textual context. This particular pattern of including an explicit mention or alluded reference to the injured child/youth as patient based on the injury-event descriptions' text highlighted how awareness of intent influenced the language-use pattern that followed this first part of the clause specific to discourse and information structure. In contrast, when the DPF analysis included Intentional, Unintentional, and Ambiguous, the data pattern instead showed that Intentional as compared to Unintentional the injured child/youth was less likely to be mentioned in the patient role. Instead, the injured child/youth was marginally more likely to be mentioned in the agent role, and significantly less likely to be mentioned in a second role in a subsequent clause.

In the case of the agent role there was a more marked contrast between Intentional and Unintentional and that was the significantly higher likelihood that the agent was not explicitly mentioned in Intentional as compared to Unintentional. Similar to the earlier reported WTC mean rank analysis, the DPF tests of independence also included the salient language-use characteristic which was the exclusion of semantic roles that are associated with coactive events and are used to indicate who did what to whom. In the case of the DPF, the absence of references to the injured child/youth (either as a person or as a body part) in the patient role, as well as the absence of mention of agency, worked to shift focus away from the injured child/youth as patient and prevented a more complete understanding of the injury-event descriptions' semantic roles.

In the case of the processes (verbs) (see Appendix A) that were more common in the level comparisons with and without Ambiguous, a different pattern was also observed for each level comparison. The Intentional and Unintentional level comparison included references to the injured child/youth as a body part in interactional processes of location, transfer or possession (e.g., they were taken to [e.g., hospital], the location where the injury-event took place [e.g., outside school], the way in which the injured or child/youth directed an object to their body [e.g., took a pill bottle from the medicine cabinet and swallowed the bottle's contents], and possession of an injury [e.g., possessing contusions to the eye]).

In terms of understanding where in the clause structure speakers were more likely to place emphasis, either at the start of a clause (a focus element), or last in a clause (a prominence element), there were also differences between the two level comparisons. For the Intentional and Unintentional level comparison, the textual organization highlighted the injured child or youth's role as patient as well as being the first role mentioned (as a person or as a body part), emphasized place as prominence, and included more elaboration. In contrast, Unintentional was

more likely to include adjuncts describing the manner (e.g., with a knife, on a mailbox, snuck up behind) in which the injury was inflicted. In the case of the comparison that included Ambiguous, Intentional included more details, and included a mention of the injured child/youth in the role of patient and the range of an activity as prominence. In the case of Unintentional, it included less details, and a more frequent mention of the injured child/youth as patient, the process, and the location of the injury-event. In this second level comparison that included Ambiguous, unlike the comparison that did not include Ambiguous, a direct reference to the injured child/youth was not made.

Specific to the DPF was that the linguistic patterns that were more likely to be associated with intentional injury-event descriptions. These patterns were more likely to include language-use features and configurations that explicitly referenced the injury-event's participant roles and at least one role so that the interaction role between or among the participants with respect to who did what to whom was discernable (e.g., 'Her mother broke her arm' vs. 'She broke her arm'). This finding was related to intentional injury-event descriptions' higher probability of including interaction processes which required that their expected linguistic constituent elements be mentioned, one of which included the injured child/youth, where such mentions were more likely to be references to the child/youth as a person or as a body part. Such explicit references to participants and processes were less likely for unintentional injury-event descriptions. Instead, unintentional injury-event descriptions were more likely to include indirect references to the interactants –that is, not explicitly mentioned but could be inferred based in the available text in particular the agent, as well as mention of processes that referenced how the body of the injured child/youth was in action, transported, or was a part of a series of circumstantial events.

The key language-use pattern offered by the DPF language analysis for the independent variable Injury-event Type was that Intentional, as compared to Unintentional included more references to the injured child/youth and was more likely to include a mention of the injured child/youth at the start of the first clause first as a person, second as a body part, and third as 'not mentioned' but inferred from the available text. This language-use pattern demonstrated that awareness of intentional injury influenced the discourse and textual organization of the language-use pattern that followed. Additionally, this key pattern also facilitated an understanding of what parent and non-parent (point-of-view) injury-event descriptions are more likely to be like when compared with injury-event types. In the case of Point-of-view the finding was that Intentional and Non-parent had fewer proxy features of deceit than Unintentional and Parent, and this was so with the injured child or youth in the Agent and Patient roles.

When compared with each other count-wise, for Intentional with the injured child or youth in the agent and patient roles were more similar than different to each other. However, while both instances of Intentional included a Feature Present = 1 for more Nominalization, only the DoI estimate for the injured child/youth in the patient role included a Feature Present = 1 for the proxy variable less Prominence. Count-wise, for Unintentional with the injured child/youth in the agent and patient roles were also more similar than different to each other. In the case of Unintentional though, it included a feature present for both focus and prominence with the injured child/youth in the agent role and included a feature present for less Focus, but not for less Prominence with the injured child/youth in the patient role. Considered together, these patterns show that Intentional with the injured child/youth in the agent role included a feature absent for less Focus and less Prominence, and for Unintentional a feature present for less Focus and less Prominence. In contrast, for the DoI with the injured child/youth in the patient role, Intentional

had a feature absent for less Focus and a feature present for less Prominence. Conversely, Unintentional had a feature present for less Focus and a feature absent for less Prominence.

This finding highlights the influence of how a speaker's chosen textual organization can have on the apportioning of a listener's attention when describing an event with linguistic features like focus and prominence. Since Focus represents what is said at the beginning of a clause and Prominence represents what is said at the end of a clause, it is possible to comment that Focus and Prominence are more likely to include a feature absent for less Focus and less Prominence when the injured child/youth is in the agent role, but is only so in instances where the injured child/youth is in the patient role for less Focus. Additionally, the pattern for Intentional was the same as the pattern for Non-parent provided injury-event descriptions in the DoI for the injured child/youth in the agent role and the same was the case for the DoI for the injured child/youth in the patient role.

The findings for the DPF's DoI estimate of deceit with the injured child/youth in the patient role included the same feature present and feature absent pattern for Intentional and Unintentional in their respective level comparison with Ambiguous (i.e., Intentional vs. Ambiguous and Unintentional vs. Ambiguous). Ambiguous, for the DoI, did not vary and was the same in both level comparisons. This shows that the DPF's means to query semantic relations that are associated with coactive events increases sensitivity for the purpose of distinguishing Intentional from Unintentional in the DoI estimate of deceit in the Intentional vs. Unintentional comparison, and this is unlike the findings for the WTC's LoD estimate of deceit where more obvious distinctions between Intentional and Unintentional were made when contrasted with Ambiguous. The language-use features that distinguished Intentional from Unintentional for the

DPF's DoI were a feature present for (1) more Nominalization, and (2) less Prominence, and a feature absent for (3) less Tense Shift, (4) more Ergative verbs, and (5) less Focus.

An important finding from the DoI analysis was that there was a marked overall difference in organizational structure between the Intentional vs. Unintentional injury-event descriptions which was evident in multiple systems (e.g., discourse information, information structuring) in terms of overall structure. The textual organization of focus and prominence differed in that, in the Intentional injury-event descriptions, references to the injured child/youth in the role of patient as first mention in the clause as focus occurred more frequently. This means that other grammatical choices that followed the injured child/youth in the role of patient as focus were influenced so that a number of different patterns were evident between the two injury-event description types based on this linguistic feature and its placement in the clausal structure. In addition to more frequently placing the injured child/youth in the role of patient as Focus (and less frequently as Prominence), there was a more frequent use of past tense and passive agent in the Intentional class of description. Because the DoI was informed by the DPF, the DPF's language-use patterns can be seen to contextualize the DoI.

The sense of reporting the identified linguistic patterns for the WTC, DPF, and their respective estimate of deceit (LoD and DoI) by the levels of the study's two independent variables Injury-event Type (Intentional, Unintentional, Ambiguous) and Point-of-view (Parent, Non-parent) was to show that individual level data from individual level dyadic interactions can be quantified and studied for the purpose of contributing to intentional as well as intentional maltreatment injury (IMI) prevention through better identification of intentional injuries. The findings from each of the four analyses' data outputs (WTC, DPF, LoD, DoI) supported Kuhn's conceptualization of Symbolic Interactionism on the possibility and need to attempt to

operationalize and empirically measure complex social phenomena (Meltzer et al., 1975), in that the data that get used to address specific socially meaningful questions (e.g., how can child and youth intentional injuries be prevented?), and are based on observed language-use behaviour. Further, the study's findings indicated that expressions of the injury-event experiential phenomena can work to outline word-based patterns that are more likely to be associated with a person's awareness of intent, and so can indicate language-use patterns that are more likely to be associated with intentional injury-events as opposed to injury-events that are not intentional.

In the context of intentional injury intervention and prevention, the approach can also add value and utility by supporting frontline helping professionals' practice during the complex process of determining if an injury under evaluation or during the reporting process is intentional or not. In this context, making such distinctions at the time of presentation represents a critical intervention window for the provision of support services. It therefore, arguably, also represents a critical opportunity to prevent re-injury of an intentional nature. Importantly, related benefits to early identification of intentional injury include the prevention of a decline in social-emotional competence and academic achievement that can be outcomes of intentional injury sequelae like compromised and ineffective social interactions and psychopathologies.

This thesis has thus made tangible the value and the hypothesized practical utility of making use of linguistic patterns to support the intervention and prevention efforts of helping professionals on behalf of intentionally injured children and youths. For example, the findings from the WTC's mean rank comparison and LoD differential proportion analyses, as well as the DPF tests of independence and DoI differential proportion analyses informed the development of a sample (not for use) intentional injury identification rubric that was based on the study's language data patterns (see Figure 6). The language-use patterns were labeled in the rubric as

evolving criteria for the mind and context domains, and were included alongside existing standard injury assessment practice criteria for the body domain. The rubric was presented as a tangible sample deliverable that demonstrated the functionality of the proposed method which highlighted the value and utility of analyzing injury-event descriptions in their entirety and for their grammatical and semantic features that are associated with coactive events so that the text-data can eventually be used to complement current in-use standard injury evaluation criteria. The use of such a rubric is not only in demand by helping professionals (e.g., Caffey, 1946/2011; Kempe et al., 1962/1985; Heger et al. 2002; Crozier & Barth, 2005; Flaherty et al., 2008; Jenny, 2009; Gilbert et al., 2009a; Christian, 2015), but can also be developed based on the sample population from which the language-use data are gathered.

In summary, the first overall finding involved Analysis 1's (WTC) between-group mean rank differences, and these differences indicated that intentional, as opposed to unintentional and ambiguous injury-event descriptions, included greater linguistic detail that rendered intentional injury-event descriptions unique. The same was the case for Non-parent as compared to Parent for Point-of-view. The second overall finding involved Analysis 2's differential between-group proportion that queried for the potential inclusion of deceit by Injury-event Type and Point-of-view based on language-use features that were reported by Newman et al. (2003) and DePaulo et al. (2003) for the WTC, and by Asp and de Villiers (2010) for the DPF. In this instance, the differential between-group proportion analysis findings for the WTC and the DPF showed that the linguistic features and language-use patterns were most similar between intentional injury-event descriptions and the descriptions that were provided by a non-parent adult household member, as opposed to those injury-event descriptions that were provided by a parent.

The two overall findings that were outlined above were considered as the overall language-use structures for the levels of Injury-event Type and Point-of-view in the study's sample. These two overall language-use structures were discussed with a view to demonstrate the functional rationale for using the WTC and the DPF linguistic analysis techniques, and for arranging the findings within the body, mind, and context domains. The functional rationale can be summarized as: The WTC, DPF, and the body, mind, and context domains were used to inform the development of a sample (not for use) deliverable for use in the practice of helping professionals who learn about or attend to injured children and youths, where the sample (not for use) deliverable was an intentional injury query rubric (see Figure 6).

Limitations

NHIS Injury Text-data

Data collection. NHIS interviewers (field representatives) are asked to enter responses into the CAPI system "verbatim" (CDC, 2010, p. C35). However, it should be noted that interviewers, as part of the interactive nature of the interviewing process and data collection method, typed what they perceived as an answer to the NHIS injury question "How did [your/person x's] injury/poisoning on [date] happen? Please describe fully the circumstances or events leading to the injury/poisoning, and any objects, substances, or other people involved", and did so in a way where the answer could be made to fit into the 300-character delimited text-field programmed into the CAPI interface interview data collection tool. Given the data entry logistical challenges, it is likely that some text modifications and omissions occur at data entry by the multiple NHIS interviewers from across the USA. However, despite potential text modifications or omissions made at the time of data entry, it is also unlikely that the injury-event descriptions would be entirely rephrased in a way that they no longer resembled the provided

description. Additionally, the entries are more likely to represent the variability in data entry styles that NHIS interviewers consider to constitute an adequate answer to the NHIS question "How did the injury happen?" including changing proper names (e.g., Sally, Sam) to pronouns (e.g., she, he) to retain NHIS participants anonymous.

The data that are entered into the CAPI system are, therefore, considered to retain fidelity to the injury-event description on the whole since NHIS interviewers are, as noted earlier, asked to record the interviewee's responses "verbatim" (CDC, 2010) –the information that the interviewee verbalized in response to the NHIS injury question (CDC, 2010, p. A15). The meaning of the term 'verbatim' in the NHIS documentation, however, is not consistent with how the term is used in linguistics since the interviewers were not required to use recording devices and were required to fit answers into a 300-character field. Therefore, the data cannot be characterized as verbatim and this should be recognized as a limitation. That noted, key findings of the study relate to information structuring (e.g., the departure point of the description) which would likely not be altered during simultaneous note taking.

It should also be noted that the recording of reported data by a NHIS field representative is a standard process, similar to the type of reporting and recording process context in which professionals in different disciplines collect and transcribe data during a medical or a case consultation. When helping professionals attend to a child or youth's injury they produce injury-event description in the form of case notes (e.g., pediatricians), or notate the injury-event description for investigation and subsequent substantiation (e.g., educators, Police, Child Welfare Services). Notably, these types of transcriptions are referred to in current practice by professionals who seek to inform their decision-making processes with case detail, for example, when making a diagnosis, arriving at a determination of intent, or assigning a suspected

intentional maltreatment[107] injury case a 'substantiated' designation (Christian, 2015; Jackson & Jackson, 2011; PHAC, 2010). Also, the transcriptions are also used by researchers whose work is referenced by government for the purpose of drawing legislation and policy (PHAC, 2010).

Implications and Future Directions

Relevance and Utility

The contribution made by medicine in understanding the biological/body domain of injuries has been instrumental in ensuring the efficient diagnosis and specific treatment of child and youth injuries, but has been restricted to an approach that relies primarily on the physical markers of injury. Physicians contend with varied injury identification and reporting challenges specific to intentional injuries where the net result can be missing-out on identifying intentional injuries that include IMIs. This lack of intentional injury identification can, in turn, lead to an underreporting of IMIs and to missed opportunities to facilitate the provision of services to those children and youth who need them (WHO, 2018). The present study identified some easily recognizable intentional injury features that can be useful to informing the development of method-specific intentional-injury identification efforts. These base language data are a first step toward formalizing the development of the sample injury identification rubric that was presented in this thesis and is envisioned here as a potential means to complement the partial account provided by physical injury markers.

Support for methods that include the analysis of semantic patterns (the way people pattern meaning when they use language) especially those that may index psychological and social processes can be found in the work of other researchers who recognize the limitations of a mostly physiological approach to identifying IMIs. Such researchers include medical

[107] Intentional maltreatment injuries (IMIs) include physical abuse, sexual abuse, emotional/psychological abuse, and neglect; IMIs can co-occur (e.g., sexual abuse can co-occur with physical abuse and neglect, while sexual abuse, physical abuse, and neglect include psychological abuse) (PHAC, 2010).

professionals (e.g., Dubowitz et al., 2011; Heger et al., 2002) and international multidisciplinary research teams that focus on IMI prevention (e.g., Gilbert et al., 2009a). These researchers are adding their voices to the growing interest in and demand for methods that can tap into the psychological, social, and contextual understanding of IMI processes and can work to better inform the effective design (Gilbert et al., 2009a), piloting, and implementation of IMI prevention efforts. The kind of behavioural description undertaken in this study is especially relevant for such efforts since it is focused at the individual level, which is the level from within which IMI phenomena emerges. The individual level analysis allows for better congruence between the understanding of the agent-based and coactive nature of the problem's phenomena, and the solution designed to prevent the problem (MacMillan et al., 2009), such as understanding the language behaviours that are associated with individuals' accounts of injury-event descriptions. Such a degree of congruence is a basic requirement in prevention science that, when accounted for, is more likely to yield comprehensive and sustainable prevention programs (Bond & Carmola Hauf, 2004).

Additionally, the findings reported here may be relevant and of practical utility to intentional and IMI identification efforts made in public sectors other than Public Health such as schools (WHO, 2018). For example, school personnel in Canada represent the largest single referral source to Child Welfare Services (Health Canada, 2001; PHAC, 2010) and this is also the case in the USA (Gilbert et al., 2009a). Importantly, school personnel are uniquely positioned (e.g., noting deviations in their students' usual behaviour and academic performance; Haight, Kayama, Kincaid, Evans, & Kim, 2013), to assist in identifying intentional injuries (Cates, Markell, & Bettenhausen, 1995; WHO, 2018) as well as to respond to and support maltreated

students (Gilbert, et al., 2009a) in ways that are responsive to the students' social-emotional development and related health and academic achievement (Zins & Elias, 2006).

Concerning the teachers' role in the abuse identification process, teachers can be conceptualized as having the function of an early alert for clinicians and IMI evaluation specialists who have the professional skill to help substantiate information gathered through early alerts. Teachers already report suspicions of IMIs. However, the type of IMI information that teachers collect and the manner in which they collect and report such information often renders their ecologically valid observations null for investigative purposes. This means that teachers' efforts to help their students be referred somewhere for formal support and protection can be stifled and disregarded (Hussey et al., 2005) as a useless effort. The contribution to the subsequent development of methods that do not rely on medical specialization or training to apply may be especially useful for helping professionals who do not work in a medical field and who are not trained in reporting medical concerns.

An important justification for such an assertion regarding teachers' ability to provide early alerts for clinical follow-up is that if the emergence of visible features of injury (Hussey et al., 2005) is what is required to activate support for students, such a wait for injuries to look more severe, can mean that a child or youth's optimal functioning can also deteriorate further. In the meantime, their abilities or capacities can, unnecessarily, continue to be undermined over a prolonged period of time, and lead to problems across biopsychosocial domains not only in the short-term, but also across their lifetime as outlined in the introduction and literature review. In such instances, for example, children/youths may be affected in their capacity to interpret and interact effectively in social contexts, like their home, school, and community (Cicchetti & Toth, 1995; Hertzman & Boyce, 2010; Overton, 2006), to do well academically (Crozier & Barth,

2005; Ewing-Cobbs et al., 2006; Gilbert et al., 2009b; Shonk & Cicchetti, 2001), to be healthy (Cicchetti & Toth, 1995; Cicchetti, Toth, & Maughan, 2000; De Bellis, 2002; De Bellis et al., 2002; Norman et al., 2012) which includes being free of psychopathy (MacMillan et al., 2001; Teicher, 2000; Thombs et al., 2007), and may be less likely to remain alive until their natural death (Longergan et al., 2003; Mann, 2002; Maniglio, 2011; WHO, 2014a, 2014b).

The need for early alerts is supported by data from the CDC (2017b) that showed that children and youths aged 6-17-years old who suffered serious emotional or behavioural difficulties as a result of illness or injury (according to parental reports between 2014 and 2016) in the USA were nearly four times more likely to miss more than 10 school days as compared to children and youths in the same age-range without serious emotional or behavioural difficulties. The prevalence rate of serious emotional or behavioural difficulties for this age group and time period was 5.8%. Canadian data on the documented functioning concerns for children and youths also supports educators and health research scientists' concern with the need to support the development of early alert methods, not only in health institutions but also in education institutions, given the devastating impact that intentional injuries can have on children and youths' academic achievement and social-emotional development and health (Gilbert et al., 2009a; Lansford et al., 2002; Shonk & Cicchetti, 2001) (see Table 1).

Finally, this study was designed with the goal of ascertaining if and how intentional and unintentional injury-events were described differently based on linguistic features and language-use patterns. The purpose of analyzing such language-use differences by injury-event type and point-of-view was to identify linguistic variables specific to intentional injuries, with an overarching aim of informing the eventual development of a validated supplementary injury intent query rubric for use by professionals alongside their existing practice in disciplines that

have a maltreatment prevention and intervention mandate. This aim is in line with the WHO's (2010; 2016; 2018) strategies on the effective intervention and prevention of intentional injuries that include "victim identification, care and support" (WHO, 2010, p. 113; WHO, 2016, p. 80) of which identification is the primary objective of the work presented here and care and support the forward looking goal to contribute to the prevention of unnecessary short- and long-term loss of potential in children and youths lives. It is anticipated that, once validated, the intentional injury identification method proposed in this thesis may work to complement frontline helping professionals' current practice by increasing the sensitivity and specificity of the complex intentional injury determination process, and, as a result, contribute to their efforts toward the prevention of intentional maltreatment injuries (IMIs) through the provision of services that are required to support children and youths' optimal development, social-emotional competence, and academic achievement.

Table 1

Documented Functioning Concerns for Substantiated Intentional Maltreatment Injury Cases Referred to Child Welfare Services in Canada in 2008

Documented Functioning Concern	Number of Investigations for Substantiated Cases	Rate per 1,000	% of Total[b]	Rank[c]
Academic difficulties	19,820	3.29	23	1
Depression; Anxiety; Withdrawal	16,310	2.71	19	2
Aggression	13,237	2.20	15	3
Attachment issues	11,797	1.96	14	4
Intellectual/developmental	9,805	1.63	11	5
Attention Deficit Disorder/Hyperactivity	9,101	1.51	11	6
Failure to meet developmental milestones	7,508	1.25	9	7
Self-harming behaviour	5,095	0.85	6	8
Running away from home, multiple incidents[a]	3,588	0.60	4	9
Suicidal thoughts	3,511	0.58	4	10
Other functioning concern	3,484	0.58	4	11
Drug/solvent abuse	3,474	0.58	4	12
Inappropriate sexual behaviours	3,453	0.57	4	13
Alcohol abuse	2,704	0.45	3	14
Youth criminal justice act involvement	1,789	0.31	2	15
At least one documented functioning concern	39,460	6.55	46	
No functioning concerns	45,980	7.64	54	
Total substantiated investigations re: a functioning concern	85,440	14.19	100	
Total number of substantiated cases in 2008	97,478	16.9		

Notes. [a]Running away from home for at least one overnight period; [b]In-utero teratogen exposure (such as to alcohol) and its effects on functioning (5%), as well as functioning challenges due to congenital disabilities (2%) and positive toxicology at birth (1%) are not included; [c]Related to note b, ranked here are fifteen out of eighteen documented functioning concerns; Substantiated cases represent 41% of the total number of reported cases to Child Welfare Services in Canada in 2008; The total number of substantiated cases that were investigated for a functioning concern constitutes 88% of the total number of substantiated cases reported in 2008; The total number of substantiated cases with at least one documented functioning concern represents 40.5% of the total number of substantiated cases reported in 2008 (Public Health Agency of Canada, 2010).

Table 2

National Health Interview Survey's 2006-2010 Injury and Poisoning Episode Questions, Variable Names, Labels, and Answer Options

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Question 1. How did [{person's} [injury/poisoning] on [Month, Day (starting with most recent if multiple)]/this [injury/poisoning]] happen?
Please describe fully the circumstances or events leading to the [injury/poisoning], and any objects, substances, or other people involved.
Variable 1. IPHOW, Description of injury/poisoning episode
Answer 1. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up[a] Question 2. What other parts of the body were hurt?
Variable 2. IJBODYOS, Other parts of the body hurt
Answer 2. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up Question 3. How else was {person's} [first entry--body part] hurt?
Variable 3. IJTYP1OS, Other way first body part was hurt
Answer 3. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up Question 4. How else was {person's} [second entry--body part] hurt?
Variable 4. IJTYP2OS, Other way second body part was hurt
Answer 4. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up Question 5. How else was {person's} [third entry--body part] hurt?
Variable 5. IJTYP3OS, Other way third body part was hurt
Answer 5. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up Question 6. How else was {person's} [fourth entry--body part] hurt?
Variable 6. IJTYP4OS, Other way fourth body part was hurt
Answer 6. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

(continued)

Table 2, continued.

National Health Interview Survey's 2006-2010 Injury and Poisoning Episode Questions, Variable Names, Labels, and Answer Options

Follow-up Question 7. Where else did {person} get medical advice, treatment, or follow-up care for this [injury/poisoning]?*
Variable 7. IPOTHOS, Other place received medical care
Answer 7. Options
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up Question 8. How did {person's} poisoning occur?
Variable 8. PPOISOS, Other cause of poisoning episode
Answer 8. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Follow-up Question 9. What other activity {were/was} {person} involved in at the time of the [injury/poisoning]?*
Variable 9. IPWHATOT, Other activity at the time of the injury/poisoning episode
Answer 9. Options:
Verbatim (text) <type-in Verbatim response>
7 Refused
9 Don't know

Notes. (1) Sources: Centres for Disease Control and Prevention (CDC) (2011b; 2011c) documents: *2010 National Health Interview Survey, episode verbatim: Identification fields public use,* document version date May 27, 2011; and *2010 NHIS Public Use Variable Summary, episode verbatim: Filename – Section: injverbt – IDN,* document version date April 25, 2011, respectively; (2) *Included starting case year 2004; (3) The injury-event description's text-data used for the study's linguistic analyses included the text-data for question 1 (Q1); (4) The text-data from Q1 were, for example, "he struck the wall and scratched his hands until they bled", the text-data entry "self-inflicted" was included as an answer to one of the follow-up questions, so while the text-data for the study's analyses only included text-data from Q1, the data in the follow-up question were used to code the case as an intentional injury (intentional self-inflicted injury); [a]For the most part, follow-up questions were blank in the data set, and of the time they did include some text, the text included one to approximately from one to five words, and tended to be closer to two words.

Table 3

National Health Interview Survey's Notation Rules on Participants' Confidentiality

List of Types of Edits –for Field Representatives[a]
1. Person names (first, middle, and/or surnames or initials): Replace with <He> or <She>
2. Names of commercial operations: Replace with a general category (e.g., the name of a restaurant that serves fast food would be replaced with <fast food restaurant>)
3. All place names including cities, counties, states, and street addresses: Remove
4. The detailed description of an occupation: Replace with a more general category using the North American Industrial Classification System (NAICS) as a guide
5. Brand names: Replace with a generic term for the product (e.g., the brand name of a car would be replaced with <motor vehicle>)
6. Text that indicates unusual personal behavior or events: Modify to make it less remarkable
7. Any group or organization that is known to have a register of its members: Replace with a generic term

Note. [a]Field Representatives are the NHIS trained staff that conduct the NHIS interview and type-in the answers to the interview questions into the CAPI enabled laptop computer. Source: Centre for Disease Control and Prevention (2010, p. 52).

Table 4

Intentional Injury Cases Sourced with the National Health Interview Survey's Variables

Variable Name	Variable Label	Variable Code and Code Label
ECAUS	Cause of injury/poisoning based on E-codes[a]	1 Transportation
		2 Fire/burn/scald related
		3 Fall
		4 Poisoning
		5 Overexertion/strenuous movements
		6 Struck by object or person[b]
		7 Animal or insect bite
		8 Cut/pierce
		9 Machinery
		10 Other
		97 Refused
		98 Not ascertained
		99 Don't know
IFALLWHY	Cause of fall	1 Slipping or tripping
		2 Jumping or diving
		3 Bumping into an object or another person
		4 Being shoved or pushed by another person[c]
		5 Losing balance or having dizziness
		6 Other
		7 Refused
		8 Not ascertained
		9 Don't know

Notes. Source: Centres for Disease Control and Prevention (CDC) (2011b). *2010 National Health Interview Survey, episode verbatim: Identification fields public use,* document version date May 27, 2011. [a]This NHIS variable describes the cause of the injury/poisoning using categories based on the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) external cause codes (E-codes). [b, c] The NHIS variable code levels from which the additional intentional injury cases were taken that would have otherwise been missed in variable level analyses; These variable code levels were treated as a variable in this project at the variable level (e.g., variable level = ECAUS; variable code level = 4 being shoved or pushed by another person). Starting in 2009, the NHIS stopped including E-codes for all cases for confidentiality reasons (CDC, 2011a) –this means that E-code data was not complete in the data set that was compiled for this project that includes case years 2006-2010.

Table 5

The Word-type Count Analysis 1 Study Variables from the Linguistic Inquiry and Word Count (LIWC, 2007) Dictionary

Range Criteria and LIWC Variables	Skewness	Kurtosis
Met Standard Range Criteria: -1 to 1		
Standard Linguistic Dimension (*n* = 6)		
Prepositions	0.479	0.551
Past	0.609	-0.823
Personal pronouns	0.625	0.345
She/He	0.770	0.577
Articles	0.770	-0.466
Conjunctions	0.804	0.883
Psychological Processes Dimension (*n* = 3)		
Inclusive	0.577	0.023
Cognitive mechanisms	0.645	0.214
Space	0.734	0.817
Met Practice Range Criteria: -2.5 to 7.5[b]		
Standard Linguistic Dimension (*n* = 6)		
Function words	-1.111	1.279
Auxiliary verbs	1.199	0.516
Pronouns	1.302	3.933
Verbs	1.622	5.749
Word count	1.736	3.767
Six letters or more	1.874	6.599
Psychological Processes Dimension (*n* = 8)		
Body	1.006	0.872
Social	1.114	2.465
Relativity	1.225	3.441
Biological	1.373	2.886
Negative emotions	1.558	2.257
Affect	1.569	3.053
Perceptual processes	2.060	3.707
Anger	2.348	5.843

Notes. [a]Selected based on the study's skewness and kurtosis parameters (see sub-section Analysis Plan, WTC under Analyses section); [b]Practice range criteria informed by Blanca, Arnau, López-Montiel, and Bendayan (2013).

Table 6a

Word-type Count Analysis 1 Mean Ranks for Injury-event Type's Levels –Part One

	Level Comparisons by Injury-event Type's Levels											
	1. Intentional, 2. Unintentional, & 3. Ambiguous						1. Intentional & 2. Unintentional (post-hoc)					
LIWC[a] (2007) Variables by Dimension	*N*	*MR*[b]	*df*	*H*[c]	η^2	*p*	*N*	*MR*	*df*	*H*	η^2	*p*
Standard Linguistic (*n* = 12)												
Word Count	204		2	29.639	0.146	0.001*^	182		1	11.536	0.064	0.001*^
1. Intentional	79	125.2					79	106.6				
2. Unintentional	103	96.1					103	79.9				
3. Ambiguous	22	51					-	-				
Function words	204		2	28.429	0.140	0.001*^	182		1	6.466	0.036	0.011*^
1. Intentional	79	121.6					79	102.8				
2. Unintentional	103	99.8					103	82.8				
3. Ambiguous	22	46.5					-	-				
Articles	204		2	11.789	0.058	0.003*^	182		1	0.696	0.004	0.404
1. Intentional	79	110.9					79	95.1				
2. Unintentional	103	104.1					103	88.8				
3. Ambiguous	22	65.1					-	-				
Six Letters or More	204		2	23.053	0.114	0.001*^	182		1	3.762	0.021	0.052
1. Intentional	79	86.5					79	82.9				
2. Unintentional	103	103.6					103	98.1				
3. Ambiguous	22	154.7					-	-				
Personal Pronouns	204		2	3.445	0.017	0.179	182		1	1.535	0.008	0.215
1. Intentional	79	110.5					79	96.9				
2. Unintentional	103	99.8					103	87.3				
3. Ambiguous	22	86.1					-	-				
Pronouns	204		2	4.768	0.023	0.092	182		1	1.493	0.008	0.222
1. Intentional	79	111.1					79	96.9				
2. Unintentional	103	100.5					103	87.4				
3. Ambiguous	22	81.3					-	-				
She/He	204		2	3.119	0.015	0.210	182		1	1.887	0.010	0.170
1. Intentional	79	110.7					79	97.5				
2. Unintentional	103	99.1					103	86.9				
3. Ambiguous	22	89.1					-	-				(continued)

Table 6a, continued

LIWC[a] (2007) Variables by Dimension	1. Intentional, 2. Unintentional, & 3. Ambiguous						1. Intentional & 2. Unintentional (post-hoc)					
	N	*MR*[b]	*df*	*H*[c]	η^2	*p*	*N*	*MR*	*df*	*H*	η^2	*p*
Prepositions	204		2	3.689	0.018	0.158	182		1	1.508	0.008	0.219
1. Intentional	79	110.7					79	96.9				
2. Unintentional	103	99.9					103	87.3				
3. Ambiguous	22	84.9					-	-				
Conjunctions	204		2	2.673	0.013	0.263	182		1	0.074	0.001	0.785
1. Intentional	79	106.3					79	92.7				
2. Unintentional	103	103.5					103	90.6				
3. Ambiguous	22	84.1					-	-				
Verbs	204		2	15.035	0.074	0.001*^	182		1	3.969	0.022	0.046*
1. Intentional	79	116.7					79	100.1				
2. Unintentional	103	99.6					103	84.9				
3. Ambiguous	22	64.9					-	-				
Auxiliary Verbs	204		2	14.145	0.070	0.001*^	182		1	7.576	0.042	0.006*^
1. Intentional	79	118.2					79	102.6				
2. Unintentional	103	96.1					103	82.9				
3. Ambiguous	22	76.1					-	-				
Past	204		2	15.437	0.076	0.001*^	182		1	5.992	0.033	0.014*^
1. Intentional	79	118.4					79	102.1				
2. Unintentional	103	97.7					103	83.4				
3. Ambiguous	22	67.9					-	-				
Psychological Processes (*n* = 11)												
Biological	204		2	0.428	0.002	0.807	182		1	0.008	0.001	0.929
1. Intentional	79	101.2					79	91.1				
2. Unintentional	103	101.9					103	91.8				
3. Ambiguous	22	110.1					-	-				
Body	204		2	5.117	0.025	0.077	182		1	4.581	0.025	0.032*^
1. Intentional	79	111.4					79	100.8				
2. Unintentional	103	93.5					103	84.4				
3. Ambiguous	22	112.6					-	-				
Perceptual Processes	204		2	6.435	0.032	0.040*	182		1	6.058	0.033	0.014*^
1. Intentional	79	112.5					79	99.9				
2. Unintentional	103	95.8					103	85				
3. Ambiguous	22	98.1					-	-				(continued)

Table 6a, continued

LIWC[a] (2007) Variables by Dimension	1. Intentional, 2. Unintentional, & 3. Ambiguous						1. Intentional & 2. Unintentional (post-hoc)					
	N	*MR*[b]	*df*	*H*[c]	η^2	*p*	*N*	*MR*	*df*	*H*	η^2	*p*
Cognitive Mechanisms	204		2	10.586	0.052	0.005*^	182		1	0.709	0.004	0.400
1. Intentional	79	111.2					79	95.2				
2. Unintentional	103	103.7					103	88.7				
3. Ambiguous	22	65.8					-	-				
Affect	204		2	8.678	0.043	0.013*^	182		1	3.531	0.020	0.060
1. Intentional	79	107.9					79	99.7				
2. Unintentional	103	92.5					103	85.2				
3. Ambiguous	22	129.7					-	-				
Negative Emotions	204		2	6.839	0.034	0.033*^	182		1	1.737	0.010	0.188
1. Intentional	79	111.8					79	97.1				
2. Unintentional	103	100.6					103	87.2				
3. Ambiguous	22	77.7					-	-				
Anger	204		2	21.207	0.104	0.001*^	182		1	13.070	0.072	0.001*^
1. Intentional	79	121.1					79	105.2				
2. Unintentional	103	93.9					103	81				
3. Ambiguous	22	76.3					-	-				
Social Processes	204		2	16.990	0.084	0.001*^	182		1	10.249	0.057	0.001*^
1. Intentional	79	122.1					79	105.7				
2. Unintentional	103	94.1					103	80.6				
3. Ambiguous	22	71.7					-	-				
Inclusive	204		2	8.118	0.040	0.017*	182		1	0.491	0.003	0.483
1. Intentional	79	109.9					79	94.6				
2. Unintentional	103	103.6					103	89.1				
3. Ambiguous	22	70.6					-	-				
Space	204		2	3.387	0.017	0.184	182		1	3.365	0.019	0.067
1. Intentional	79	111.9					79	99.6				
2. Unintentional	103	96.1					103	85.3				
3. Ambiguous	22	98.6					-	-				
Relativity	204		2	2.278	0.011	0.320	182		1	0.235	0.001	0.628
1. Intentional	79	107					79	93.7				
2. Unintentional	103	102.6					103	89.8				
3. Ambiguous	22	85.6					-	-				

Notes. [a]LIWC stands for Linguistic Inquiry and Word Count; *$p < .05$, Kruskal-Wallis *H* Test[b] for mean-rank comparisons; ^Homogeneity of variance assumption was not met; thus, interpret the *p* value with this in mind; [c]*MR* stands for mean rank; See Table 6b for comparison between (a) Levels 2. Unintentional and 3. Ambiguous and (b) Levels 1. Intentional and 3. Ambiguous; See Table 6c for Point-of-view.

Table 6b

Word-type Count Analysis 1 Mean Ranks for Injury-event Type's Levels –Part Two

	Level Comparisons by Injury-event Type's Levels											
	2. Unintentional & 3. Ambiguous (post-hoc)						1. Intentional & 3. Ambiguous (post-hoc)					
LIWC[a] (2007) Variables by Dimension	*N*	*MR*[b]	*df*	*H*[c]	η^2	*p*	*N*	*MR*	*df*	*H*	η^2	*p*
Standard Linguistic (*n* = 12)												
Word Count	125		1	12.262	0.099	0.001*^	101		1	23.934	0.239	0.001*^
1. Intentional	-	-					79	58.5				
2. Unintentional	103	68.2					-	-				
3. Ambiguous	22	38.5					22	24				
Function words	125		1	16.142	0.130	0.001*^	101		1	25.649	0.256	0.001*^
1. Intentional	-	-					79	58.8				
2. Unintentional	103	69					-	-				
3. Ambiguous	22	34.9					22	23.1				
Articles	125		1	9.588	0.077	0.002*^	101		1	11.282	0.113	0.001*^
1. Intentional	-	-					79	55.8				
2. Unintentional	103	67.3					-	-				
3. Ambiguous	22	42.9					22	33.7				
Six Letters or More	125		1	13.543	0.109	0.001*^	101		1	22.865	0.229	0.001*^
1. Intentional	-	-					79	43.7				
2. Unintentional	103	57.5					-	-				
3. Ambiguous	22	88.8					22	77.4				
Personal Pronouns	125		1	1.140	0.009	0.286	101		1	2.762	0.028	0.097
1. Intentional	-	-					79	53.3				
2. Unintentional	103	64.6					-	-				
3. Ambiguous	22	55.7					22	41.9				
Pronouns	125		1	2.033	0.016	0.154	101		1	4.402	0.044	0.036*
1. Intentional	-	-					79	54.2				
2. Unintentional	103	65.1					-	-				
3. Ambiguous	22	53.2					22	39.5				
She/He	125		1	0.697	0.006	0.404	101		1	2.028	0.020	0.154
1. Intentional	-	-					79	53.2				
2. Unintentional	103	64.2					-	-				
3. Ambiguous	22	57.3					22	43.3				

(continued)

Table 6b, continued

	2. Unintentional & 3. Ambiguous (post-hoc)						1. Intentional & 3. Ambiguous (post-hoc)					
LIWC[a] (2007) Variables by Dimension	*N*	*MR*[b]	*df*	*H*[c]	η^2	*p*	*N*	*MR*	*df*	*H*	η^2	*p*
Prepositions	125		1	1.280	0.010	0.258	101		1	3.134	0.031	0.077
1. Intentional	-	-					79	53.7				
2. Unintentional	103	64.7					-	-				
3. Ambiguous	22	55.1					22	41.3				
Conjunctions	125		1	1.853	0.001	0.173	101		1	3.050	0.031	0.081
1. Intentional	-	-					79	53.6				
2. Unintentional	103	64.9					-	-				
3. Ambiguous	22	53.9					22	41.6				
Verbs	125		1	7.290	0.059	0.077	101		1	14.289	0.143	0.001*^
1. Intentional	-	-					79	56.6				
2. Unintentional	103	66.7					-	-				
3. Ambiguous	22	45.5					22	30.9				
Auxiliary Verbs	125		1	3.140	0.025	0.076	101		1	10.201	0.102	0.001*^
1. Intentional	-	-					79	55.5				
2. Unintentional	103	65.2					-	-				
3. Ambiguous	22	52.9					22	34.7				
Past	125		1	5.809	0.047	0.016*^	101		1	13.070	0.131	0.001*^
1. Intentional	-	-					79	56.3				
2. Unintentional	103	66.3					-	-				
3. Ambiguous	22	47.6					22	31.8				
Psychological Processes (*n* = 11)												
Biological	125		1	0.402	0.003	0.526	101		1	0.357	0.004	0.550
1. Intentional	-	-					79	50.1				
2. Unintentional	103	62.1					-	-				
3. Ambiguous	22	67.4					22	54.3				
Body	125		1	1.733	0.014	0.188	101		1	0.064	0.001	0.800
1. Intentional	-	-					79	50.6				
2. Unintentional	103	61.1					-	-				
3. Ambiguous	22	71.7					22	52.4				
Perceptual Processes	125		1	0.067	0.000	0.796	101		1	1.450	0.015	0.229
1. Intentional	-	-					79	52.4				
2. Unintentional	103	62.7					-	-				
3. Ambiguous	22	64.2					22	45.5				

(continued)

Table 6b, continued

LIWC[a] (2007) Variables by Dimension	2. Unintentional & 3. Ambiguous (post-hoc)						1. Intentional & 3. Ambiguous (post-hoc)					
	N	*MR*[b]	*df*	*H*[c]	η^2	*p*	*N*	*MR*	*df*	*H*	η^2	*p*
Cognitive Mechanisms	125		1	7.710	0.062	0.005*^	101		1	10.696	0.107	0.001*^
1. Intentional	-	-					79	55.9				
2. Unintentional	103	67					-	-				
3. Ambiguous	22	44.1					22	33.2				
Affect	125		1	6.665	0.054	0.010*^	101		1	3.164	0.032	0.075
1. Intentional	-	-					79	48.3				
2. Unintentional	103	59.3					-	-				
3. Ambiguous	22	80.4					22	60.7				
Negative Emotions	125		1	3.146	0.025	0.076	101		1	6.782	0.068	0.009*^
1. Intentional	-	-					79	54.8				
2. Unintentional	103	65.4					-	-				
3. Ambiguous	22	51.8					22	37.4				
Anger	125		1	3.279	0.026	0.070	101		1	12.700	0.127	0.001*^
1. Intentional	-	-					79	55.9				
2. Unintentional	103	64.9					-	-				
3. Ambiguous	22	54.3					22	33.5				
Social Processes	125		1	2.810	0.023	0.094	101		1	12.214	0.122	0.001*^
1. Intentional	-	-					79	56.4				
2. Unintentional	103	65.5					-	-				
3. Ambiguous	22	51.4					22	31.8				
Inclusive	125		1	5.774	0.047	0.016*^	101		1	8.495	0.085	0.004*^
1. Intentional	-	-					79	55.4				
2. Unintentional	103	66.5					-	-				
3. Ambiguous	22	46.8					22	35.3				
Space	125		1	0.013	0.001	0.910	101		1	0.738	0.007	0.390
1. Intentional	-	-					79	52.3				
2. Unintentional	103	62.8					-	-				
3. Ambiguous	22	63.8					22	46.3				
Relativity	125		1	1.433	0.012	0.231	101		1	2.400	0.024	0.121
1. Intentional	-	-					79	53.4				
2. Unintentional	103	64.8					-	-				
3. Ambiguous	22	54.7					22	42.5				

Notes. [a]LIWC stands for Linguistic Inquiry and Word Count; *$p < .05$, Kruskal-Wallis *H* Test[b] for mean-rank comparisons; ^Homogeneity of variance assumption was not met; thus, interpret the *p* value with this in mind; [c]*MR* stands for mean rank; See Table 6.a for comparisons between (a) Levels 1. Intentional, 2. Unintentional, and 3. Ambiguous; and (b) Levels 1. Intentional and 2. Unintentional; See Table 6.c for Point-of-view's Levels 1. Parent reporter and 2. Non-parent reporter.

Table 6c

Word-type Count Analysis 1 Mean Ranks for Point-of-view's Levels

	Level Comparison by Point-of-view's Levels					
	1. Parent & 2. Non-parent					
LIWC[a] (2007) Variables by Dimension	*N*	*MR*[b]	*df*	*H*[c]	η^2	*p*
Standard Linguistic (*n* = 12)						
Word Count	204		1	3.082	0.015	0.079
1. Parent	177	105.3				
2. Non-parent	27	83.9				
Function words	204		1	0.015	0.000	0.902
1. Parent	177	102.7				
2. Non-parent	27	101.2				
Articles	204		1	1.923	0.009	0.166
1. Parent	177	104.6				
2. Non-parent	27	88.7				
Six Letters or More	204		1	3.815	0.019	0.051
1. Parent	177	99.4				
2. Non-parent	27	123.2				
Personal Pronouns	204		1	0.204	0.001	0.652
1. Parent	177	103.2				
2. Non-parent	27	97.8				
Pronouns	204		1	0.152	0.001	0.697
1. Parent	177	103.1				
2. Non-parent	27	98.4				
She/He	204		1	1.422	0.077	0.902
1. Parent	177	104.4				
2. Non-parent	27	90.1				
Prepositions	204		1	0.024	0.000	0.877
1. Parent	177	102.3				
2. Non-parent	27	104.1				
Conjunctions	204		1	0.657	0.003	0.418
1. Parent	177	103.8				
2. Non-parent	27	94.2				
Verbs	204		1	5.796	0.029	0.016*^
1. Parent	177	98.8				
2. Non-parent	27	126.9				
Auxiliary Verbs	204		1	1.645	0.008	0.200
1. Parent	177	100.7				
2. Non-parent	27	114.6				
Past	204		1	5.205	0.026	0.023*^
1. Parent	177	99				
2. Non-parent	27	125.4				
Psychological Processes (*n* = 11)						
Biological	204		1	0.003	0.000	0.958
1. Parent	177	102.6				
2. Non-parent	27	101.9				
Body	204		1	0.076	0.000	0.783
1. Parent	177	102.9				
2. Non-parent	27	99.7				

(continued)

Table 6c, continued

LIWC[a] (2007) Variables by Dimension	*N*	1. Parent & 2. Non-parent *MR*[b]	*df*	*H*[c]	η^2	*p*
Perceptual Processes	204		1	2.056	0.010	0.152
1. Parent	177	104.3				
2. Non-parent	27	90.9				
Cognitive Mechanisms	204		1	0.588	0.003	0.443
1. Parent	177	103.7				
2. Non-parent	27	94.5				
Affect	204		1	0.073	0.000	0.787
1. Parent	177	102.9				
2. Non-parent	27	99.7				
Negative Emotions	204		1	0.230	0.001	0.631
1. Parent	177	103.2				
2. Non-parent	27	97.8				
Anger	204		1	0.091	0.000	0.763
1. Parent	177	102.1				
2. Non-parent	27	105.1				
Social Processes	204		1	0.714	0.004	0.398
1. Parent	177	103.9				
2. Non-parent	27	93.6				
Inclusive	204		1	0.531	0.003	0.466
1. Parent	177	103.7				
2. Non-parent	27	95				
Space	204		1	0.236	0.001	0.627
1. Parent	177	103.3				
2. Non-parent	27	97.4				
Relativity	204		1	2.587	0.013	0.108
1. Parent	177	105.1				
2. Non-parent	27	85.5				

Notes. [a]LIWC stands for Linguistic Inquiry and Word Count; *$p < .05$, Kruskal-Wallis *H* Test[b] for mean-rank comparisons; ^Homogeneity of variance assumption was not met; thus, interpret the *p* value with this in mind; [c]*MR* stands for mean rank; See Table 6a and Table 6b for Injury-event Type.

Table 7

A Differential Proportion Query into the Inclusion of Covert Mentions of Intent as Likelihood of Deceit (LoD) for Analysis 1, Word-type Count Data

	Qualified[a] proxy variables for the estimate of LoD						
	1	2	3	4	5	Feature Present = 1	
Level Comparisons	fewer Personal[b] Pronouns	fewer Exclusive Words	more Negative Emotion Words	more[c] Motion Words	more[d] Cognitive Mechanisms Words	Total and Weighted Proportion out of 100%	Differential Between-levels Ratio
Injury-event Type (N = 66)							
Intentional (n = 22)	0 (9.1%)	0 (9.1%)	1 (68.2%)	0 (59.1%)	0 (81.8%)	1 (20%)	
vs.							20
Unintentional (n = 22)	1 (4.6%)	1 (0%)	0 (45.5%)	0 (59.1%)	0 (81.8%)	2 (40%)	
Intentional	0 (9.1%)	0 (9.1%)	1 (68.2%)	1 (59.1%)	1 (81.8%)	3 (60%)	
vs.							20
Ambiguous (n = 22)[e]	1 (0%)	1 (4.6%)	0 (22.7%)	0 (31.8%)	0 (31.8%)	2 (40%)	
Unintentional	0 (4.6%)	1 (0%)	1 (45.5%)	1 (59.1%)	1 (81.8%)	4 (80%)	
vs.							60
Ambiguous	1 (0%)	0 (4.6%)	0 (22.7%)	0 (31.8%)	0 (31.8%)	1 (20%)	
Point-of-view (N = 54)							
Parent (n = 27)	1 (3.7%)	0 (3.7%)	1 (55.6%)	1 (55.6%)	1 (81.5%)	4 (80%)	
vs.							60
Non-parent (n = 27)[e]	0 (7.4%)	1 (0%)	0 (40.7%)	0 (48.2%)	0 (59.3%)	1 (20%)	

Notes. Feature Present = 1, Feature Absent = 0; The proportion for each proxy variable per level of an independent variable (Injury-event Type, Point-of-view) is the sum of the proportion per case total for a proxy variable, for example, the proportion of Personal Pronouns for Intentional was 9.1% out of the total number of Personal Pronouns for Injury-event Type; [a]The unqualified selected linguistic features 1 through 5 were informed by Newman et al. (2003); however, the qualification and operationalization for linguistic feature 5 was informed by DePaulo et al. (2003). [b]Newman et al. (2003) used the variable First-person Pronouns rather than the variable Personal Pronouns, as it is here, that includes first-person pronouns; [c]Newman et al. (2003) mention unpublished findings re: more motion words relative to fewer cognitive mechanisms words (thus decreased "cognitive complexity") (negative relationship), however, because motion is a covariate of cognitive mechanisms in said study, here[d] cognitive mechanisms, including its qualification as 'more cognitive mechanisms' (thus increased "cognitive complexity") was drawn from DePaulo et al. (2003) because in this second study the variable cognitive mechanisms is reported as a non-covariate variable; [e]The number of cases for the levels of the independent variables Injury-event Type and Point-of-view were modified to obtain an equal number of cases across levels for this analysis. The selection was made with the exact number random selection option in SPSS to match the number of cases in the level of the variable with the fewest number of cases which were, n = 22 for level Ambiguous from the independent variable Injury-event Type, and n = 27 for level Non-parent from the independent variable Point-of-view; A WTC case subsample was taken in order to run the estimate based on equal n's.

Table 8

Mean Ranks for the Estimate[a] of Deceit as Likelihood of Deceit with the Word-type Count Data, Analysis 1

			Kruskal-Wallis *H* Test			
Independent Variable and Levels	*N*	*MR*[a]	*df*	*H*	η^2	*p*
Injury-event Type						
Personal Pronouns	66		2	2.451	0.038	.294^
1. Intentional	22	38.1				
2. Unintentional	22	33.1				
3. Ambiguous	22	29.3				
Exclusive	66		2	2.062	0.032	.357^
1. Intentional	22	35				
2. Unintentional	22	32				
3. Ambiguous	22	33.5				
Negative Emotions	66		2	7.156	0.110	.028*
1. Intentional	22	40.8				
2. Unintentional	22	32.9				
3. Ambiguous	22	26.7				
Motion	66		2	1.698	0.026	.428^
1. Intentional	22	33.7				
2. Unintentional	22	36.9				
3. Ambiguous	22	29.9				
Cognitive Mechanisms	66		2	10.850	0.167	.004*
1. Intentional	22	40.5				
2. Unintentional	22	37.1				
3. Ambiguous	22	22.9				
Point-of-view						
Personal Pronouns	54		1	0.126	-	.722
1. Parent	27	28.2				
2. Non-parent	27	26.8				
Exclusive	54		1	1.000	0.019	.317^
1. Parent	27	28				
2. Non-parent	27	27				
Negative Emotions	54		1	0.585	0.011	.444
1. Parent	27	29				
2. Non-parent	27	25.9				
Motion	54		1	0.237	-	.627
1. Parent	27	28.5				
2. Non-parent	27	26.5				
Cognitive Mechanisms	54		1	1.575	0.029	.210
1. Parent	27	30.2				
2. Non-parent	27	24.9				

Notes. [a]The estimate is based on the unqualified five proxy variables for the estimate of deceit as LoD; *$p < .05$, Kruskal-Wallis *H* Test for mean-rank comparisons; [a]MR stands for mean rank; ^Homogeneity of variance assumption was not met; thus, the interpretation of the *p* value needs to be made with this point in mind; A WTC case subsample was taken in order to run the estimate based on equal *n*'s.

Table 9

The Discourse Pattern Function (DPF) Analysis 2 Study Variables by Descriptive Grammar Categories

Descriptive Grammar [a] Categories, and Study's[b] Dependent Variables	Independent Variable: Injury-event Type *n* = 9	Independent Variable: Point-of-view *n* = 3
I. Ideational Category		
Process[c]	Selected	-
Participants		
Injured child/youth[d]	Selected	-
Injured child/youth, role 2 –second instance[d]	Selected	-
Another child/youth[d]	Selected	Selected
Not Mentioned[d]	Selected	-
Aspect	-	Selected
Tense	Selected	-
II. Interactional Category	-	-
III. Textual Organization Category		
Ellipsis/substitution 1, first instance	Selected	-
Focus 1, first instance	-	Selected
Prominence 1, first instance	Selected	-
IV. Other discourse features Category		
Injured Child/Youth Role Shift 1,[d] first instance	Selected	-

Notes. [a]From Asp and de Villiers (2010); [b]Selected based on (a) a significant statistic at an alpha level of 0.01, with the Fisher's Exact Test calculated with the Monte Carlo option in SPSS, and (b) a minimum $n \geq 5$ cell count in the dependent variable by independent variable cross-tabulation; [c]Process from Stillar (1998, see Appendix A); [d]Added by author; See Appendix E for the list with the full set of variables (prior to the running the Fisher's Exact Test); See tables 10 (two-level analysis) and 11 (three-levels analysis) for the data output.

Table 10

Discourse Pattern Function Analysis 2 for Injury-event Type –The 1 through 2 Levels Analysis: Intentional and Unintentional

		Proportions and Fisher's Exact Test[b] (FET)							
Variable Category, Variable, and Variable Levels[a]	*N*	*n* (%) within sample	*n* (%) within variable	*n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Ideational Category									
Process	565	96 (17)	96 (95)		26	42.66	0.194	0.007*	.005-.009
No			20 (21)						
Intentional				6 (30)					
Unintentional				14 (70)					
Transfer-locational			23 (24)						
Intentional				8 (35)					
Unintentional				15 (65)					
Transfer-personal			20 (21)						
Intentional				7 (35)					
Unintentional				13 (65)					
Possession			16 (17)						
Intentional				10 (63)					
Unintentional				6 (37)					
Location			17 (18)						
Intentional				7 (41)					
Unintentional				10 (59)					
Participants									
Injured Child/Youth	565	203 (36)	203 (94)		74	103.46	0.294	0.001*	0 - .002
No			51 (25)						
Intentional				29 (57)					
Unintentional				22 (43)					
Agent, Ellipted			39 (19)						
Intentional				14 (36)					
Unintentional				25 (64)					
Patient, Mentioned			65 (32)						
Intentional				46 (71)					
Unintentional				19 (29)					

(continued)

Table 10, continued.

Variable Category, Variable, and Variable Levels	*N*	*n* (%) within sample	*n* (%) within variable	*n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Patient, Pragmatically Determined			21 (10)						
Intentional				10 (48)					
Unintentional				11 (52)					
Injured Child/Youth Body Part, as Patient, Mentioned			27 (13)						
Intentional				15 (56)					
Unintentional				12 (44)					
Another Child/Youth	565	106 (19)	106 (100)		26	49.10	0.195	0.001*	0 - .001
Agent mentioned			65 (61)						
Intentional				45 (69)					
Unintentional				20 (31)					
Agent, Ellipted			41 (39)						
Intentional				24 (59)					
Unintentional				17 (41)					
Not Mentioned	565	25 (4)	25 (86)						
Location, Not Mentioned			25 (100)						
Intentional				5 (20)					
Unintentional				20 (80)					
Tense	565	88 (16)	88 (95)		24	38.69	0.185	0.011^	.008 - .013
Non-past			59 (67)						
Intentional				30 (51)					
Unintentional				29 (49)					
Passive, Agent Not Mentioned[1]			11 (13)						
Intentional				6 (55)					
Unintentional				5 (45)					
Not Mentioned, because a Point of Comparison[1]			18 (20)						
Intentional				11 (61)					
Unintentional				7 (39)					
Interactional Category	565	-	-	-	-	-	-	-	-
Textual Organization Category									
Ellipsis/Substitution 1	565	51 (9)	51 (93)		40	71.85	0.262	0.001*	0 - .001
Substitution			20 (39)						
Intentional				10 (50)					
Unintentional				10 (50)					
Determiner, Possibly Omitted			31 (61)						
Intentional				13 (42)					
Unintentional				18 (58)					

(continued)

Table 10, continued.

Variable Category, Variable, and Variable Levels	*N*	*n* (%) within sample	*n* (%) within variable	*n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Prominence 1	565	151 (27)	151 (93)		58	77.13	0.281	0.011^	.008 - .013
Item			21 (14)						
Intentional				7 (33)					
Unintentional				14 (67)					
Place			62 (41)						
Intentional				40 (65)					
Unintentional				22 (35)					
Not Mentioned because a Point of Comparison			19 (13)						
Intentional				11 (58)					
Unintentional				8 (42)					
Manner			24 (16)						
Intentional				8 (33)					
Unintentional				16 (67)					
Manner, as Instrument			11 (7)						
Intentional				5 (45)					
Unintentional				6 (55)					
Mentioned as Point of Comparison			14 (9)						
Intentional				7 (50)					
Unintentional				7 (50)					
Other Category									
Injured Child/Youth Role Shift 1	565	203 (36)	203 (95)		62	100.39	0.3	0.001*	0 - 0
Patient, Mentioned			95 (47)						
Intentional				63 (66)					
Unintentional				32 (34)					
Location (body), Mentioned			24 (12)						
Intentional				15 (63)					
Unintentional				9 (37)					
Agent, Ellipted			37 (18)						
Intentional				12 (32)					
Unintentional				25 (68)					
Not Mentioned			47 (23)						
Intentional				25 (53)					
Unintentional				22 (47)					

Notes. [a]See Table 11, 1 through 3 Levels analysis (Intentional, Unintentional, and Ambiguous); [b]The Fisher's Exact Test (2-sided) with the Monte Carlo option in SPSS; *$p < .01$; ^$p > .01$ included because marginally non-significant by .001; *V* stands for the Cramer's *V*, *a* post-hoc test for contingency tables that can also be interpreted as an effect size re: the strength of association between the variables; Percent values are rounded; Prag. stands for 'pragmatically'; [1]A textual organization feature that occasioned 'no tense' that is treated in the text under the grammar category Textual Organization as variable levels of the variable Omission.

Table 11

Discourse Pattern Function Analysis 2 for Injury-event Type –The 1 through 3 Levels Analysis: Intentional, Unintentional, and Ambiguous

				Proportions and Fisher's Exact Test[b] (FET)					
Variable Category, Variable, and Variable Levels[a]	*N*	*n* (%) within sample	*n* (%) within variable	*n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Ideational Category									
Process	565	439 (78)	439 (100)		26	42.66	0.194	0.007*	.005 - .009
Affective			189 (43)						
Intentional				95 (50)					
Unintentional				79 (42)					
Ambiguous				15 (8)					
Motion			141 (32)						
Intentional				51 (36)					
Unintentional				82 (58)					
Ambiguous				8 (6)					
Designative			109 (25)						
Intentional				62 (57)					
Unintentional				32 (29)					
Ambiguous				15 (14)					
Participants									
Injured Child/Youth	565	241 (43)	241 (100)		74	103.46	0.294	0.001*	0 - .002
Agent, Mentioned			100 (41)						
Intentional				49 (49)					
Unintentional				45 (45)					
Ambiguous				6 (6)					
Agent, Pragmatically Determined			141 (59)						
Intentional				36 (25)					
Unintentional				83 (59)					
Ambiguous				22 (16)					
Another Child/Youth	565	432 (76)	432 (100)		26	49.11	0.195	0.001*	0 - .001
No			432 (100)						
Intentional				170 (39)					
Unintentional				218 (51)					
Ambiguous				219 (10)					

(continued)

Table 11, continued.

Variable Category, Variable, and Variable Levels	*N*	*n* (%) within sample	*n* (%) within variable	*n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Injured Child /Youth Role 2	565	467 (83)	467 (100)		68	89.03	0.293	0.009*	.006 - .011
No			411 (88)						
Intentional				207 (50)					
Unintentional				176 (43)					
Ambiguous				28 (7)					
Injured Child/Youth Body Part, as Patient, mentioned			56 (12)						
Intentional				16 (29)					
Unintentional				30 (53)					
Ambiguous				10 (18)					
Not Mentioned	565	525 (93)	525 (100)		12	24.47	0.138	0.005*	.003 - .006
No			476 (90)						
Intentional				219 (46)					
Unintentional				225 (47)					
Ambiguous				32 (7)					
Agent, Not Mentioned			49 (10)						
Intentional				27 (55)					
Unintentional				15 (31)					
Ambiguous				7 (14)					
Tense	565	449 (79)	449 (100)		24.00	38.69	0.185	0.011^	.008 - .013
Past			394 (87)						
Intentional				178 (45)					
Unintentional				190 (48)					
Ambiguous				26 (7)					
Non-finite			27 (6)						
Intentional				10 (37)					
Unintentional				10 (37)					
Ambiguous				7 (26)					
Non-clause[1]			28 (7)						
Intentional				6 (21)					
Unintentional				17 (61)					
Ambiguous				5 (18)					
Interactional Category	565	-	-	-	-	-	-	-	-

(continued)

Table 11, continued.

Variable Category, Variable, and Variable Levels	*N*	*n* (%) within sample	*n* (%) within variable	*n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Textual Organization Category									
Ellipsis/Substitution 1	565	299 (53)	299 (100)		40	71.85	0.262	0.001*	0 - .001
No			227 (76)						
Intentional				128 (56)					
Unintentional				92 (41)					
Ambiguous				7 (3)					
Prag. Det. or Possibly Omitted, Pron + Aux Phrase			72 (24)						
Intentional				18 (25)					
Unintentional				42 (58)					
Ambiguous				12 (17)					
Prominence 1	565	307 (54)	307 (100)		58	77.13	0.281	0.011^	.008 - .013
Process			69 (23)						
Intentional				26 (38)					
Unintentional				38 (55)					
Ambiguous				5 (7)					
Patient			89 (29)						
Intentional				39 (44)					
Unintentional				41 (46)					
Ambiguous				9 (10)					
Location			77 (25)						
Intentional				30 (39)					
Unintentional				42 (55)					
Ambiguous				5 (6)					
Range			72 (23)						
Intentional				42 (58)					
Unintentional				21 (29)					
Ambiguous				9 (13)					
Other Category									
Injured Child/Youth Role Shift 1	565	105 (19)	105 (100)		62	100.39	0.300	0.001*	0 - 0
Agent, Mentioned			105 (100)						
Intentional				53 (50)					
Unintentional				46 (44)					
Ambiguous				6 (6)					

Notes. [a]See Table 10, 1 through 2 Levels analysis; [b]Fisher's Exact Test (2-sided) with Monte Carlo; *$p < .01$; ^$p > .01$ marginally non-significant by .001; *V* = Cramer's *V*, a post-hoc test for contingency tables (effect size); % values are rounded; Prag. Det. or Possibly Omitted Pron + Aux Phrase, is for 'Pragmatically Determined or Possibly Omitted, Pronoun + Auxiliary Phrase'; [1]A textual organization feature that occasioned 'no tense' and is treated in the text under the grammar category Textual Organization as the variable Non-clause.

Table 12

Discourse Pattern Function Analysis 2 for Point-of-view: Parent and Non-parent

Variable Category, Variable, and Variable Levels	*N*	*n* (%) within sample	*n* (%) within variable	Fisher's Exact Test (FET) *n* (%) within variable levels	*df*	*FET*	*V*	*p*	CI_p
Ideational Category									
Participants									
Another Child/Youth[a]	565	497 (88)	497 (100)		13	25.37	0.229	0.014	.011 - .017
No			432 (87)						
Parent				378 (88)					
Non-parent				54 (12)					
Agent mentioned			65 (13)						
Parent				60 (92)					
Non-parent				5 (8)					
Aspect	565	559 (99)	559 (100)		4	15.39	0.209	0.003	.001 - .004
No			517 (92)						
Parent				461 (89)					
Non-parent				56 (11)					
Continuous			42 (8)						
Parent				37 (88)					
Non-parent				5 (12)					
Interactional Category	565	-	-	-	-	-	-	-	-
Textual Organization Category									
Focus 1[a]	565	433 (77)	433 (100)		26	39.69	0.304	0.016	.013 - .020
Process			246 (57)						
Parent				220 (89)					
Non-parent				26 (11)					
Agent			173 (40)						
Parent				157 (91)					
Non-parent				16 (9)					
Patient			14 (3)						
Parent				7 (50)					
Non-parent				7 (50)					
Other Category	565	-	-	-	-	-	-	-	-

Notes. [a]Included for discussion purposes with the lower-bound Confidence Interval as 0.001 for Another child and 0.003 for Focus 1, these are values that are marginally above the study's statistical significant parameter of $p < .01$; The Fisher's Exact Test (2-sided) was done with the Monte Carlo option in SPSS; *V* stands for the Cramer's *V* post-hoc test for contingency tables that can also be interpreted as an effect size regarding the strength of association among the variables; Percent values are rounded.

Table 13a

A Differential Proportion Query into the Inclusion of Covert Mentions of Intent as Dissimulation of Intent (DoI) for Analysis 2, Discourse Pattern Function Data, with the Injured Child/Youth's Participant Role as Agent

	Qualified proxy variables for the estimate of DoI						
	1	2	3	4	5	Feature Present = 1	
Level Comparisons	less Tense Shift	more Nominalization	more Ergative Verb	less Focus, Agent	less Prominence, Agent	Total and Weighted Proportion out of 100%	Differential Between-levels Ratio
Injury-event Type (N = 66)							
Intentional (n = 22)	0 (100%)	1 (71.4%)	0 (14.3%)	0 (25.5%)	0 (4.3%)	1 (20%)	
vs.							60
Unintentional (n = 22)	1 (50%)	0 (35.7%)	1 (57.1%)	1 (19.2%)	1 (1.4%)	4 (80%)	
Intentional	0 (100%)	0 (71.4%)	0 (14.3%)	0 (25.5%)	1 (4.3%)	1 (20%)	
vs.							60
Ambiguous (n =22)[b]	1 (0%)	1 (100%)	1 (100%)	1 (11.1%)	0 (100%)	4 (80%)	
Unintentional	0 (50%)	0 (35.7%)	0 (57.1%)	0 (19.2%)	1 (1.4%)	1 (20%)	
vs.							60
Ambiguous	1 (0%)	1 (100%)	1 (100%)	1 (11.1%)	0 (100%)	4 (80%)	
Point-of-view (N = 54)							
Parent (n = 27)	1 (50%)	0 (33.3%)	1 (55.6%)	1 (17.2%)	1 (1.6%)	4 (80%)	
vs.							60
Non-parent (n =27)[b]	0 (66.7%)	1 (53.8%)	0 (38.5%)	0 (24.6%)	0 (3.1%)	1 (20%)	

Notes. Feature Present = 2, Feature Absent = 0; The proportion for each proxy variable per level of an independent variable (Injury-event Type, Point-of-view) is the sum of the proportion per case total for a proxy variable; for example, the proportion for Focus (Agent) for Intentional was 25.5% out of the total number of Focus (Agent) for Injury-event Type. For the selected standard modern English language features, see Huddleston and Pullum (2002) for feature 1, and Asp and de Villiers (2010) for features 2-5; For the proportional differences (i.e., more, less), see sections Research Questions and Hypotheses in this document; [a]For the linguistic features Focus and Prominence with the participant role, Patient, see Table 13b; [b]The number of cases for some of the levels of the independent variables Injury-event Type and Point-of-view were modified to obtain an equal number of cases for this analysis. The case selection was made with the exact number random selection option in SPSS to match the number of cases in the level of the variable with the fewest number of cases, such as n = 22 for level Ambiguous from the variable Injury-event Type, and n = 27 for the level Non-parent from the variable Point-of-view; A DPF case subsample was taken in order to run the estimate based on equal n's.

Table 13b

A Differential Proportion Query into the Inclusion of Covert Mentions of Intent as Dissimulation of Intent (DoI) for Analysis 2, Discourse Pattern Function Data, with the Injured Child/Youth's Participant Role as Patient

	Qualified proxy variables for the estimate of DoI						
	1	2	3	4	5	Feature Present = 1	
Level Comparisons	less Tense Shift	more Nominalization	more Ergative Verb	less Focus, Patient	less Prominence, Patient	Total and Weighted Proportion out of 100%	Differential Between-levels Ratio
Injury-event Type (N = 66)							
Intentional (n = 22)	0 (100%)	1 (71.4%)	0 (14.3%)	0 (17%)	1 (6.4%)	2 (40%)	
vs.							20
Unintentional (n = 22)	1 (50%)	0 (35.7%)	1 (57.1%)	1 (1.4%)	0 (17.8%)	3 (60%)	
Intentional	0 (100%)	0 (71.4%)	0 (14.3%)	1 (17%)	1 (6.4%)	2 (40%)	
vs.							20
Ambiguous (n = 22)[b]	1 (0%)	1 (100%)	1 (100%)	0 (100%)	0 (22.2%)	3 (60%)	
Unintentional	0 (50%)	0 (35.7%)	0 (57.1%)	1 (1.4%)	1 (17.8%)	2 (40%)	
vs.							20
Ambiguous	1 (0%)	1 (100%)	1 (100%)	0 (100%)	0 (22.2%)	3 (60%)	
Point-of-view (N = 54)							
Parent (n = 27)	1 (50%)	0 (33.3%)	1 (55.6%)	1 (3.1%)	0 (14.1%)	3 (60%)	
vs.							20
Non-parent (n = 27)[b]	0 (66.7%)	1 (53.8%)	0 (38.5%)	0 (10.8%)	1 (13.8%)	2 (40%)	

Notes. Feature Present = 1, Feature Absent = 0; The proportion for each proxy variable per level of an independent variable (Injury-event Type, Point-of-view) is the sum of the proportion per case total for a proxy variable; for example, the proportion for Focus (Patient) for Intentional was 17% out of the total number of Focus (Patient) for Injury-event Type; For the selected standard modern English language features, see Huddleston and Pullum (2002) for feature 1, and Asp and de Villiers (2010) for features 2-5; For proportional differences (i.e., more, less) see sections Research Questions and Hypotheses in this document; [a]For data on the linguistic features Focus and Prominence with the participant role, Agent, see Table 13a; [b]The number of cases for some of the levels of the independent variables Injury-event Type and Point-of-view were modified to obtain an equal number of cases for this analysis. The case selection was made with the exact number random selection option in SPSS to match the number of cases in the level of the variable with the fewest number of cases, such as n = 22 for level Ambiguous from the variable Injury-event Type, and n = 27 for the level Non-parent from the variable Point-of-view; A DPF case subsample was taken in order to run the estimate based on equal n's.

Table 14

Injury-event Type According to the Experiential Domains of Body, Mind, and Context Across the Study's Grammar Categories for the DPF's Two- and Three-levels Analyses

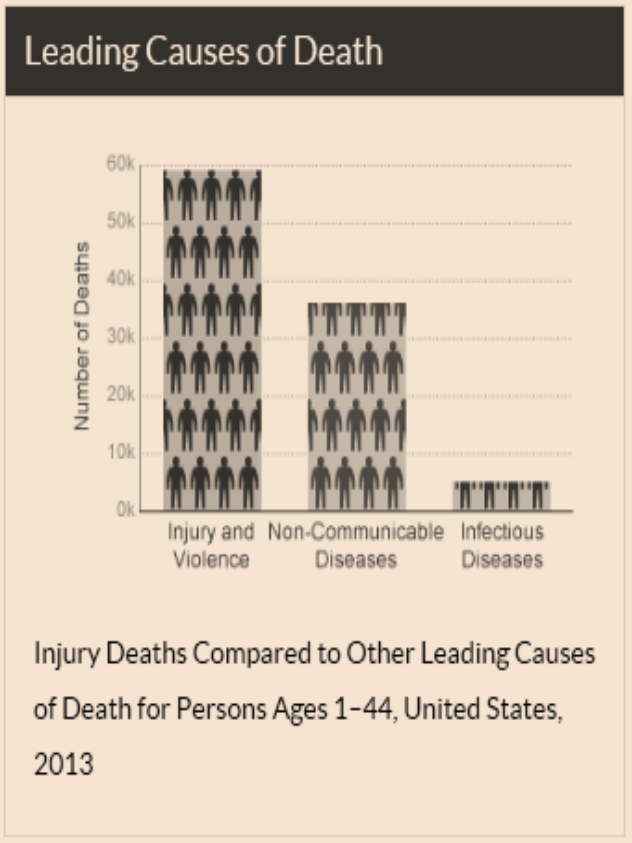
	Experiential Domains and Rank					
Grammar Category	Body	First Ranked Injury-event Type level, Body	Mind	First Ranked Injury-event Type level, Mind	Context	First Ranked Injury-event Type level, Context
			Two-levels Analysis			
(1) Ideational						
	(I) Participants		(I) Process		(I) Participants	
	(i) Injured Child/Youth		(i) Transfer-locational	UNT	(i) Injured Child/Youth	
	(a) Injured Child/Youth Body Part	INT	(ii) Transfer-personal	UNT	(a) Injured Child/Youth Body Part	INT
	(II) Process		(iii) Possession	INT	(b) Patient Mentioned	INT
	(i) Transfer-locational	UNT	(II) Tense		(c) 'No' Feature Absent = 0	INT
	(ii) Transfer-personal	UNT	(i) Non-past	INT	(d) Agent Ellipted	UNT
	(iii) Possession	INT	(ii) Passive Agent Not Mentioned	INT	(e) Patient Prag. Determined	UNT
			(iii) Not Mentioned (because) Point-of-comp.	INT	(ii) Another Child/Youth	
					(a) Agent Mentioned	INT
					(b) Agent Ellipted	INT
					(iii) Not Mentioned	
					(a) Location Not Mentioned	UNT
(2) Textual Organization						
			(I) Ellipsis/Substitution 1			
			(i) Substitution	INT = UNT		
			(ii) Determiner Prag. Determined	UNT		
			(II) Prominence 1			
			(i) Item	UNT		
			(ii) Place	INT		
			(iii) Not Mention (because) Point-of-Comp.	INT		
			(iv) Mentioned (as) Point-of-Comp.	INT = UNT		
			(v) Manner	UNT		
			(vi) Manner as Instrument	UNT		
(3) Other discourse features						
	(I) Injured Child/Youth Role Shift 1				(I) Injured Child/Youth Role Shift 1	
	(i) Location (body) Mentioned	INT			(i) Patient Mentioned	INT
					(ii) Location (body) Mentioned	INT
					(iii) Not Mentioned	INT
					(iv) Agent Ellipted	UNT

(continued)

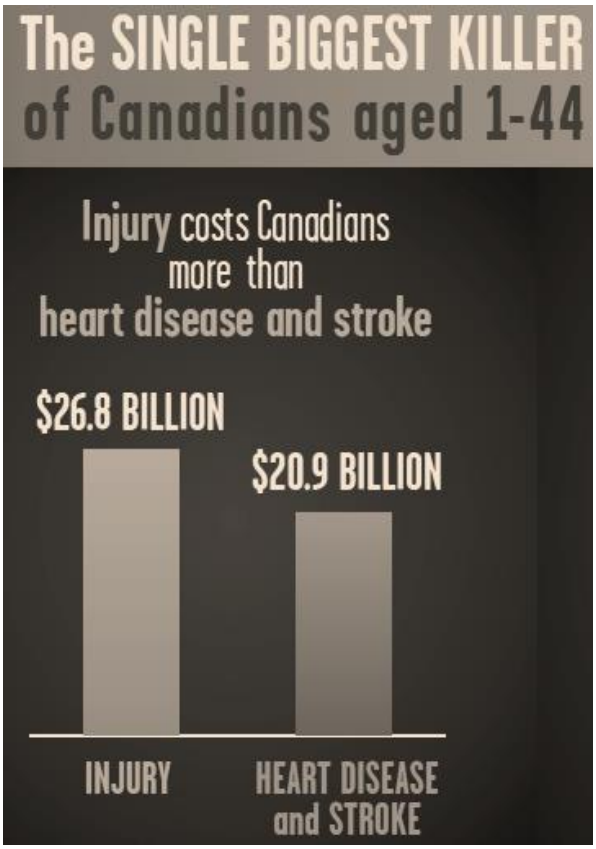
Table 14, continued

Experiential Domains and Rank					
Body	First Ranked Injury-event Type level, Body	Mind	First Ranked Injury-event Type level, Mind	Context	First Ranked Injury-event Type level, Context
Three-levels Analysis					
(1) Ideational					
(I) Participants		(I) Process		(I) Participants	
(i) Injured Child/Youth Role 2		(i) Affective	INT	(i) Injured Child/Youth	
(a) Injured Child/Youth Body Part	UNT	(ii) Designative	INT	(a) Agent Mentioned	INT
(II) Process		(iii) Motion	UNT	(b) Agent Prag. Determined	UNT
(i) Affective	INT	(II) Tense		(ii) Injured Child/Youth Role 2	
(ii) Designative	INT	(i) Past	UNT	(a) Injured Child/Youth Body Part	UNT
(iii) Motion	UNT	(ii) Not Mentioned (because) Minor Clause	UNT	(iii) Another Child/Youth	
		(iii) Non-finite	INT = UNT	(a) 'No' Feature Absent = 0	UNT
				(iv) Not Mentioned	
				(a) 'No' Feature Absent = 0	UNT
				(b) Agent Not Mentioned	INT
(2) Textual Organization					
		(I) Ellipsis/Substitution 1			
		(i) Prag. Determined or PO + AuxP	UNT		
		(ii) 'No' Feature Absent = 0	INT		
		(II) Prominence 1			
		(i) Process	UNT		
		(ii) Patient	UNT		
		(iii) Location	UNT		
		(iv) Range	INT		
(3) Other discourse features				(I) Injured Child/Youth Role Shift 1	
				(i) Agent Mentioned	INT

Note. The variables were listed with upper case numerals (e.g., I, II, III); the variable levels were listed with lower case numerals (e.g., i, ii, iii), and the levels of the variable levels were listed with letters (e.g., a, b, c); INT stands for Intentional. UNT stands for Unintentional; Comp stands for 'comparison'; Prag stands for 'pragmatically'; PO + AuxP stand for 'possibly omitted and auxiliary phrase'; The grammar categories are from Asp and de Villiers (2010): The data presented in this table was based on a Fisher's Exact Test output ($p < .01$); DPF stands for the Discourse Pattern Function analysis.



1a. USA, Case year 2013



1b. Canada, Case year 2010

Figure 1. Visual impact of population level injury data for the USA and Canada, Examples. (1.a) USA, Case year 2013: A contrast in the number of deaths by the thousand between the three leading causes of death in the USA; "Injuries and violence affect everyone, regardless of age, race, or economic status. In the first half of life, more Americans die from violence and injuries, such as motor vehicle crashes, falls, or homicides, than from any other cause, including cancer, HIV, or the flu. This makes injury the leading cause of death among persons 1-44." Retrieved from https://www.cdc.gov/injury/wisqars/overview/key_data.html; (1.b) Canada, Case year 2010: Section of an infographic that shows the magnitude of Canada's injury burden; Like the USA, Canada's leading cause of death is injuries for people aged 1- to 44-years-old, and depicts injuries as being proportionally much greater in billions spent as compared to non-communicable diseases; Retrieved from http://www.parachutecanada.org/downloads/research/Cost-of-injury-infographic.pdf

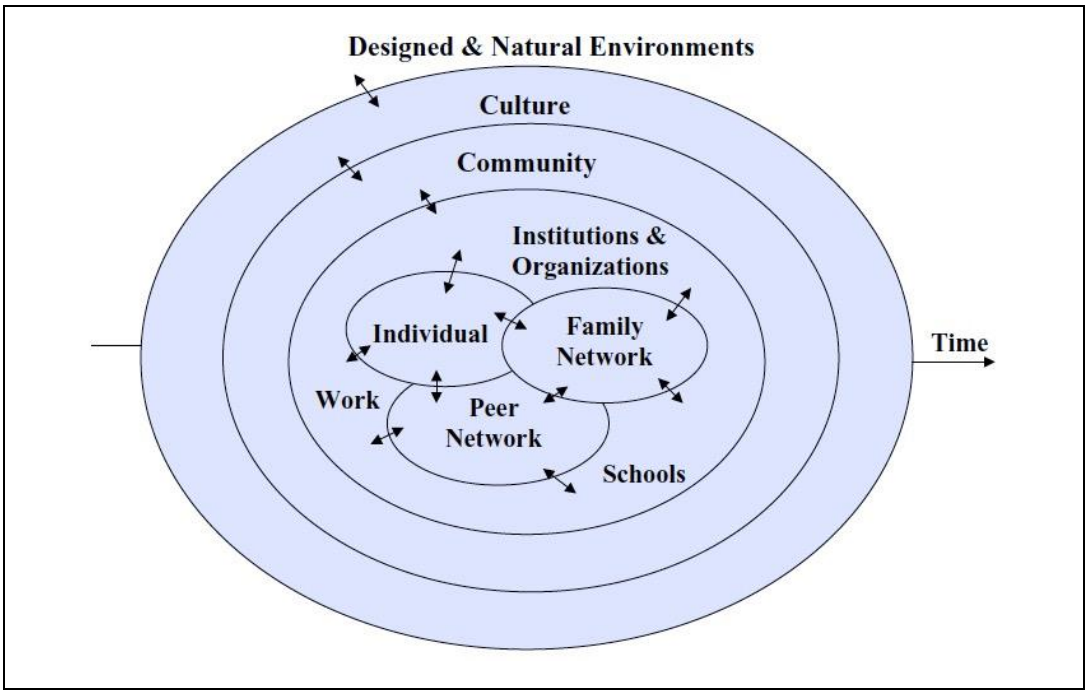


Figure 2. Schematic illustration of the nested contextual social systems that influence and are influenced by human development (Bond & Carmola Hauf, 2004) at the individual and population levels. Necessarily this schematic comprises the social context and the material context.

Figure 3. Word Type Count's at-a-glance mean rank comparison analysis for research question one's independent variable Injury-event Type, by level; *$p < .05$; Variable names are capitalized.

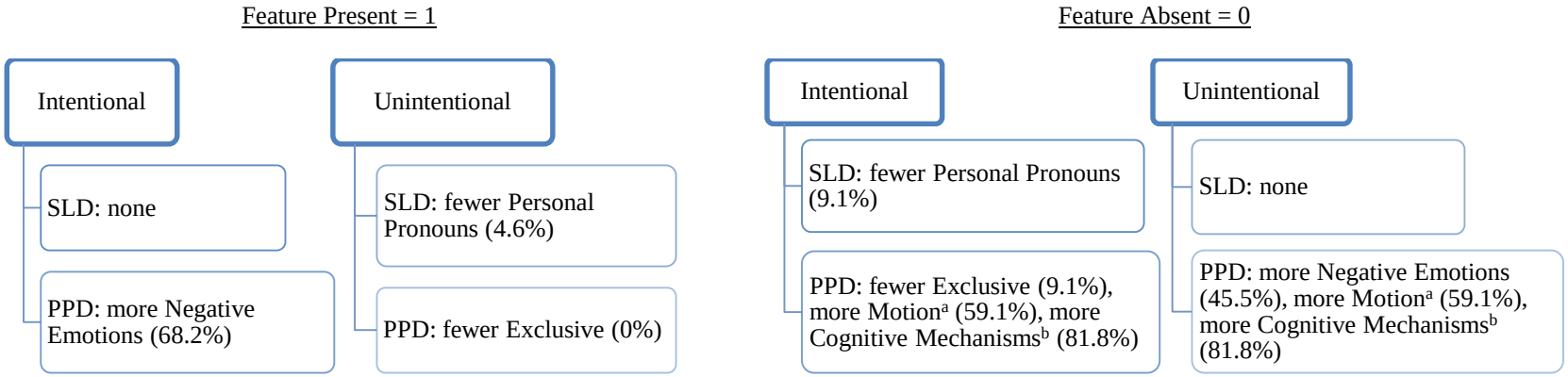


Figure 4a. Word-type Count's Likelihood of Deceit's (LoD) Differential Proportion for Intentional vs. Unintentional

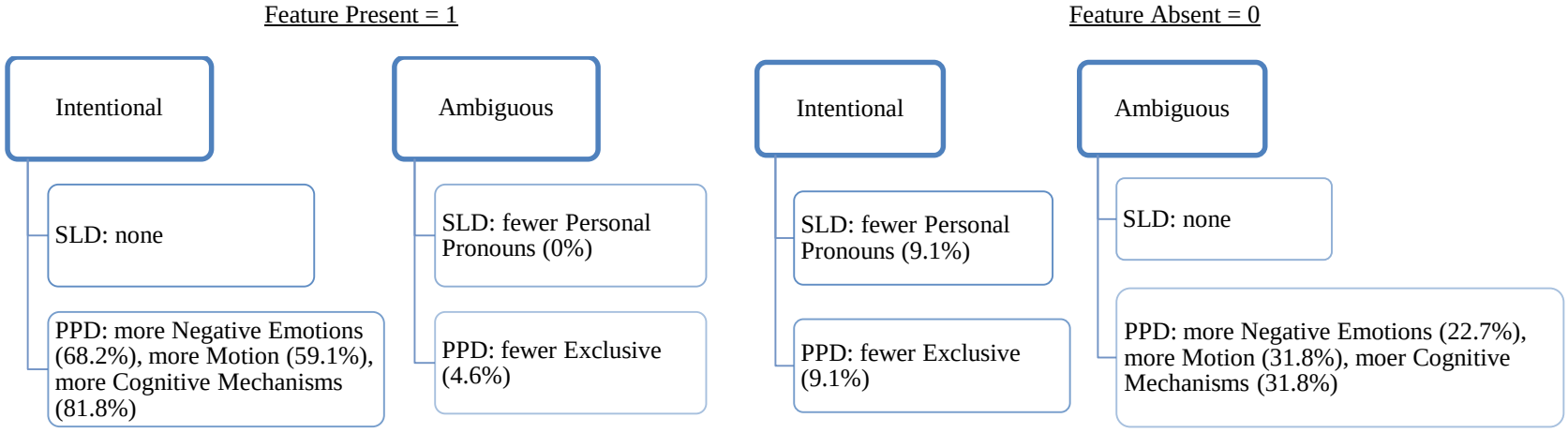


Figure 4b. Word-type Count's Likelihood of Deceit's (LoD) Differential Proportion for Intentional vs. Ambiguous

(continued)

Figure 4, continued

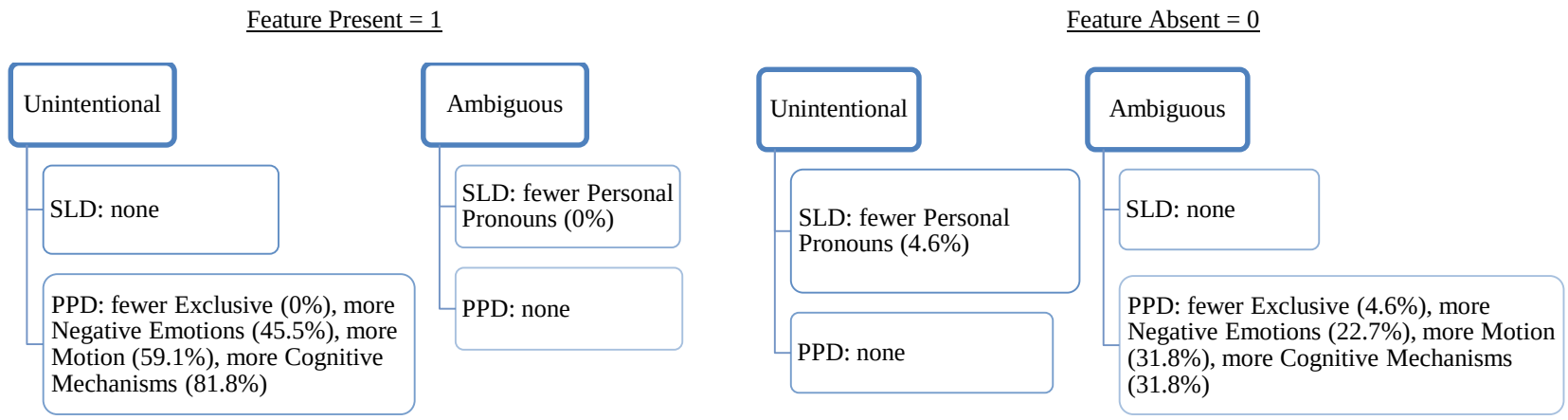


Figure 4c. Word-type Count's Likelihood of Deceit's (LoD) Differential Proportion for Unintentional vs. Ambiguous

Notes. Word Type Count's (WTC) Likelihood of Deceit's differential proportion by group comparison for the Injury-event Type by Feature Present = 1 and Feature Absent = 0; SLD and PPD stand for the LIWC's (2007) Standard Linguistic dimension and Psychological Processes dimension; [a,]more Motion and [b]more Cognitive Mechanisms appear twice here because each qualified variable was coded as Feature Absent = 0 due to the absence of a proportional difference (they had the same proportion).

Figure 4. Word-type Count's Likelihood of Deceit's (LoD) differential proportion for Injury-event Type's levels

Intentional had a higher* or the same word count as compared to:

- **Unintentional** higher for
  - Ideational Category: (a) Possessional **B** **M** (Process); (b) Patient Mentioned **C**, Child/Youth Injured Body Part **B** **C**, and No **B** **C** (Participant's Injured Child/Youth); (c) Agent Mentioned **C**, and Agent Ellipted **C** (Participant's Another Child/Youth); and (d) Non-past **M**, Passive-Agent Not Mentioned **M**
  - Interactional Category: none
  - Textual Organization Category: Place **M**, and Not Mentioned-Point of Comparison **M** (Prominence 1)
  - Other discourse features Category: Patient Mentioned **C**, Location Mentioned **C**, and Not Mentioned **C** (Injured Child/Youth Role Shift 1)
- **Unintentional** same for
  - Textual Organization: Substitution **M** (Ellipsis/Substitution 1), Mentioned-Point of Comparison **M** (Prominence 1), and Not Mentioned-Point of Comparison **M**

Unintentional had a higher* or the same word count as compared to:

- **Intentional** higher for
  - Ideational Category: (a) Transfer-locational **B** **M**, Transfer-personal **B** **M**, and Location **M** (Process); (b) Agent Ellipted **C**, and Patient Pragmatically Determined **C** (Participant's Injured Child/Youth); (c) Location Not Mentioned **C** (Participant's Not Mentioned)
  - Interactional Category: none
  - Textual Organization Category: (a) Determiner-Possibly Omitted **M** (Ellipsis/Substitution 1); (b) Item **M**, Manner **M**, and Instrument as Manner **M** (Prominence 1)
  - Other discourse features Category: Agent-Ellipted **C** (Injured Child/Youth Role Shift 1)
- **Intentional** same for
  - Textual Organization: Substitution **M** (Ellipsis/Substitution 1), and Mentioned-Point of Comparison **M** (Prominence 1)

Figure 5a. Discourse Pattern Function's Two-levels Analysis

(continued)

Figure 5, continued

Intentional had a higher* word count as compared to:

- **Unintentional** for
  - Ideational Category: (a) Affective **B M** and Designative **B M** (Process); (b) Agent Mentioned **C** (Participant's Injured Child/Youth) (c) Agent Not Mentioned **C** (Participant[s] Not Mentioned), (d) No **C** (Participant's Injured Child/Youth Role 2)
  - Interactional Category: none
  - Textual Organization Category: No **M** (Ellipsis/Substitution 1); Range **M** (Prominence 1)
  - Other discourse features: Agent Mentioned **C** (Injured Child/Youth Role Shift 1)
- **Ambiguous**
  - Same as Unintentional

Unintentional had a higher* word count as compared to:

- **Intentional** for
  - Ideational Category: (a) Motion **B M** (Process); (b) Agent Pragmatically Determined **C**, and Injured Child/Youth Body Part **C** (Participant's Injured Child/Youth); (b) Injured Child/Youth Body Part **B C** (Participant's Injured Child/Youth Role 2); (c) No (Another Child/Youth) **C**; (d) No **C** (Participants Not Mentioned); and (e) Past **M** and Not Mentioned Non-clause (Tense)
  - Interactional Category: none
  - Textual Organization: (a) Pragmatically Determined /Possibly Omitted Promoun and Auxiliary Phrase **M** (Ellipsis/Substitution 1); (b) Process **M**, Patient **M**, and Location **M** (Prominence 1)
- **Ambiguous**
  - Same as Intentional

Ambiguous had a similar[a] or the same word count as compared to:

- **Intentional** similar for
  - Ideational Category: (a) Injured Child/Youth Body Part **B C** (Participant's Injured Child Youth Role 2); (b) Non-finite **M**, and Non-clause Not Mentioned **M** (Tense); (c) Injured Child/Youth Body Part **C**, and Agent Pragmatically Determined **C** (Participant's Injured Child/Youth); (d) No (Participant's Injured Child/Youth) **C**
  - Interactional Category: none
  - Textual Organization: Pragmatically Determined /Possibly Omitted Promoun and Auxiliary Phrase **M** (Ellipsis/Substitution 1)
- **Unintentional** same for
  - Ideational Category: Non-finite **M** (Tense)

Figure 5b. Discourse Pattern Function's Three-levels Analysis

Notes. DPF stands for Discourse Pattern Function; For the two-levels analysis, the Intentional vs. Unintentional proportion was equal in two instances specific to the Textual Organization Category: Substitution Mentioned (Ellipsis/Substitution 1) and Mentioned-Point of Comparison (Prominence 1); For the three-levels analysis the Intentional vs. Unintentional proportion was equal for Tense's Non-finite; Process is not included in Ambiguous; [a]Range 1% to 11%; *$p < .01$; Variable names are capitalized; **B** = body domain; **M** = mind domain, **C** = context domain.

Figure 5. Discourse Pattern Function's Two- and Three-levels Analyses

I-III	Criteria	Sample (not for use) Evaluation Rubric Injury-event Features Evident (1)	Somewhat Evident (2)	Ambiguous[a] (3)	Not Evident (4)
I. Standard criteria for the bio-physiological domain of injuries[b] (body)	Nature of Injury	Injury is evident & has distinct features	Injury is evident, but does not include some of the expected distinct features	Injury is evident, but has ambiguous features	Injury is not evident, so it cannot be interpreted based on physical features
	Mechanism of Injury	Mechanism matches nature of injury	Mechanism does not clearly match nature of injury	Mechanism is not specific, and is instead unclear on how it matches nature of injury	Mechanism cannot be matched to nature of injury because the injury is not evident
II. Evolving criteria for the psychological domain of injuries (mind)	Participants	Referred to as persons & their roles, Ag[c] & Pt[d] (ICY)[e] are explicitly stated, even for self-inflicted	Ag role is not referred to explicitly and the Pt (ICY) role is that of a body part rather than a person	Ag & Pt roles are not referred to explicitly, & it is not possible to identify the participant roles	Ag & Pt roles are not mentioned; only process is mentioned
	Process	Is specific to the Pt's (ICY) injury, & includes expressions of anger	Is not specific to the Pt's (ICY) injury, but is about the location[f] & includes expressions of negative affect	Is not specific to the Pt's (ICY) injury, but to transporting the ICY to get help & includes expressions of affect	Is about contributing processes around the ICY's injury-event, & does not include expressions of affect
III. Evolving criteria for the contextual[h] domain of injuries (context)	Textual Organization, Patient	Pt (ICY) is mentioned explicitly as a person at the start of the injury-event description's 1st clause	Pt (ICY) is mentioned explicitly as a body part at the start of the injury-event description's 1st clause	Pt (ICY) is not mentioned explicitly as a person or a body part at the start of the injury-event description's 1st clause	Pt (ICY) is not mentioned explicitly or alluded to at the start of the injury-event description's 1st clause
	Textual Organization, Prominent Feature	Place: Where the injury-event took place was mentioned last, so Place was prominent	Manner as Instrument (MasI): MasI was mentioned last, so manner as instrument was prominent	Item: An item related to the injury outcome was mentioned last, so Item was prominent	What was mentioned last was not Place, Manner as Instrument, or Item
Column Total		x out of 6	x out of 12	x out of 18	x out of 24
Total Sum Across Columns		Total Sum = x			

Notes. [a]Ambiguous relational roles for mind and context domains; [b]Espitia- Hardeman and Paulozzi (2005);[16] [c]Ag = Agent (person that inflicted the injury); [d]Pt = Patient (person that was injured); [e]ICY = Injured child/youth; [f]location of the injury-event (e.g., at the foot of the stairs); [g]overall Affect that includes a range of positive and negative emotion words; [h]Social and material; This is only a sample evaluation rubric that (a) illustrates what this thesis's proposed method could potentially offer, and (b) is based on the data from this thesis; for these reasons, this sample evaluation rubric is not for use in any circumstances in its present form because it is not ready to be used –many more steps need to be taken to develop this sample rubric before it is useable.

Figure 6. Sample (not for use) intentional injury query rubric, in development.

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Appendix A. Discourse Process Types

Process Types and Participant Roles in Discourse Analysis
Sample of Ideational Resources

Process Type	Central Participants[a, b]	Example Sentence (with the standard position for the Central Participants)			
Action Processes					
Affective	Agent Patient	'Sam *Agent*	cut *Verb*	the girl.' *Patient*	
Motion	Agent Location	'Sam *Agent*	went *Verb*	to the park.' *Location*	
Transfer, locational	Agent Item Location	'Sam *Agent*	put *Verb*	the knife *Item*	on his wrist/on the table.' *Location*
Transfer, personal	Agent Item Recipient	'Sam *Agent*	gave *Verb*	a bottle of pills *Item*	to Wilbur.' *Recipient*
Resultative	Agent Resultant	'Sam *Agent*	built *Verb*	a trap.' *Resultant*	
Designative	Agent Range	'Sam *Agent*	played *Verb*	hockey.' *Range*	
Mental Processes					
Perceptive	Processor Phenomenon	'Sam *Processor*	saw *Verb*	the man.' *Phenomenon*	
Reactive	Processor Phenomenon	'Sam *Processor*	liked *Verb*	the girl.' *Phenomenon*	
Cognitive	Processor Phenomenon	'Sam *Processor*	understood *Verb*	the incident.' *Phenomenon*	
Verbal	Processor Phenomenon	'Sam *Processor*	said, *Verb*	"I like gym class."' *Phenomenon*	
Creative	Processor Phenomenon	'Sam *Processor*	wrote *Verb*	a short poem.' *Phenomenon*	
Relational Processes					
Identification	Identified Identifier	'Sam *Identified*	is *Verb*	the boyfriend.' *Identifier*	
Attribution	Carrier Attribute	'Sam *Carrier*	is/seems *Verb*	smart.' *Attribute*	
Classification	Classified Classifier	'Sam *Classified*	is *Verb*	a boyfriend.' *Classifier*	
Possession	Possessor Possessed	'Sam *Possessor*	has/owns *Verb*	a knife.' *Possessed*	
Location	Located Locator	'Sam *Located*	is/lives *Verb*	in the garage.' *Locator*	
Existential	Existent	'There	are *Verb*	three boys.' *Existent*	
Ambient	Ambient	'It	is *Verb*	raining.' *Ambient*	

Source: Stillar (1998), with some modifications to the number of verbs included per process type and to the example sentences;
[a]Asp and de Villiers (2010) refer to Central Participants as Argument Roles; [b]In this study, Central Participants are Participants.

Appendix B. Linguistic Inquiry and Word Count (2007) Variables

Category	Abbreviation	Examples	Words in Category	Validity (Judges)	Alpha: Binary/Raw	Output
I. Standard Linguistic						
Word count	wc					*freq*
Words per sentence	wps					*freq*
Dictionary words	dic					%
Words >6 letters	sixltr					%
Total function words	funct		464		.97/.40	%
Total pronouns	pronoun	I, them, itself	116		.91/.38	%
Personal pronouns	ppron	I, them, her	70		.88/.20	%
1st pers singular	i	I, me, mine	12	0.52	.62/.44	%
1st pers plural	we	we, us, our	12		.66/.47	%
2nd person	you	you, your, thou	20		.73/.34	%
3rd pers singular	shehe	she, her, him	17		.75/.52	%
3rd pers plural	they	they, their, they'd	10		.50/ .36	%
Impersonal pronouns	ipron	it, it's, those	46		.78/.46	%
Articles	article	a, an, the	3		.14/.14	%
Common verbs	verb	walk, went, see	383		.97/.42	%
Auxiliary verbs	auxverb	am, will, have	144		.91/.23	%
Past tense	past	went, ran, had	145	0.79	.94/.75	%
Present tense	present	is, does, hear	169		.91/.74	%
Future tense	future	will, gonna	48		.75/.02	%
Adverbs	adverb	very, really, quickly	69		.84/.48	%
Prepositions	prep	to, with, above	60		.88/.35	%
Conjunctions	conj	and, but, whereas	28		.70/.21	%
Negations	negate	no, not, never	57		.80/.28	%
Quantifiers	quant	few, many, much	89		.88/.12	%
Numbers	number	second, thousand	34		.87/.61	%
Swear words	swear	damn, piss	53		.65/.48	%
II. Psychological Processes						
Social Processes	social	mate, talk, they child	455		.97/.59	%
Family	family	daughter, husband, aunt	64	0.87	.81/.65	%
Friends	friend	buddy, friend, neighbor	37	0.70	.53/.12	%
Humans	human	adult, baby, boy	61		.86/.26	%
Affective processes	affect	happy, cried, abandon	915		.97/.36	%
Positive emotion	posemo	love, nice, sweet	406	0.41	.97/.40	%
Negative emotion	negemo	hurt, ugly, nasty	499	0.31	.97/.61	%
Anxiety	anx	worried, fearful, nervous	91	0.38	.89/.33	%

(continued)

Appendix B, continued

Category	Abbreviation	Examples	Words in Category	Validity (Judges)	Alpha: Binary/Raw	Output
Anger	anger	hate, kill, annoyed	184	0.22	.92/.55	%
Sadness	sad	crying, grief, sad	101	0.07	.91/.45	%
Cognitive processes	cogmech	cause, know, ought	730		.97/.37	
Insight	insight	think, know, consider	195		.94/.51	%
Causation	cause	because, effect, hence	108	0.44	.88/.26	%
Discrepancy	discrep	should, would, could	76	0.21	.80/.28	%
Tentative	tentat	maybe, perhaps, guess	155		.87/.13	%
Certainty	certain	always, never	83		.85/.29	%
Inhibition	inhib	block, constrain, stop	111		.91/.20	%
Inclusive	incl	and, with, include	18		.66.32	%
Exclusive	excl	but, without, exclude	17		.67/.47	%
Perceptual processes	percept	observing, heard, feeling	273		.96/.43	%
See	see	view, saw, seen	72		.90/.43	%
Hear	hear	listen, hearing	51		.89/.37	%
Feel	feel	feels, touch	75		.88/.26	%
Biological processes	bio	eat, blood, pain	567	0.53	.95/.53	%
Body	body	cheeck, hands, spit	180		.93/.45	%
Health	health	clinic, flu, pill	236		.85/.38	%
Sexual	sexual	horny, love, incest	96		.69/.34	%
Ingestion	ingest	dish, eat, pizza	111		.86/.68	%
Relativity	relativ	area, bend, exit, stop	638		.98/.51	%
Motion	motion	arrive, car, go	168		.96/.41	%
Space	space	down, in, thin	220		.96/.44	%
Time	time	end, until, season	239		.94/.58	%
III. Personal Concerns						
Work	work	job, majors, xerox	327		.91/.69	%
Achievement	achieve	earn, hero, win	186		.93/.37	%
Leisure	leisure	cook, chat, movie	229		.88/.50	%
Home	home	apartment, kitchen, family	93		.81/.57	%
Money	money	audit, cash, owe	173		.90/.53	%
Religion	relig	altar, church, mosque	159		.91/.53	%
Death	death	bury, coffin, kill	62		.86/.40	%
IV. Spoken Categories						
Assent	assent	agree, ok, yes	30		.59/.41	%
Non-fluencies	nonflu	er, hm, umm	8		.28/.23	%
Fillers	filler	blah, Imean, youknow	9		.63/.18	%
V. Punctuation	punct	period, comma	-		-	-

Notes. 1. 'Words in category' refers to the number of different dictionary words that make up the variable category.

(continued)

Appendix B, continued

Validity judges reflect the simple correlations between judges' ratings of the category with the LIWC variable (Pennebaker & Francis, 1996). Alphas refer to the Cronbach alphas for the internal reliability of the specific words within each category. The binary alphas are computed on the occurrence/non-occurrence of each dictionary word whereas the raw or uncorrected alphas are based on the percentage of use of each of the category words within the texts. All alphas were computed on a sample of 2800 randomly selected text files from our language corpus.

2. The LIWC dictionary generally arranges categories hierarchically. For example, all pronouns are included in the overarching category of function words. The category of pronouns is the sum of personal and impersonal pronouns. There are some exceptions to the hierarchy rules:

2.1. Common verbs are not included in the function word category. Similarly, common verbs (as opposed to auxiliary verbs) that are tagged by verb tense are included in the past, present, and future tense categories but not in the overall function word categories.

2.2. Social processes include a large group of words (originally used in LIWC (2001) that denote social processes, including all non-first-person-singular personal pronouns as well as verbs that suggest human interaction (talking, sharing).

2.3. Perceptual processes include the entire dictionary of the Qualia category (which is a separate dictionary), which includes multiple sensory and perceptual dimensions associated with the five senses.

Source: Pennebaker, Chung, Ireland, Gonzales, and Booth (2007).

Appendix C. Discourse Morphosyntactic Resources

Resources for the tracking of Focus and Prominence
Morphosyntactic Resources with Examples[108]

(1) Topicalization: A topic element may be placed at the beginning of a clause to explicitly mark the topic which usually refers to preceding discourse. (Speaking of injuries, Sam finally recovered from another **fall**).
(2) Preposing: An element of clause structure can be preposed. The topic and preposed elements are both focus (starting point for the message) and prominent in the last word within the clause (His innocence, he lost in **child**hood)
(3) Post-posing: Elements of clause structure may be post-posed (Sam lost it in **child**hood, his **innocence**)
(4) Clefts: Clefts allow prominence to occur on a single marked constituent (It was **Sam** who lost his innocence in childhood) and Pseudo-clefts (What **Sam** experienced was loosing his innocence in childhood.
(5) Passivization[109] -Passivization reorders a clause's elements so that a thematic argument is shown as the focus (subject) position and an agent, cause, or experiencer is either backgrounded through deletion or made prominent in a final adjunct position (The sense of innocence, was lost in **child**hood; The sense of innocence, was lost in childhood, by **Sam**), cause or experiencer is either deleted or backgrounded (Sam was de**stroyed**; Sam was destroyed by his **parents**) or made prominent in a final position (The injury-events were thought im**po**ssible; The injury-events were thought impossible by most **pe**ople).
(6) Ergative Verbs –Ergative verbs are verbs of motion and change of state that allow inclusion or omission of Agent or Cause without need for passivization. When Agent or Cause are present and clauses are active, they are focus (Jack pushed the **boy**; The blow changed the **tooth**-line); when absent, the thematic argument is focus (The boy's **fall** changed his tooth-line; The tooth-line **changed**)
(7) Nominalization –Nominalization refers to processes that incorporate predicational information, including incorporating clauses into noun phrases by changing the verb into a noun. Asp and de Villiers (2010, p. 83) provide a useful example with one of the seven morphosyntactic resources (nominalization) that are available to highlight marked focus and prominence (focus is underlined and **prominence** is in bold): The use of 'destroy' as a verb requires an Agent/Cause (Military) and a Patient (the city) as in (a) 'The Military destroyed **the city**.' However, the nominalization of destroy (using destroy as if it was a noun) allows Agent in (b) 'The destruction of the city was **sad**', and Patient in (c) 'The destruction by the Military was **sad**', to be backgrounded or deleted altogether in (d) 'The destruction was **sad**'.

[108] From Asp and de Villiers (2010) with some modifications to the examples.

[109] Passivization was not included in the analyses, because texts as long as 300 words or more are required for language-use patterns specific to passivization to emerge in natural language texts. The term is included here to provide a complete list of morphosyntactic resources.

Appendix D. National Health Interview Survey, Data Source

Data Access. Researchers are freely able to download files of interest from the NHIS website to compile their own data set. Data file compilation is necessary because the NHIS produces approximately seven different and separate (unlinked) data files per year; for example, individuals' demographic data like sex and age are in a file that is separate from the injury-event descriptions file. The NHIS consists of four core files (Household Composition and Demographics, Family Core, Sample Adult Core, Sample Child Core) that are included every year. Other files can be included depending on the NHIS objectives for any given year. For example, case years 2009 and 2010 included a Disabilities Questions Test data file (CDC, 2011a).

NHIS Sample Design. Each year, a sample of approximately 63,000 households from the non-institutionalized civilian household population is selected from the USA's 50 states and the District of Columbia (CDC, 2010). The NHIS sample is based on a stratified multistage sample design that permits the representative sampling of households in the USA. State-level stratification allows for the calculation of state estimates. Specifically, the multistage methods are used to partition the target universe into several nested levels of strata and clusters. The NHIS target universe is defined as all dwelling units in the USA that contain members of the civilian non-institutionalized population (households and non-institutional group quarters such as college dormitories). The sample area frame is based on Census data and the address lists in the area frame are obtained in a separate listing activity explicitly generated for the NHIS. The sample addresses come from lists that are created by field listing operations (CDC, 2011a).

Oversampling of specific population subgroups, such as Blacks, Asians, and Hispanics can also be involved to ensure both their representation and the reliability of estimates specific to the subgroups' health statistics (CDC, 2011a). The oversampling is curved by the CAPI software program when data for a Black, Asian, or Hispanic person in a household was not included. In such instances, the CAPI system indicates to the field representative that they need to terminate the interview. Terminated cases are referred to by the NHIS as screened-out cases. Otherwise, data for all households identified in a given survey year using the sample design method described above are pursued by the field representatives until the data are collected or it becomes clear that the household as represented in the census used to identify it is different (e.g., a trailer home in a trailer park that is no longer at the previously recorded location; the residents in a home are not the individuals recorded as the residents during the most recent census but are instead non-USA residents renting the home) (CDC, 2011a; 2011b).

The total number of interviewed households each year is about 33,000 (CDC, 2010). The data are available at the household-, family-, and individual-levels. An example of numbers (rounded) per case year for publicly released data can be illustrated with the 2010 NHIS data files: households, n = 43,210; families, n = 35,180; persons, n = 89,980; sample-of-adults, n = 27,160; sample-of-children, n = 11,280; sample-of-injuries, n = 2,165; sample-of-injury-event descriptions, n = 2,165. The sample-of-adults and the sample-of-children interviewees are selected randomly by the CAPI system (described below) and displayed on the computer screen for the interviewer to pursue. The NHIS sample-of-injuries and sample-of-injury-event descriptions exclude cases that do not have information on cause, date, and place of occurrence, or if they consisted only of health conditions that could not be classified according to the International Classification of Diseases, Clinical Modification, version 9's (ICD-9-CM) nature-of-injury and external-cause-of-injury codes (E-codes). For example, for the case year 2010

numbers presented above for the sample-of-injuries file, the NHIS removed 145 ineligible cases reducing the initial sample from n = 2,310 to n = 2,165.

NHIS Data Collection. The NHIS age-based criterion for interviewees or proxy interviewees is generally 18-years or older. Eighteen is the age of majority in most USA states, but is 19-years old in Alabama and Nebraska, and 21-years-old in Mississippi. All persons whose age is greater than the age of majority in a household at the time of the interview can respond on behalf of another person that is less than the age of majority, or for members of the household whose age is greater than the age of majority but are not at home at that time of the interview. For data collected for children and youth under the age of majority, a responsible, knowledgeable, and related[110] adult from the same household is required. A responsible adult is a person that is aged greater than the age of majority and has the mental and physical ability to provide adequate and appropriate answers to the NHIS questions. Knowledgeable refers to having familiarity with the health of the child (CDC, 2010; CDC, 2011a).

The NHIS household data are meant to be gathered in a face-to-face interview by an NHIS field representative from an eligible household respondent with the CAPI system. The CAPI system displays a list of knowledgeable others for the NHIS field representative to select from in relevant sections of the survey. In the instances when (a) the interviewee declines a face-to-face interview, (b) repeated attempts to make in-person contact are not successful, or (c) when travel distance or travel conditions (e.g., dangerous road conditions) make it difficult to schedule an in-person interview in time for the close-out date for a specific interview period, the data can be gathered over the telephone. An interview period consists of the sixteen-days in which NHIS field representatives have to complete a data collection assignment (e.g., quarter one, week three, started on Monday, January 18, 2010 and closed on Tuesday, February 2, 2010). While the NHIS is voluntary, participation is encouraged by field representatives for data completeness (CDC, 2010).

Participant Confidentiality. To maintain participants' confidentiality, the NHIS instructs its field representatives to replace participants' personal names with pronouns enclosed in angle brackets. For example, rather than typing in "Sally ran out of the house and pushed Bob to the ground", the NHIS field representatives are meant to type-in "<She> ran out of the house and pushed <him> to the ground." Additionally, for cases that retain sufficiently unique injury-event details that could risk identifying a participant (e.g., a publicized case) or discredit a group (e.g., a restaurant chain), are meant to be edited further by the NHIS field representatives. In the case of the restaurant chain, the chain's name is meant to be replaced with <restaurant> to ensure the confidentiality of all parties, irrespective of direct or indirect involvement in the injury-event (CDC, 2010; CDC, 2011a) (see Table 3 for a list of the NHIS public release data edit rules).

[110] The NHIS's definition of 'family' is two or more related persons living in the same housing-unit –a household (CDC, 2011a).

Appendix E. Discourse Pattern Function Variables

Discourse Pattern Function (DPF) Dependent Variable Categories and Variables

DPF Variable Categories and Variables	Source
1. Ideational Category	Asp & de Villiers (2010) unless otherwise noted
Process	Stillar (1998) and Asp and de Villiers (2010)
Participants, Injured Child/Youth	Injured Child/Youth, by author
Participants, Another Child/Youth	Another Child/Youth, by author
Participants, Another Person	Another Person, by author
Participant, Non-animate/Non-human	Non-animate/Non-human, by author
Participant, Additional role outside Process parameter	with Additional role outside Process parameter, by author
Participant, Not Mentioned	Not Mentioned, by author
Participants, categories, Injured Child/Youth Role 2	Injured Child/Youth Role 2, by author
Circumstantial	(not a variable, coded instead as, e.g., Time 1, Place)
Time 1, first instance	
Time 2, second instance	Time 2 -second instance, by author
Place	
Manner	
Other	
Point of comparison	
Aspect	
Tense	
2. Interactional Category	Asp & de Villiers (2010)
Speech function	
Tag	
Modality	
Attitude	
Evaluation	
3. Textual organization Category	Asp & de Villiers (2010)
Conjunction/binding 1, first instance	
Conjunction/binding 2, second instance	with conjunction/binding 2 (2nd instance), by author
Ellipsis/substitution 1, first instance	
Ellipsis/substitution 2, second instance	with ellipsis/substitution 2 (2nd instance), by author
Ellipsis/substitution 3, third instance	with ellipsis/substitution 3 (3rd instance,) by author
Reference	
Lexical cohesion	
Focus 1, first instance	
Focus 2, second instance	with focus 2 (2nd instance), by author
Prominence 1, first instance	
Prominence 2, second instance	with prominence 2 (2nd instance), by author
4. Other discourse features Category	
Errors	Asp & de Villiers (2010) unless otherwise noted
Tense shift	de Villiers, J. (personal communication, 2017)
Injured child/youth participant role shift 1, first instance	by author
Injured child/youth participant role shift 2, second instance	by author
Morphosyntactic resources	Asp & de Villiers (2010)
One segment	by author

Notes. Variables by the study's author were informed by and added within the context of the Asp & de Villiers (2010) grammar analysis approach. This was done to reflect the content of the study's data set; thus, in the event where there was a second or third instance of the same variable, a separate variable was created in order to account for all instances of all the variables in the NHIS injury-event descriptions. An instance represents a clause with the variable in question in it.

Appendix F. At-a-glance Word-type Count Contribution

WTC Contribution–Results (sample without interpretative commentary; see Chapter 4, Analysis 1, Research Question 1 for interpretative commentary).

1) Injury-event Type

WTC Injury-event Type, levels 1 thru 3. The first set of between-groups mean-rank comparisons was done among the Injury-event Type variable's levels (1) Intentional, (2) Unintentional, and (3) Ambiguous. Out of the 23 selected variables, 14 (61%) included statistically significant differences ($p < .05$), with seven (50%; 30% out of 23) corresponding to the Standard Linguistic dimension, and the other seven (50%; 30% out of 23) to the Psychological Processes dimension. The remaining nine (39% out of 23) non-statistically significant variables included five (56%; 22% out of 23) variables from the Standard Linguistic dimension and four (44%; 17% out of 23) variables from the Psychological Processes dimension.

Standard linguistic dimension, statistically significant. Three out of the seven variables from the Standard Linguistic dimension included an effect size that was greater than 10% and included Function words, $\eta^2 = 0.140$, $H = 28.429(2, N = 204)$, $p = .001$; Word Count, $\eta^2 = 0.146$, $H = 29.639(2, N = 204)$, $p = .001$; and Six Letters or More,[111] $\eta^2 = 0.114$, $H = 23.053(2, N = 204)$, $p = .001$. Comparatively, four variables had smaller effect sizes that ranged from nearly 6% to close to 7.5% and included Articles, $\eta^2 = 0.058$, $H = 11.789(2, N = 204)$, $p = .003$; Auxiliary Verbs, $\eta^2 = 0.070$, $H = 14.145(2, N = 204)$, $p = .001$; Verbs, $\eta^2 = 0.074$, $H = 15.035(2, N = 204)$, $p = .001$; and references to the Past, $\eta^2 = 0.076$, $H = 15.437(2, N = 204)$, $p = .001$.

Standard linguistic dimension, statistically non-significant. The remaining five variables had an alpha value greater than 0.05 and included Personal Pronouns, $\eta^2 = 0.017$, $H = 3.445(2, N = 204)$, $p = .179$; She/He, $\eta^2 = 0.015$, $H = 3.119(2, N = 204)$, $p = .210$; Prepositions, $\eta^2 = 0.018$, $H = 3.689(2, N = 204)$, $p = .158$; Conjunctions, $\eta^2 = 0.013$, $H = 2.673(2, N = 204)$, $p = .263$; and, Pronouns, $\eta^2 = 0.023$, $H = 4.768(2, N = 204)$, $p = .092$.

Psychological processes dimension, significant. One out of the seven Psychological Processes dimension variables had an effect size greater than 10%: Anger, $\eta^2 = 0.104$, $H = 21.207(2, N = 204)$, $p = .001$. The remaining six variables included an effect size that ranged from nearly 3.2% to nearly 8.5% and included Negative Emotions, $\eta^2 = 0.034$, $H = 6.839(2, N = 204)$, $p = .033$; Inclusive, $\eta^2 = 0.040$, $H = 8.118(2, N = 204)$, $p = .017$; Affect, $\eta^2 = 0.043$, $H = 8.678(2, N = 204)$, $p = .013$; Cognitive Mechanisms, $\eta^2 = 0.052$, $H = 10.586(2, N = 204)$, $p = .005$; Social Processes, $\eta^2 = 0.084$, $H = 16.990(2, N = 204)$, $p = .001$; and Perceptual Processes $\eta^2 = 0.032$, $H = 6.435(2, N = 204)$, $p = .040$.

Psychological processes dimension, non-significant. The remaining four variables included an alpha value greater than 0.05 and included Biological, $\eta^2 = 0.002$, $H = 0.428(2, N = 204)$, $p = .807$; Relativity, $\eta^2 = 0.011$, $H = 2.278(2, N = 204)$, $p = .320$; Space, $\eta^2 = 0.017$, $H = 3.387(2, N = 204)$, $p = .184$; and Body, $\eta^2 = 0.025$, $H = 5.117(2, N = 204)$, $p = .077$.

WTC Injury-event Type, levels 1 and 2. This post-hoc mean-rank comparisons was done between the Injury-event Type variable's levels (1) Intentional and (2) Unintentional. Out of the 23 variables, nine (39%) variables included statistically significant differences ($p < .05$). Five (56%; 22% out of 23) of these nine variables were from the Standard Linguistic dimension, and four (44%; 17% out of 23) variables were from the Psychological Processes dimension. The remaining 14 (61% out of 23) non-statistically significant variables, included seven (50%; 30% out of 23) variables from the Standard Linguistic dimension and seven variables from the Psychological Processes dimension (see Table 6.a for summary statistics).

Standard linguistic dimension, statistically significant. All five statistically significant variables were from the Standard Linguistic dimension. Their effect sizes ranged from 2% to nearly 6.5% ($p < .05$), and included: Function words (3.6%, $\eta^2 = 0.036$, $p = .011$) Auxiliary Verbs (4.2%, $\eta^2 = 0.042$, $p = .006$), references to

[111] The LIWC (2007) variable Six Letters or More stands for words that are greater or equal to six letters long.

the Past, η^2 = 0.033, H = 5.992(1, N = 182), p = .014; Word Count, η^2 = 0.064, H = 11.536(1, N = 182), p = .001; and Verb, η^2 = 0.022, H = 3.969(1, N = 182), p = .046.

Standard linguistic dimension, statistically non-significant. The remaining seven variables had an alpha value greater than 0.05 and included: Personal Pronouns, η^2 = 0.008, H = 1.535(1, N = 182), p = .215; She/He, η^2 = 0.010, H = 1.887(1, N = 182), p = .170; Articles, η^2 = 0.004, H = 0.696(1, N = 182), p = .404; Prepositions, η^2 = 0.008, H = 1.508(1, N = 182), p = .219; Conjunctions, η^2 = 0.001, H = 0.074(1, N = 182), p = .785; Six Letters or More, η^2 = 0.021, H = 3.762(1, N = 182), p = .052; and Pronouns, η^2 = 0.008, H = 1.493(1, N = 182), p = .222.

Psychological processes dimension, significant. One out of four variables from the Psychological Processes dimension had an effect size just over 7%: Anger, η^2 = 0.072, H = 13.070(1, N = 182), p = .001. The remaining three variables included an effect size that ranged from over 2% to just over 3%: Body, η^2 = 0.025, H = 4.581(1, N = 182), p = .032; Social Processes, η^2 = 0.057, H = 10.249(1, N = 182), p = .001; and Perceptual Processes, η^2 = 0.033, H = 6.058(1, N = 182), p = .014.

Psychological processes dimension, non-significant. The remaining seven variables included an alpha value greater than 0.05 and included Cognitive Mechanisms, η^2 = 0.004, H = 0.709(1, N = 182), p = .400; Inclusive, η^2 = 0.003, H = 0.491(1, N = 182), p = .483; Space, η^2 = 0.019, H = 3.365(1, N = 182), p = .067; Affect, η^2 = 0.020, H = 3.531(1, N = 182), p = .060; Negative Emotions, η^2 = 0.010, H = 1.737(1, N = 182), p = .188; Biological, η^2 = 0.001, H = 0.008(1, N = 182), p = .929; and Relativity, η^2 = 0.001, H = 0.235(1, N = 182), p = .628.

WTC Injury-event Type, levels 2 and 3. This post-hoc mean-rank comparisons was done between the Injury-event Type variable's levels (2) Unintentional and (3) Ambiguous. Out of the 23 variables, eight (35%) variables included statistically significant differences (p < .05). Of these eight variables, five (63%; 22% out of 23) variables were from the Standard Linguistic dimension, and three (38%; 13% out of 23) variables were from the Psychological Processes dimension. The remaining 15 (65% out of 23) non-statistically significant variables included seven (47%; 30% out of 23) variables from the Standard Linguistic dimension and eight (53%; 35% out of 23) variables from the Psychological Processes dimension (see Table 6.b for summary statistics).

Standard linguistic dimension, statistically significant. Five variables from the Standard Linguistic dimension included an effect size ranging from nearly 5% to 13% (p < .05). Two variables included an effect size that was greater than 10%: Function words, η^2 = 0.130, H = 16.142(1, N = 125), p = .001; and Six Letters or More, η^2 = 0.109, H = 13.543(1, N = 125), p = .001. Comparatively, three variables had smaller effect sizes that ranged from nearly 5% to close to 10% and included Articles, η^2 = 0.077, H = 9.588(1, N = 125), p = .002; references to the Past, η^2 = 0.047, H = 5.809(1, N = 125), p = .016; and Word Count, η^2 = 0.099, H = 12.262(1, N = 125), p = .001.

Standard linguistic dimension, statistically non-significant. The remaining seven variables had an alpha value greater than 0.05 and included Personal Pronouns, η^2 = 0.009, H = 1.140(1, N = 125), p = .286; She/He, η^2 = 0.006, H = 0.697(1, N = 125), p = .404; Auxiliary Verbs, η^2 = 0.025, H = 3.140(1, N = 125), p = .076; Prepositions, η^2 = 0.010, H = 1.280(1, N = 125), p = .258; Conjunctions, , η^2 = 0.001, H = 1.853(1, N = 125), p = .173; Pronouns, , η^2 = 0.016, H = 2.033(1, N = 125), p = .154; and Verbs, η^2 = 0.059, H = 7.290(1, N = 125), p = .077.

Psychological processes dimension, significant. Three variables from the Psychological Processes dimension included an effect size that ranged from nearly 5% to just over 6% (p < .05) and included Cognitive Mechanisms, η^2 = 0.062, H = 7.710(1, N = 125), p = .005; Inclusive, η^2 = 0.047, H = 5.774(1, N = 125), p = .016; and Affect, η^2 = 0.054, H = 6.665(1, N = 125), p = .010.

Psychological processes dimension, non-significant. The remaining eight variables had an alpha value greater than 0.05 and included Body, η^2 = 0.014, H = 1.733(1, N = 125), p = .188; Space, η^2 = 0.001, H = 0.013(1, N = 125), p = .910; Social Processes, η^2 = 0.023, H = 2.810(1, N = 125), p = .094; Negative Emotion, η^2 = 0.025, H = 3.146(1, N = 125), p = .076; Biological, η^2 = 0.003, H = 0.402(1, N = 125), p = .526; Relativity, η^2 = 0.012, H =

1.433(1, N = 125), p = .231, Perceptual Processes, η^2 = 0.000, H = 0.067(1, N = 125), p = .796; and Anger, η^2 = 0.026, H = 3.279(1, N = 125), p = .070.

WTC Injury-event Type, levels 1 and 3. This post-hoc mean-rank comparisons was done between Injury-event Type were done between the variable's levels (1) Intentional and (3) Ambiguous. Out of the 23 variables, 13 (57%) variables included statistically significant differences (p < .05). Eight (62%; 57% out of 23) out of the 13 variables were from the Standard Linguistic dimension, and five (39%; 22% out of 23) variables were from the Psychological Processes dimension. The remaining ten (44% out of 23) non-statistically significant variables included four (40%; 17% out of 23) variables from the Standard Linguistic dimension and six (60%; 26% out of 23) variables from the Psychological Processes dimension (see Table 6.b for summary statistics).

Standard linguistic dimension, statistically significant. Three out of the eight statistically significant variables (p < .05) included an effect size greater than 20%: Function words, η^2 = 0.256, H = 25.649(1, N = 101), p = .001; Word Count, η^2 = 0.239, H = 23.934(1, N = 101), p = .001; and Six Letters or More, η^2 = 0.229, H = 22.865(1, N = 101), p = .001; Of the remaining five variables, four included an effect size that was greater than 10%: Articles, η^2 = 0.113, H = 11.282(1, N = 101), p = .001; Auxiliary Verbs, η^2 = 0.102, H = 10.201(1, N = 101), p = .001; references to the Past, η^2 = 0.131, H = 13.070(1, N = 101), p = .001; and Verbs, η^2 = 0.143, H = 14.289(1, N = 101), p = .001. In contrast, the eighth variable had a much smaller effect size: Pronouns, η^2 = 0.044, H = 4.402(1, N = 101), p = .036.

Standard linguistic dimension, statistically non-significant. The remaining four non-statistically significant variables included an alpha value greater than 0.05 and included Personal Pronouns, η^2 = 0.028, H = 2.762(1, N = 101), p = .097; She/He, η^2 = 0.020, H = 2.028(1, N = 101), p = .154; Prepositions, η^2 = 0.031, H = 3.134(1, N = 101), p = .077; and Conjunctions, η^2 = 0.031, H = 3.050(1, N = 101), p = .081.

Psychological processes dimension, significant. One of the five statistically significant (p < .05) variables included an effect size that was nearly 13%: Anger, η^2 = 0.127, H = 12.700(1, N = 101), p = .001. Of the remaining four variables, two included an effect size larger than 10%: Cognitive Mechanisms, η^2 = 0.107, H = 10.696(1, N = 101), p = .001; and Social Processes, η^2 = 0.122, H = 12.214(1, N = 101), p = .001. The remaining two variables had smaller effect sizes that ranged from nearly 7% to 8.5% and included Negative Emotions, η^2 = 0.068, H = 6.782(1, N = 101), p = .009; and Inclusive, η^2 = 0.085, H = 8.495(1, N = 101), p = .004.

Psychological processes dimension, non-significant. The remaining six variables from the Psychological Processes dimension had an alpha value greater than 0.05 and included Body, η^2 = 0.001, H = 0.064(1, N = 101), p = .800; Space, η^2 = 0.007, H = 0.738(1, N = 101), p = .390; Affect, η^2 = 0.032, H = 3.164(1, N = 101), p = .075; Biological, η^2 = 0.004, H = 0.357(1, N = 101), p = .550; Relativity, η^2 = 0.024, H = 2.400(1, N = 101), p = .121; and Perceptual Processes, η^2 = 0.015, H = 1.450(1, N = 101), p = .229.

2) Point-of-view

WTC Point-of-view Type, levels 1 and 2. The mean-rank comparison for Point-of-view was done between the variable's levels (1) Parent reporter and (2) Non-parent reporter. Out of the 23 LIWC (2007) variables listed above, two (9%) included statistically significant differences (p < .05). The two variables were the only (100%) statistically significant variables from the Standard Linguistic dimension. There were zero statistically significant variables from the Psychological Processes dimension (see Table 6.c for summary statistics).

Standard linguistic dimension, statistically significant. The two statistically significant (p < .05) variables included an effect size that neared 3% and included references to the Past, η^2 = 0.026, H = 5.205(1, N = 204), p = .023; and Verbs, η^2 = 0.029, H = 5.796(1, N = 204), p = .016.

Appendix F, continued.

Standard linguistic dimension, statistically non-significant. The remaining 10 variables had an alpha value greater than 0.05 and included Personal pronouns, $\eta^2 = 0.001$, $H = 0.204(1, N = 204, p = .652)$, Function words, $\eta^2 = 0.000$, $H = 0.015(1, N = 204)$, $p = .902$; Articles, $\eta^2 = 0.009$, $H = 1.923(1, N = 204)$, $p = .166$; Auxiliary Verbs, $\eta^2 = 0.008$, $H = 1.645(1, N = 204)$, $p = .200$; Word Count, $\eta^2 = 0.015$, $H = 3.082(1, N = 204)$, $p = .079$; Six Letters or More, $\eta^2 = 0.019$, $H = 3.815(1, N = 204)$, $p = .051$; She/He, $\eta^2 = 0.007$, $H = 1.422(1, N = 233)$, $p = .902$; Pronouns, $\eta^2 = 0.001$, $H = 0.152(1, N = 204)$, $p = .697$; Prepositions, $\eta^2 = 0.000$, $H = 0.024(1, N = 204)$, $p = .877$; and Conjunctions, $\eta^2 = 0.003$, $H = 0.657(1, N = 204)$, $p = .418$.

Psychological processes dimension, significant. Statistically significant differences were not identified among the psychological processes dimension's 12 variables.

Psychological processes dimension, non-significant. All of the 11 variables in the Psychological Processes dimension included an alpha level greater than 0.05 and included Cognitive Mechanisms, $\eta^2 = 0.003$, $H = 0.588(1, N = 204)$, $p = .443$; Inclusive, $\eta^2 = 0.003$, $H = 0.531(1, N = 204)$, $p = .466$; Social Processes, $\eta^2 = 0.004$, $H = 0.714(1, N = 204)$, $p = .398$; Negative Emotions, $\eta^2 = 0.001$, $H = 0.230(1, N = 204)$, $p = .631$; Affect, $\eta^2 = 0.000$, $H = 0.073(1, N = 204)$, $p = .787$; Body, $\eta^2 = 0.000$, $H = 0.076(1, N = 204)$, $p = .783$; Space, $\eta^2 = 0.001$, $H = 0.236(1, N = 204)$, $p = .627$; Biological, $\eta^2 = 0.000$, $H = 0.003(1, N = 204)$, $p = .958$; Relativity, $\eta^2 = 0.013$, $H = 2.587(1, N = 204)$, $p = .108$; Perceptual Processes, $\eta^2 = 0.010$, $H = 2.056(1, N = 204)$, $p = .152$; and Anger, $\eta^2 = 0.000$, $H = 0.091(1, N = 204)$, $p = .763$.

Appendix G. Likelihood of Deceit Level Comparisons

WTC's LoD Kruskal-Wallis H Test analysis for Injury-event Type, by level.

Intentional. (a) Intentional ranked highest in descending order in four out of the five proxy variables for the estimate of deceit as LoD, that were (i) Personal Pronouns, (ii) Exclusive words, (iii) Negative Emotion words, and (iv) Cognitive Mechanisms words. The proxy deceit variable that did not include Intentional as ranked first, but instead included Intentional as ranked second to Unintentional was Motion words; (b) The post-hoc test indicated two significant differences ($p < .05$) between Intentional and Ambiguous for (i) Negative Emotion words ($\eta^2 = 0.161$, $p = .009$; $MR_I = 27.16$, $MR_A = 17.84$), and for (ii) Cognitive Mechanisms words ($\eta^2 = 0.211$, $p = .003$; $MR_I = 28.09$, $MR_A = 16.91$). This means that the higher proportion for Negative Emotion words and Cognitive Mechanisms words in the between-levels LoD analysis described earlier with the qualified version of the LoD structural context took place within the same set of unqualified variables that included a significant difference ($p < .05$) for Emotion words and Cognitive Mechanisms words in the Intentional vs. Ambiguous comparative context.

Unintentional. (a) Unintentional was ranked second highest in descending order in four out of the five proxy variables for the estimate of deceit as LoD. The proxy variable that did not rank Unintentional second highest, but instead ranked Unintentional first was Motion words (as noted above for Intentional); (b) The post-hoc test identified a significant difference ($p < .05$) between Unintentional and Ambiguous for Cognitive Mechanisms ($\eta^2 = 0.169$, $p = .007$; $MR_U = 27.5$, $MR_A = 17.5$). This means that the higher proportion for Cognitive Mechanisms words in the between-levels LoD analysis described earlier, took place within a structural context that also included a significant difference ($p < .05$) in the Unintentional vs. Ambiguous non-qualified comparative context.

Ambiguous. (a) Ambiguous was ranked third in descending order in four out of the five proxy variables for the estimate of deceit as LoD. The proxy variable that did not rank Ambiguous last, but instead ranked Ambiguous second to Intentional and above Unintentional was Exclusive words;[112] (b) The post-hoc test identified three statistically significant ($p < .05$) differences for Ambiguous, as noted above in two of the three comparative contexts: (1) Intentional vs. Ambiguous for (i) Negative Emotions ($\eta^2 = 0.161$, $p = .009$; $MR_I = 27.16$, $MR_A = 17.84$), and for (ii) Cognitive Mechanisms ($\eta^2 = 0.211$, $p = .003$; $MR_I = 28.09$, $MR_A = 16.91$); and (2) Unintentional vs. Ambiguous for Cognitive Mechanisms ($\eta^2 = 0.169$, $p = .007$; $MR_U = 27.5$, $MR_A = 17.5$). This means that the higher proportion of the variables noted for Ambiguous in said comparisons took place within a structural context that also included a significant difference ($p < .05$) in the Intentional vs. Ambiguous and the Unintentional vs. Ambiguous non-qualified comparative contexts.

Summary for the WTC's patterns for the estimate of deceit as LoD, for Injury-event Type. The findings for the differential proportion analysis for Injury-event Type highlighted patterns for each of the three paired level comparisons (see Table 7). With respect to Intentional, the qualified Feature Present = 1 proxy variable that distinguished it from Unintentional and Ambiguous was more Negative Emotion words in the Intentional vs. Unintentional level comparison. In the Intentional vs. Ambiguous level comparison Feature Present = 1 for more

[112] This interpretation for Ambiguous in relation to Exclusive was interpreted keeping in mind that Exclusive did not meet the study's skewness and kurtosis parameter criteria (see Study Variables); this observation was interpreted as a possible likelihood of a relationship between Ambiguous and Exclusive that influenced Ambiguous getting ranked second to Intentional rather than third to Intentional in the LoD analysis.

Negative Emotion words formed part of the three set of Feature Present = 1 values. This means that for Intentional, more Negative Emotion words, was the single salient Feature Present = 1 feature in the LoD estimate of deceit query. Additionally, the relationship between Injury-event Type and the qualified variable more Negative Emotion words was a statistically significant ($p <$ .05) higher mean rank for Intentional as highlighted by the Kruskal-Wallis *H* Test.

In the case of Ambiguous, one pattern emerged for this level in the Intentional vs. Ambiguous group comparison. The pattern included two out of five Feature Present = 1 language-use features for fewer Personal Pronouns and fewer Exclusive words. Notably, this language-use pattern for Ambiguous was the same for the language-use pattern for Unintentional in the Intentional vs. Unintentional group comparison. However, in the Unintentional vs. Ambiguous group comparison, Ambiguous was the least like Unintentional because Unintentional included four out of five Feature Present = 1 qualified variables while Ambiguous included one out of five Feature Present = 1 qualified variable fewer Personal Pronouns. These three patterns suggested that Ambiguous was less likely to be like Unintentional, and that Unintentional was most like the estimate of LoD. This observation, in turn, suggested that Unintentional may be more likely to include covert mentions of intent as compared to Ambiguous. Overall, the LoD proportional analysis for Injury-event Type showed that the distinguishing language-use pattern for Intentional was more Negative Emotions, for Unintentional it was having the most similar Feature Present = 1 pattern to the estimate of LoD, and for Ambiguous it was having the least similar Feature Present = 1 pattern to the estimate of LoD.

In the Kruskal Wallis *H* Test query for the association among the five unqualified (e.g., without the 'more' and 'less' qualifiers) proxy variables' ranked means, a significant ($p < .05$) difference was identified for Cognitive Mechanisms and Negative Emotions. The post-hoc test identified three significant ($p < .05$) differences. Two of the differences were accounted for by Negative Emotions and Cognitive Mechanisms in the Intentional vs. Ambiguous group comparison. The third difference was accounted for by Cognitive Mechanisms in the Unintentional vs. Ambiguous group comparison. These three patterns corroborate the proportional analysis findings in relation to the association between Intentional and Negative Emotions. These three patterns are also suggestive of an association between Unintentional and Cognitive Mechanisms, that when quantified (i.e., more Cognitive Mechanisms) has been associated with expressions of deceit (DePaulo et al., 2003).

WTC's LoD differential proportion analysis for Point-of-view, by level comparison.

The proportional distribution of the five qualified proxy dependent variables for the estimate of deceit as LoD for Point-of-view follows. In the case of the Parent vs. Non-parent level comparison, Parent was the most like the estimate for LoD with four out of five proxy variables with a Feature Present = 1 and one out of five with a Feature Absent = 0. This means that, as the inverse pattern of Parent, Non-parent included instead one out of five proxy variables with a Feature Present = 1 and four out of five with a Feature Absent = 0, making Non-parent the least like the estimate of LoD. The Feature Present = 1 qualified variables for Parent included (i) fewer Personal Pronouns (3.7%), (ii) more Negative Emotion words (55.6%), (iii) more Motion words (55.6%), and (iv) more Cognitive Mechanisms (81.5%). The Feature Absent = 0 for Parent included fewer Exclusive words (0%). This pattern was the inverse for Non-parent and it included the qualified variable fewer Exclusive words (0%) as Feature Present = 1, and (i) fewer

Personal Pronouns (7.4%), (ii) more Negative Emotion words (40.7%), (iii) more Motion (48.2%), and (iv) more Cognitive Mechanisms (59.3%) as Feature Absent = 0.

Two patterns were unique to the Parent vs. Non-parent comparison. One was the one out of five Feature Absent = 0 qualified variable for Parent that was fewer Exclusive words. In contrast, the one out of five Feature Present = 1 qualified variable for Non-parent was fewer Exclusive words. This pattern for Parent vs. Non-parent relative to the estimate of deceit as LoD is noted because, as noted earlier, making fewer references to Exclusive words rather than more has been associated with expressions of deceit (Newman et al., 2003). The other pattern was the differential proportion for Feature Present = 1 and Feature Absent = 0 between Parent and Non-parent across the five qualified proxy variables for the estimate of deceit as LoD that was 80% to 20% respectively, with a total differential between groups ratio of 60. Notably, the total differential between levels ratio of 60 for Parent vs. Non-parent level comparison from Point-of-view was the same as the total differential between levels ratio of 60 for the Unintentional vs. Ambiguous level comparison. This was the largest differential between groups ratio for Injury-event Type. (see Table 7).

WTC's Likelihood of Deceit Kruskal-Wallis H Test analysis for Point-of-view.

The query into the association between the five unqualified (without the 'less' and 'more' qualifiers) dependent proxy variables for the estimate of deceit as LoD and the independent variable Point-of-view did not include a significant mean rank differences ($p > .05$) between the levels Parent and Non-parent (see Table 8).

WTC's Likelihood of Deceit Kruskal-Wallis H Test analysis for Point-of-view, by level.

By level, Parent ranked first in relation to Non-parent for all five proxy variables for the estimate of deceit as LoD, and the differences between the ranked means were not statistically significant ($p > .05$) per the Kruskal-Wallis *H* Test (see Table 8).

Summary for the WTC patterns for the estimate of LoD, for Point-of-view. In the context of the estimate of deceit as LoD, the findings for Point-of-view highlighted that Parent injury-event descriptions tended towards including more language-use features that have been associated with the qualified proxy variables for the estimate of deceit as LoD as compared to Non-parent. Parent injury-event descriptions can be outlined as being more likely to focus on the context and contextual circumstances for the three[113] out of the five proxy variables that were more Motion, more Negative Emotion words, and more Cognitive Mechanisms, as Feature Present = 1, while being forthright with respect to their role in the injury-event for one out of the five proxy variables that was fewer Exclusive words as Feature Absent = 0; and more likely to be somewhat anonymized specific to relational roles, possibly with the aim to keep the injury inflicting family member's identity unnamed for one out of the five proxy variables that was fewer Personal Pronouns as Feature Present = 1. With respect to the query into the association among the unqualified five proxy variables for Point-of-view with the Kruskal-Wallis *H* Test for mean rank comparisons, a statistically significant difference ($p > .05$) was not identified (see Table 8).

[113] More Negative Emotions and more Motion were informed by Newman et al. (2003) and more Cognitive Mechanisms was informed by DePaulo et al. (2003).

Appendix H. Discourse Process Language-use Patterns

In the case of the Ideational grammar category, the injury-event related processes that took place around the injured child/youth involved the injured child/youth themselves as a participant in the role of Agent and as a body part in the role of Patient. Mention of the injured child/youth as a person as Agent was noted with the levels Agent Mentioned and Agent Pragmatically Determined from the variable level Injured Child/Youth. Whereas, mention of the injured child/youth as a participant as a body part as Patient was noted with the variable level Injured Child/Youth Role 2. Because participant roles are a constituent element of process features (see Appendix A), the association between participant roles and the three process features that were identified in the three-levels analysis, Motion, Affective, and Designative, were looked at across Injury-event Type's Intentional, Unintentional, and Ambiguous.

One of the resulting observations was that language-use patterns for Unintentional tended to be associated with the language-use features used to describe injury-events with the injured child/youth in an agent role. One role was Agent Pragmatically Determined (Injured Child/Youth) that included a greater frequency for Unintentional (59%) as compared to Intentional (25%) and Ambiguous (16%). Notably, the proportions for Agent Pragmatically Determined were similar to the proportions that were noted in the instances when the injured child/youth was referred to as Injured Child/Youth Body Part in their second assigned role (Injured Child/Youth Role 2) as Patient. The proportions for the level Injured Child/Youth Body Part were Unintentional 53%, Intentional 29%, and Ambiguous 18%.

The correspondence between the proportions for the Injured Child/Youth level Agent Pragmatically Determined and the Injured Child /Youth Role 2 level Injured Child/Youth Body Part may have represented the injury-event descriptions in which the injured child/youth chose to engage with their social and/or material context as Agent, and subsequently sustained an injury. In such an instance the injured child/youth was also a Patient, but was referred to in the injury-event description as a body part instead (e.g., 'so the hand got cut' vs. 'so her hand got cut'). Support for this observation was provided by two patterns that were specific to the Process variable Motion. Motion included similar proportions to those that were noted for the level Agent Pragmatically Determined and the level Injured Child/Youth Body Part. Additionally, Motion (e.g., motion verb in underline, 'Sam <u>ran</u> to the park') were also more frequent for Unintentional (58%) as compared to Intentional (36%) and Ambiguous (6%). These language-use patterns showed that unintentional injury-event descriptions, as compared to intentional and ambiguous injury-event descriptions, included second mentions of the injured child/youth in the role of Patient as a body part more frequently than as a person when the first mentions of the injured child/youth in the role of Agent were non-explicit and the Process was Motion.

Similarly, the language-use patterns for Intentional also tended to be associated with the language-use features that were used to describe injury-events with the injured child/youth in an agent role. Except, in this instance, the highlighted role was Agent Mentioned (also from the variable level Injured Child/Youth from the Ideational grammar category). The proportion for Agent Mentioned was similar but more frequent for Intentional (49%) than it was for Unintentional (45%), and both Intentional and Unintentional included a higher proportion than Ambiguous (6%). Notably, the proportions for the variable level Agent Mentioned were similar to the proportions noted for 'No' (Feature Absent = 0) for the variable level Injured Child/Youth Role 2 (from the Ideational grammar category) that included a higher proportion for Intentional (50%) as compared to Unintentional (43%), and both Intentional and Unintentional included a

higher proportion than Ambiguous (7%).

In this instance, the correspondence between Agent Mentioned from the variable level Injured Child/Youth, and 'No' (Feature Absent = 0) from the variable level Injured Child/Youth Role 2 may have represented the injury-event descriptions for which a second mention of the injured child/youth was not included because the injured child/youth was explicitly noted as Agent Mentioned in an earlier clause. Support for this observation was provided by one of two Process variables that ranked Intentional higher. The one process variable was Affective (e.g., action verb with an objective [in underline] 'Sam hit her in the nose with a pipe') and it included a higher frequency for Intentional (50%) than for Unintentional (42%), and Ambiguous (8%). Additionally, a level from the variable Injured Child/Youth Role Shift 1 (from the Other discourse features grammar category) called Agent Mentioned[114] also included similar proportions to the proportions noted for the level Agent Mentioned that included a greater frequency for Intentional (50%) as compared to Unintentional (44%) and Ambiguous (6%). This language-use pattern showed that intentional injury-event descriptions, as compared to unintentional and ambiguous injury-event descriptions, were more frequently associated with a structure that included instances where the injured child/youth's Participant role was Agent Mentioned, and the mention of a second role for the injured child/youth was excluded when the Process was Affective.

The second of the two Process variables that ranked Intentional (57%) higher as compared to Unintentional (29%) and Ambiguous (14%), was Designative (e.g., a time delimited process like 'playing hockey'). In this instance, the most similar Participant role proportions to the proportions for the process Designative were those noted for the agent level 'Agent Not Mentioned' from the Participants variable level Not Mentioned that were Intentional 55%, Unintentional 31%, and Ambiguous 14%. This language-use pattern showed that intentional injury-event descriptions were associated more frequently with the process Designative in the instances when a required participant in the agent role was missing and noted as Agent Not Mentioned. The exclusion of any mention of a participant in the injury-event descriptions that include this Process-Participant pattern may be due to an effort made on the part of the person providing the injury-event description to exclude the mention of participants with the purpose of shifting attention to the processes that took place around the injured child/youth. The exclusion of Agent for the process Designative is a type of structural modification. As such, the Textual Organization grammar category was looked at to see if a structural modification was noted with one or more of the variables that are specific to textual organization.

Support was identified for the latter supposition on structural modification specific to shifting attention away from participants to processes that took place around the child rather than to the child. The implicated variable level from the Textual Organization grammar category was Prominence 1's Range. Range is the structural feature for the process Designative that indicates a time delimited process, such as the beginning and the end of an activity (e.g., Range is in underline, 'Sally was playing hockey') (see Appendix A). Range as Prominence 1 (the last element in a clause) included similar proportions to the proportions for the two elements from the Ideational grammar category noted earlier, Designative (Process) and Agent Not Mentioned (Participants). The proportions for Range included a higher frequency for Intentional (58%), as compared to Unintentional (44%), and Ambiguous (6%). This language-use pattern showed that intentional injury-event descriptions, as compared to unintentional and ambiguous injury-event

[114] Not to be confused with Agent Mentioned used earlier for a different variable and a different grammar category.

descriptions, were more frequently associated with a structure that included instances where the injured child/youth's Participant role was Agent Not Mentioned, and when the language-use feature noted for Prominence 1 was Range for the Process Designative.

The other constituent structural elements, aside from the Process and Participant variables noted above included Another Child/Youth (Participants) and Tense from the Ideational grammar category; Ellipsis/Substitution 1, as well as the other not yet addressed variable levels from the variable Prominence 1 from the Textual Organization category; and Injured Child Role Shift 1 from the Other discourse features grammar category. Specific to other participants, unlike the two-levels analysis, the three-levels analysis included only one level from the variable level Another Child/Youth that was 'No' (Feature Absent = 0). This one level included a higher proportion for Unintentional (51%) than for Intentional (39%) and Ambiguous (10%). This proportional pattern was most similar to the proportional pattern for the Process variable Motion that was Unintentional 58%, Intentional 36%, and Ambiguous 6%. This correspondence in proportions lends support to the earlier suggested pattern for the Process-Patient association by showing that unintentional injury-event descriptions that included the process variable Motion were more frequently associated with a structure where the content included instances where the injured child/youth's Participant role as a person was not explicitly mentioned.

Concerning Tense, the proportional differences for Past was most similar among Intentional (45%) and Unintentional (48%), but not Ambiguous (7%). When compared to Past, Non-finite included the same proportion between Intentional (37%) and Unintentional (37%). However, in contrast to Past, the proportion for Non-finite was most similar across Intentional (37%), Unintentional (37%), and Ambiguous (26%). In the case of Tense Not Mentioned (e.g., minor clauses that exclude tense like 'no surgery required'), the proportional difference was most similar between Intentional (21%) and Ambiguous (18%), than it was between Intentional or Ambiguous and Unintentional (61%). For the purpose of distinguishing between injury-event types, the structural patterns that include Past and Non-finite may be more helpful in distinguishing Intentional and Unintentional from Ambiguous; whereas, Tense Not Mentioned may be more helpful in distinguishing Intentional and Ambiguous from Unintentional.

For the Textual Organization grammar category for Prominence 1, its variable levels (other than Range that was noted earlier), were similar for Patient, Process, and Location. Specifically, their proportion were greater for Unintentional, followed by Intentional and Ambiguous. For the purpose of distinguishing between injury types, Patient could possibly be more helpful in differentiating between Intentional (44%) and Unintentional (46%) from Ambiguous (10%). In the case of Process (Intentional 38%, Unintentional 55%, Ambiguous 7%) and Location (Intentional 39%, Unintentional 55%, Ambiguous 6%), they could potentially be more helpful in differentiating between all three injury types. In the case of the variable, Ellipsis/Substitution 1, its levels 'No' (Feature Absent = 0, Intentional 56%, Unintentional 41%, and Ambiguous 3%) and 'Pragmatically Determined or Possibly Omitted Pronoun + Auxiliary Phrase' (Intentional 25%, Unintentional 58%, and Ambiguous 17%) could potentially be helpful in distinguishing among all three levels of Injury-event Type. Additionally, as noted earlier in the two-levels analysis in relation to Prominence 1, Focus 1 was absent in the Injury-event Type analysis. This was the reverse pattern for the independent variable Point-of-view that included Focus 1, but not Prominence 1.[115]

[115] Typically, focus (first element in a clause) and prominence (last element in a clause) are analyzed together in order to note their concordance.

Appendix I. Dissimulation of Intent Level Comparisons

DPF's DoI language-use patterns across body, mind, and context–the study's domains with the Injured Child/Youth in the Agent role

The body per the grammar analysis Other discourse features category. Of the five qualified proxy variables, two included indirect references to the body, and they were the Nominalization and Ergative Verbs. Specific to the body, the qualified more Nominalization variable included instances where a verb that implicated the body either in movement (e.g., the process leading to the injury noted by the verb 'to land', as in to land on the floor after being pushed), or as the target of the injury process (e.g., to cut, as in getting cut on the face) were changed from their verb form into a noun form through the process of nominalization. For example, when nominalized, the verb 'to land' would be expressed as 'a wrong landing on the elbow' which then represents the injury process 'to land wrong' without participants. Importantly, as demonstrated in this example, the nominalization process can work to change a clause's structure such that the attention shifts from the process that lead to the injury where other interactants may have been implicated, to the injury process itself. The language-use feature for the qualified variable more Nominalization, included Feature Present = 1 for Ambiguous (100%) and Intentional (71.4%), as well as Non-parent (53.8%).

In the case of the qualified more Ergative Verbs variable, a similar shift in attention can be obtained on the clause's structure. However, the manner in which ergative verbs work to exclude an explicit reference to the interactants is different than it is for nominalization. In the case of ergative verbs, they can be used to denote the subject as both Agent and Patient, as shown in 'and broke arm'. In this particular example 'he' was ellipted (interpretable through reference to prior text) based on information from a preceding clause, where 'he' was the subject/Agent and object/Patient that underwent the broken arm injury experience. This means that if another participant was involved, their inclusion in the explanation of the action that contributed to the injury outcome is not required based on this particular grammar structure. The variable Ergative Verbs was included in the 'body' dimension because a subject/Participant's role can change in status from injured person to injured body part as it is in the example provided earlier 'and broke arm.' The qualified variable more Ergative Verbs included Feature Present = 1 for Ambiguous (100%) and Unintentional (57.1%), as well as Parent (55.6%). These nominalization examples show how the non-standard use of word reference features (e.g., using a verb as if it was a noun) can be used to morph grammar structure in order to not mention one or all interactants in coactive events. Ergative verbs illustrate how language-use features work to shift attention away from participants to the injury-event's processes. The processes of nominalization and ergative verbs are referred to as morphosyntactic resources in the grammar approach used in this study.

The mind per the grammar categories Other discourse features and Textual Organization. It follows from the body dimension above that the use of morphosyntactic resources, specifically nominalization and ergative verbs, requires a choice to use such resources. The making of such a choice implicates the mind. Another language-use feature that implicated the mind was Tense Shift. As note earlier, the use of tense shift is associated with time references that are specific to experienced events that were high on emotionality above and beyond a person's emotive baseline. Such emotive intensity by degree can influence how an injury-event is described specific to referencing the event as taking place in past or present. More emotionally intense events can be spoken about in the present rather than in the past. In the study's sample, less

Tense Shift included a Feature Present = 1 for Unintentional (50%) and Ambiguous (0%), as well as for Parent (50%). Additionally, the Fisher's Exact Test flagged a significant ($p < .05$) association between Tense Shift and Injury-event Type.

The mind per the grammar category Textual Organization. Similar to the choice that is involved in the use of nominalization and ergative verbs, a choice is made also in how a clause's structure is put together. The clause's structural features that were implicated in the estimate of covert mentions of intent as DoI were the qualified variables less Focus and less Prominence. Because these two language-use features were used in the estimate with the injured child/youth in the Agent role, the two language-use features are specifically addressing the injured child/youth's participant role. As such, less Focus and less Prominence are also noted under the context domain below along with their corresponding details.

The context per the grammar category Textual Organization. Similar to the assertion made earlier about the implication of the mind when morphosyntactic resources and tense shift are used, the two language-use features less Focus and less Prominence were also considered in the mind domain in the form of the choice that is made by a person to situate the clauses subject/Agent and object/Patient either in the position of Focus or Prominence. In the case of less Focus, it included Feature Present = 1 for Ambiguous (11.1%) and Unintentional (19.2%), as well as Parent (17.2%). In the case of less Prominence, it included Feature Present = 1 for Unintentional (1.4%) and Intentional (4.3%), as well as Parent (1.6%).

Notably, in the instances where Agent was in the clause's structural location for Focus, the subsequent words/grammar after Focus ensue in relation to Agent as subject. This means that the text for an injury-event description then needs to be chosen to cohere with the Agent/subject in the Focus site. In this instance, there would be less latitude for modifications to grammatical structure as compared to Prominence/object (explained below) once Agent/subject is chosen. Therefore, the related semantic potential (variation) of the language that can be used to fit the grammatical structure would be somewhat reduced as a function of what is placed at the start in the position of Focus as Agent that would function as an outline of expected subsequent clausal elements. On the other hand, in the instances when Agent is Prominence/object (last, after the subject and verb) somewhat more latitude in semantic potential is afforded to the grammar structure and related semantics that are related to the injured child/youth in the Agent role prior to 'closing' the clause. These language-use feature patterns could be considered as plausible reasons for the differences observed in the language-use patterns in the injury-event descriptions for Focus and Prominence.

Summary from the view of the experiential dimensions of body, mind, and context. For the DPF's DoI specific to the injured child/youth in the role of Agent, this view provided an informative outline of how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context. For the body domain, the language-use data pattern showed that ambiguous injury-event descriptions were more likely to include a higher proportion of nominalizations followed by intentional and unintentional injury-event descriptions. Ambiguous injury-event descriptions were also more likely to include a higher proportion of ergative verbs, followed by unintentional and intentional injury-event descriptions. Together with the language-use features from the mind domain such as the absence of Tense Shift, and the language-use feature context domain such as the absence of Prominence, as well as having the lowest proportion of Focus, Ambiguous denoted a language-use pattern that included the most features that likened it to the estimate of deceit as Dissimulation of Intent (DoI).

DPF's DoI language-use patterns across body, mind, and context–the study's domains with the Injured Child/Youth in the Patient role

For the DPF's DoI specific to the injured child/youth in the role of Patient, this view provided an informative outline of how injury-event descriptions tended to be communicated in what was recorded in the NHIS reporting context. For the body domain, the language-use data pattern showed that ambiguous injury-event descriptions were more likely to include a higher proportion of nominalized verbs, followed by intentional and unintentional injury-event descriptions, and this was consistent with the earlier reported finding for the injured child/youth in the Agent role. Similarly, in the case of Ergative Verbs, Ambiguous injury-event descriptions were also more likely to include a higher proportion as compared to unintentional and intentional injury-event descriptions, and this was also consistent with the earlier reported finding for the injured child/youth in the Agent role. Together with the language-use features from the mind domain such as the absence of Tense Shift, as well as having the lowest proportion of Focus, Ambiguous denoted a language-use pattern that included almost as may features that likened it to the estimate of deceit as Dissimulation of Intent (DoI), as compared to those features that were identified for the same analysis with the injured child/youth in the Agent role.

The excepted variable that made this analysis for Ambiguous with the injured child/youth in the Patient role distinct from the earlier pattern reported for the injured child/youth in the Agent role was less Prominence. Instead, rather than less Prominence including a zero proportion (0%), Prominence included the highest proportion (22.2%) with the injured child/youth was in the Patient role. This finding suggests that in the instances where the injured child/youth was in the Patient role, the two Textual Organization variables less Focus and less Prominence were more likely to include a Feature Absent = 0, because they included the highest proportion of Focus and Prominence for Ambiguous as compared to Intentional and Unintentional. This contrast in least (Agent role) vs. most (Patient role) for Focus and Prominence could be a pattern that could help identify interactional roles in injury-event descriptions when the injured child/youths relation to an interactant is not explicitly mentioned, and render otherwise ambiguous injury-event descriptions interpretable for intent. Additionally, when the excepted variable is accounted for, this made the estimate of dissimulation of intent as DoI with the injured child/youth in the Patient role less like the estimate of DoI as compared to the patterns for the estimate of DoI with the injured child/youth in the Agent role.