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Graduate Program in Health and Rehabilitation Sciences
A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy
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Examining the Shift in Occupational Identity after a Brain Injury

(Thesis Format: Integrated Article)

by

Mikelle Bryson-Campbell

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
Western University
London, Ontario, Canada

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Abstract and Keywords

Occupational identity is defined by Kielhofner (2002) as a sense of who we are as an occupational being, based on our past, current, and future occupational roles. When a life disruption such as a brain injury (BI) occurs and the disruption impacts the ability to conduct an occupation deemed meaningful an important process of transition occurs (Muenchberger, Kendall, & Neal, 2008). In turn occupational identity may shift to reflect the current health and economic status of the individual and what occupations are judged as meaningful.

The current study examined the shift in occupational identity in BI survivors in a two part mixed methods study. Study 1 involved a qualitative analysis of occupational identity and participant's description of the process underscoring the shift in occupational identity. Nine BI survivors were interviewed and data were analyzed by the use of grounded theory methodology. Study 2 involved the administration of the Occupational Performance and History Interview-II (OPHI-II) reviewed by brain injury survivors for the purposes of the current study. The OPHI-II was administered to 16 BI survivors to ascertain the difference between survivors who returned to paid or unpaid work and those who did not return to work to examine the impact of resuming an occupation such as work on occupational identity.

Results of Study 1 indicated survivors articulated a process which unfolded after the BI occurred and was impacted by occupational choices. The process, marked by the comparison of self to others, involved gaining an awareness of limitations, grappling with the negative BI label, and finally disconnecting into a BI lifestyle.

Study 2 analyses found BI survivors who returned to work scored higher on the occupational identity scale compared to those who did not return to work. There was also a correlation found between the OPHI-II scales (Occupational Identity, Occupational Competence,

and Occupational Settings). It is therefore conceivable that BI survivors can re-develop an occupational identity upon the re-engagement in occupational roles and there is a relationship between the development of occupational competence and occupational identity and the occupational environment.

Keywords: Occupational Identity, Brain Injury, Occupational Performance and History Interview-II, Grounded Theory, Mixed Methods.

Co-Authorship Statement

The literature review noted in Chapter 2 of this dissertation has been published in a peer reviewed journal (Bryson-Campbell, Shaw, O'Brien, Holmes, & Magalhaes, 2013). It is expected at least two other chapters in the dissertation will be submitted for publication. Members of the dissertation committee will be invited to participate as co-authors as they have contributed to the methodological design, data collection and analysis, and interpretation of the results.

Acknowledgements

As I write this acknowledgement page I reflect upon the numerous individuals who helped me succeed in this journey to achieve my PhD. Although words cannot adequately express my gratitude towards these individuals I am taking this opportunity to publicly acknowledge their contributions.

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My supervisory committee, Dr Jeffery Holmes and Dr James O'Brien, tirelessly supported me in the pursuit of excellence during the entire research process. Drs Holmes and O'Brien supported me in making this dissertation the best it could be by offering feedback and their expertise even across different provinces.

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Chapter 1 Introduction

1.1 Background and Significance of the Research

Rehabilitation professionals are currently trained to implement specialized programs for brain injury survivors to facilitate the recovery from the trauma caused by traumatic brain injury. Traumatic brain injury is defined as damage to the brain caused by an external force (Maas, Stocchetti, & Bullock, 2008). These specialized programs of care for brain injury survivors typically focus around the medical model of care (Nochi, 1998a; Klinger, 2005). Although brain injury survivors have reported a change in identity after a brain injury as an area of concern (Nochi, 1998b; Tyerman & Humphrey, 1984), treatment plans involve the rehabilitation of physical injuries followed by interventions to facilitate the recovery from emotional disruptions (Miller, 1993; Pollack, 1994).

Christiansen (1999, 2004) posited identity is constructed as we participate in occupations and make daily occupational choices. Further participation in occupations is an important component of maintaining general wellbeing (Christiansen, 1999). Other theorists elaborated the interrelationship between occupation and identity and began to use the term occupational identity (Kielhofner, 2002; Unruh, Versnel, & Kerr, 2002).

1.2 Occupational Identity

The term occupational identity was defined by Kielhofner (2002) as a "Composite sense of who one is and wishes to become as an occupational being generated from one's history of participation." (p. 120). The concept of occupational identity, however, is sparsely represented in the literature base on brain injuries. For instance, a recent scoping review yielded no published articles (Bryson-Campbell, Shaw, O'Brien, Holmes, & Magalhaes, 2013). Further study of occupational identity is essential to better understand the role occupation plays in daily life

(Christiansen, 2004) but also to explicate how occupational identity changes in response to a disruption in our ability to participate in occupations deemed meaningful.

Vrkljan and Miller Polgar (2007) suggested that occupational identity may shift as a result of a change in occupational participation. Shaheed Soeker (2011) demonstrated an inability to participate in meaningful occupations decreases quality of life. Moreover, Braveman, Kielhofner, Albrecht & Helfrich (2006) found that when there is an inability to take part in meaningful occupations an individual's occupational identity may also change. The change to occupational identity may stem from a shift in occupational aspirations and/or occupational goals (Braveman et al. 2006). A reduction in occupational interests and goals can lead to lower levels of occupational participation (Shaheed Soeker, 2011) and to depressed thoughts (Vrkljan & Miller Polgar, 2007).

Brain injury survivors typically experience a change in their ability to conduct meaningful occupations (Klinger, 2005), especially work (Yasuda, Wehman, Targett, Cifu, & West, 2001). The conceptual links between occupational identity and changes in participation are noted in the literature by Vrkljan and Miller Polgar (2007) and others (Martin, Smith, Rogers, Wallen, & Boisvert, 2011; Wilson, 2010) however, the knowledge base on persons with brain injury has focussed more on return to work outcomes (Corrigan et al. 2007) than occupational identity. Cotton (2012) noted the re-development of occupational identity is not considered in rehabilitation models that guide interventions and thus little is known about the impact of a brain injury on occupational identity and the links with returning to or resuming productive work.

As early as 1994, Dikmen et al. reported poor psychosocial adjustment if a return to work is not achieved. McNamee, Walker, Cifu, and Wehman in 2009 found returning to meaningful employment can enhance self esteem, financial status, and quality of life for brain injury

survivors. For many individuals who are unable to resume their former productive occupation due to an unexpected life disruption, a sense of personal loss and grief may ensue (Unruh, 2004). Thus, the personal impact of not returning to work after a brain injury may be negative for some individuals (Dikmen et al. 1994; Unruh, 2004). Therefore, examining the shifts in occupational identity and the relationship to returning (or failing to return) to productive occupations may reveal further insights into occupational identity and the importance of this knowledge for enhancing rehabilitation interventions.

1.3 Statement of Dissertation Purpose and Research Questions

Although previous research has examined self identity following a brain injury (Lewington, 1993; Nochi, 1998a; Pollack, 1994), to date little empirical evidence exists describing the process underscoring a shift in occupational identity after a brain injury and the post injury occupational identity (Bryson-Campbell et al. 2013). Highlighted in a recent publication, Cotton (2012) posited "Although occupational therapy scholars have studied the topic of identity, there appears to be a gap in the education and research literature regarding the topic of post-TBI occupational identity disruption" (p. 270).

To that end, the purpose of the current dissertation was threefold. The first purpose was to expand the understanding and the nature of the reality and assumptions (ontology) of occupational identity. Secondly, this dissertation examined the potential of using various research methods with brain injury survivors to explore shifts in occupational identity. Finally, the third purpose was to examine the process underpinning a shift in occupational identity and the influence of returning to paid or unpaid work after a brain injury.

By further understanding the process of the shift in occupational identity this dissertation contributes to the growing knowledge base of occupational identity and the process that occurs

after a disruption to occupational identity. To facilitate this exploration of the shift in occupational identity the following research questions were used to guide the research studies:

1. What are the characteristics of occupational identity re-development that individuals describe undergoing following a brain injury?

2. Is there a difference in occupational identity for brain injury survivors who returned to work compared to those who did not return to work? It is hypothesized brain injury survivors who returned to paid or unpaid work will have higher scores on the occupational identity scale of the Occupational Performance and History Interview-II compared to those who did not return to paid or unpaid work.

1.4 Situating the Researcher in the Study

1.4.1 The Brain Injury Rehabilitation Program

The researcher leading the current studies completed a Master's in Human Development. Upon completion of this degree the researcher worked as a behaviour therapist with individuals who sustained a traumatic brain injury. During this time it was noted the important role of occupations in the everyday lives of the survivors. Many of the survivors were unable to maintain the pre injury lifestyle to which they were accustomed. The model of care we used focussed primarily on the rehabilitation of physical injuries and cognitive impairments and the remaining time was spent re-developing life skills. Onus was placed on the survivor to develop adaptations to partake in occupations that were once deemed meaningful as is common in rehabilitation models (Klinger, 2005).

There seemed to be a lack of emphasis placed on understanding the process that unfolds as the survivor re-develops occupational goals. The researcher questioned whether the knowledge base available to clinicians partaking in brain injury rehabilitation explored the issue of the re-development of occupational goals after a brain injury. Or if the knowledge base explored the impact of re-developing occupational goals on identity.

Within the study of occupation are several theorists who described an explicit connection between occupation and identity (Christiansen, 1999; Unruh, 2004) and the construct known as occupational identity (Kielhofner, 2002). But many gaps persisted as to the underlying nature of occupational identity and the impact of a brain injury on occupational identity. Thus, with an educational background in psychology and occupational science the journey to explore occupational identity began.

1.4.2 Researcher Perspective

The researcher utilized a pragmatic perspective to guide the methodological decisions of the study.. According to Creswell and Plano Clark (2011) pragmatism focuses on the importance of the research question and takes advantage of multiple ways of understanding the research question. Pragmatism relies on participant views to generate theory and participants are often considered members of the research team (Creswell & Plano Clark, 2011). Accordingly the direct quotes taken during participant interviews are used to generate multiple perspectives on knowledge and concepts. The perspective of a brain injury survivor can provide details on the personal experience in adapting to new occupations and can facilitate an understanding of the shift in occupational identity after a brain injury.

The epistemological perspective reflected in the current study is one that recognizes the influence of personal values in research. Researchers have the ability to influence study

outcomes by the type of interview questions and how they are asked. Throughout the data collection and analysis process it was important to remain cognisant of personal values and beliefs by reviewing field and code notes taken during the participant interviews. The purpose of reviewing the field and code notes taken during the interview and analysis stage was to remain mindful of statements and thoughts that were in part reflective of values and beliefs.

1.5 Organization of Dissertation

This dissertation is organized in an integrated article format beginning with an introductory chapter (Chapter 1) and literature review chapter (Chapter 2), followed by three separate articles. Chapter 2 reviews the literature on occupational identity and explores the perspectives of development of occupational identity presented by authors in occupational science. The relationships underpinning a shift in occupational identity are utilized to suggest that brain injury survivors experience a disruption in occupational identity due to physical and cognitive impairments and changes in occupational participation.

Chapter 3 focuses on the overall study methods and is a discussion of the mixed methods approach (Creswell & Plano Clark, 2011) adopted for the current study due to the multiple research questions and the complexity that can be associated with research with brain injury survivors. The chapter continues with a discussion on the methods utilized to explore shifts in occupational identity.

The first article (Chapter 4) details the exploration of the shift in occupational identity articulated by brain injury survivors through grounded theory analysis (Corbin & Strauss, 2008). This article begins with a brief introduction and methods section and followed by the results and discussion. Following this article, the second article (Chapter 5) describes a review of an assessment measure called the Occupational Performance and History Interview-II (Kielhofner et

al. 1998) conducted with brain injury survivors to be utilized in a future study. The third article (Chapter 6) describes a quasi-experimental, ex-post facto (Montero & Leon, 2007) study designed to examine if there is a significant difference in occupational identity scores, as measured by the Occupational Performance and History Interview, between survivors who returned to work and those who did not return to work. The final chapter disseminates the main contributions of the research studies and concludes with a discussion of themes generated from the integration of the knowledge gained from each of the two studies and the implications for further advancing the knowledge.

1.6 Summary

This introductory chapter sought to demonstrate the overall purpose of the dissertation beginning with a discussion of the current focus in the area of occupational identity. As evident in the current literature the focus of rehabilitation programs tends to center upon the rehabilitation of physical injuries (Nochi, 1998a; Klinger, 2005) and less on identity re-development (Cotton, 2012) after a brain injury. Therefore, the gap in the scope of rehabilitation programs and interventions may be lessened through advancing the knowledge base on occupational identity re-development after a brain injury. Positive outcomes are associated with re-engaging in meaningful activities after a brain injury (Niemi & Johansson, 2013) therefore, facilitating brain injury survivors to re-engage in meaningful occupations may be beneficial.

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Chapter 2 Theoretical Background

2.1 Introduction

This chapter explores and discusses the theoretical perspectives and empirical knowledge presented in the occupational science literature relevant to the shift in occupational identity. The chapter concludes with an appraisal of the applicability of this knowledge for a brain injury survivor and a review of the gaps in the conceptual knowledge of occupational identity that require further explication and understanding.

A scoping review of the literature by Bryson-Campbell, Shaw, O'Brien, Holmes, and Magalhaes (2013) examined occupational identity and the perspective utilized to explore occupational identity. The review identified two main perspectives, Interpretivist and Critical (Crotty, 1998) utilized by authors when exploring occupational identity. The Interpretivist framework was used by several authors in occupational science: Braveman, Kielhofner, Albrecht, & Helfrich, 2006; Christiansen, 1999; Cotton, 2012; Martin, Smith, Rogers, Wallen, & Boisvert, 2011; Unruh, 2004; Vrkljan & Miller Polgar, 2007; Wilson, 2010. The Interpretivist framework explored the construction of occupational identity with a specific focus on the relevance of personal and social relationships. A Critical framework was used by Laliberte Rudman and Dennhardt (2008) and Phelan and Kinsella (2009). These authors appraised how the construction of an occupational identity is shaped by society.

In this chapter, the Interpretivist and Critical frameworks are used by the author of the dissertation to reveal what is known about the relationships that support the re-development of an occupational identity. The knowledge on the relationships and/or factors relevant to occupational identity were then used to provide insights into how brain injury survivors may

experience difficulty re-developing an occupational identity and to argue for further exploration of the shift in occupational identity after a disruption.

Within the Critical and Interpretivist frameworks there were three relationships that mapped onto the re-development of an occupational identity and are pertinent to brain injury survivors. These relationships include: the relationship between re-engagement in meaningful occupations and occupational identity development and the relationship between occupational competence, which is an individual's level of effectiveness in managing and engaging in occupations (Christiansen, 1999) and occupational identity development. Finally, the third relationship considered was the role of occupational adaptation on occupational identity development.

Past research has not specifically explored the role of re-engagement in occupations, competence, and occupational adaptation on re-developing occupational identity after a brain injury. However, the relationship of these factors to occupational identity may be especially pertinent for brain injury survivors. For instance, brain injury survivors experience a decrease in occupations and occupational choices (Klinger, 2005), a decrease in competence (Shaheed Soeker, 2011) and may therefore experience difficulty in these areas necessary to support the re-development of occupational identity. The following section begins with an exploration, based on previous research, of the relationships that support the re-development of an occupational identity.

2.2 Interpretivist Framework

The Interpretivist perspective is based on a belief that the generation of information is based upon an individual's interpretation of everyday interactions in the context of societal and cultural influences (Crotty, 1998). Previous authors in occupational science have examined the

construction of identity and occupational identity with a focus on the relevance of social and personal relationships (Braveman et al. 2006; Christiansen, 1999; Cotton, 2012; Martin et al. 2011; Unruh, 2004; Vrkljan & Miller Polgar, 2007; Wilson, 2010). The social relationships discussed by these authors have centered on how our occupational experiences with society, occupational choices made on a daily basis, and the physical environment impact development of occupational identity.

Braveman et al. (2006) suggested that resuming paid employment can increase occupational identity and occupational competence after a diagnosis of HIV/AIDS. Participants were administered the Occupational Performance and History Interview-II (Kielhofner et al. 1998) to measure occupational identity, occupational competence, and occupational settings. After experiencing success returning to work participant's level of occupational competence and occupational identity increased. Braveman et al.'s study suggested that occupational identity can be re-developed after a major life disruption. The re-development of occupational identity progressed forward upon reflection and recognition of the shift in one's abilities after re-engaging in meaningful occupations. However, for brain injury survivors, it is unclear if reflection and re-engagement in occupations are key mechanisms of occupational identity re-development.

Cotton (2012) suggested that re-engagement in meaningful occupations may play an important role in re-developing occupational identity after a brain injury. Cotton did not, however, examine the mitigating role of contextual factors in occupational identity re-development but suggested that the occupational therapist can play a key role in supporting a brain injury survivor to re-build an occupational identity.

Cotton (2012) created a case study based on a compilation of the literature of adults with traumatic brain injury as well his own vocational experience. The main purpose of Cotton's article was to examine the role of occupational therapists when supporting brain injury survivors to re-develop an occupational identity. Similar to Braveman et al. (2006), Cotton noted the importance of supporting clients to re-engage in meaningful occupations when re-developing an occupational identity. The male participant in Cotton's article discussed the shift in his occupational role as follows: "My life is horrible. I've probably lost my job..." (p. 277). Cotton noted this seemed to express the disruption experienced in the participant's occupational identity, based in part on a change in his occupational roles.

The participant in Cotton's (2012) study also noted that the occupational roles to which he aspired would increase his autonomy and sense of control, both of which were important to him. The role of values in influencing occupational choices was also discussed by Martin et al. (2011) who suggested that values and beliefs can play a role in deciding what occupations to take part in because values and beliefs can impact on occupational choices. Martin et al. explored how factors such as values and beliefs and together with our environment can influence the occupations we chose.

Martin et al. (2011) chose a narrative inquiry methodology and explored the occupational performance of mothers recovering from addiction. Martin et al. found the participants underwent a shift in their occupational identity along the path to recovery. The change in occupational identity was articulated in narrative interviews by two participants. One participant, for example, spoke about experiencing a shift in her mothering role "...now it's to the point where I'm not even a mother, I'm just an addict" (p. 156). A second participant spoke about her view of herself in her role as a mother, "Somehow I managed to be a mom, but not a very good

one" (p. 156). Both of these participants' narratives suggest a change in occupational identity can center on a disruption in the ability to perform meaningful roles.

Participants noted that the role of an addict was developed in part because of the environment they were in, referred to as a "toxic environment" (Martin et al. 2011, p. 155). Thus, it was important for the participants to select occupational roles that were congruent with their values and create a different physical environment. For example, creating new social networks and environments, such as avoiding locations where illicit substances were available, may have facilitated the re-development of a positive sense of occupational identity. However, further research is necessary to examine if re-engagement in adaptive occupations can also facilitate the re-development of occupational identity after a brain injury.

The importance of the physical environment on re-developing occupational identity has been further elucidated by Wilson (2010). Wilson utilized an autoethnographic approach and discussed the ramifications to occupational participation, occupational identity, and social consequences following personal surgery for weight loss. Similar to Martin et al. (2011), Wilson noted a shift in her occupational identity due to a change in her daily occupations and her interactions with others. The physical environment was more accessible and her energy and time had increased due to a decrease in her weight and both of these factors lead to an increase of occupations and shifts in occupational identity.

Wilson's (2010) findings suggested that the re-development of an occupational identity is based not only on what we do on a daily basis but also what occupations are available. If the availability of occupations is indirectly related to re-development of occupational identity this has implications for individuals who have limited choice in occupations due to disability or life

circumstances. The role of availability of meaningful occupations on occupational identity was also discussed by Vrkljan and Miller Polgar (2007).

Vrkljan and Miller Polgar (2007) explored the transition from being able to drive, to no longer having the ability to drive on occupational identity. The case study analysis by Vrkljan and Miller Polgar highlighted the role of choice and availability of occupations on shifting occupational identity. Similar to the findings by Martin et al. (2011) the participant noted a decrease in participation in meaningful occupations and a loss of roles due to the inability to drive. The loss of occupational roles seems to have had an impact on occupational identity as the participant noted, "My world is a different place with the ability to drive...I can't do nothing...it means I just sit and try to kill time trying to watch television" (p. 33). The participant's lack of control and choice over his occupations also seems to have impacted his occupational identity, "I enjoyed going to visit my daughter and grandchildren on a whim, but now that I can't drive and with them so busy, I maybe get to see them once every couple of weeks" (p. 34).

For the participant in Vrkljan and Miller Polgar's (2007) study occupational identity was disrupted due to a decrease in choice and participation in occupations. Previous empirical research, however, has yet to explore if experiencing a decrease in choice of occupations can impair the re-development of occupational identity after a brain injury. Howie et al. (2004) however did explore if a change in the type of occupation can positively affect occupational identity.

The focus of the narrative inquiry by Howie et al. (2004) was to examine the impact of occupations, other than paid employment, on shaping occupational identity. Howie et al. specifically focussed on crafting occupations such as woodcrafting, painting, papermaking, handknitting, making Tiffany lampshades, spinning, and weaving for six older individuals. Upon

reflection, participants described relationships with others while engaging in their crafts as important. Participants described an occupational identity that was defined by others based on their type of craft. For instance, one participant spoke about being known to others as “an artist” (p. 450) because she engaged in papermaking. This relational aspect of their crafting occupations seemed to influence the re-development of a new occupational identity.

Similar to Braveman et al. (2006) the study by Howie et al. (2004) suggested that participants gained an awareness of their sense of self upon reflecting on their crafted objects. One participant in particular indicated, upon reflection of her papermaking craft, “I am an earth person...I’m born under an earth sign” (p.452). Howie et al.’s findings emphasized the role of relationships formed during engagement in leisure occupations may shape occupational identity.

These findings by Howie et al. (2004) also suggested a positive relationship may exist between re-engagement in leisure occupations and re-developing an occupational identity. A positive relationship between leisure occupations and the re-development of occupational identity may be important to consider for those who experience difficulty returning to paid occupations. Brain injury survivors, for instance, often experience difficulty returning to former occupations (Shaheed Soeker, Rensburg, & Travill, 2012) and may need to re-engage in unfamiliar leisure or other types of occupations that can be physically and cognitively conducted.

2.2.1 Interpretivist Perspective Summary

Authors using the Interpretivist framework to explore the development of occupational identity noted a relationship between the re-development of occupational identity and relationships with others (Howie et al. 2004). Other authors such as Braveman et al. (2006) and Wilson (2010) suggested a link between occupational identity re-development and environmental factors such as the impact of the environment. Finally, Vrkljan and Miller Polgar (2007) noted

the role of choice on re-engaging in occupations. The relationships considered were, however, exploratory in nature and did not offer multiple perspectives on the study of re-development of an occupational identity. Also, the influence of other societal issues such as a lack of accessible occupations and cultural obligations was not considered in this framework. The Critical perspective, in contrast, presented throughout the occupational science literature explored the development of occupational identity through a more critical and challenging lens and considered the role of society and culture on the relationships that support the re-development of occupational identity.

2.3 Critical Framework

A Critical approach was used to explore occupational identity in the occupational science literature. Under a Critical theory approach, knowledge construction is viewed under scrutiny and the impact of created knowledge on systems and social relations in society is explored (Crotty, 1998). Two groups of authors in particular have examined occupational identity with a critical lens (Laliberte Rudman & Dennhardt, 2008; Phelan & Kinsella, 2009).

Laliberte Rudman and Dennhardt (2008) and Phelan and Kinsella (2009) explored the development of occupational identity in relation to broader social, political, and cultural relationships. Unlike much of the research presented within the Interpretivist framework both articles are conceptual papers. The authors present a critical view of how the underpinnings of occupational identity development can be further understood and, as such, offer important information relevant for examining and furthering the understanding of the complex process of the re-development of an occupational identity.

Laliberte Rudman and Dennhardt (2008) explored the construction of occupational identity utilizing a critical approach to explore how cultural variations could be useful to

examine the construction of occupational identity. The authors present a framework for exploration of occupational identity that involves a more culturally oriented view of occupational identity. Laliberte Rudman and Dennhardt argued the current conceptualization of how occupational identity develops has been shaped by a Western point of view which is individually oriented and goal oriented. Furthermore, the authors propose that examination of occupational identity within a cultural framework enables the expansion of occupational identity, as well as, the study of occupation.

Phelan and Kinsella (2009) further critically appraised the construct of occupational identity in light of social and cultural relationships. Similar to Laliberte Rudman and Dennhardt (2008) they noted the view of occupational identity has been structured using a Western viewpoint based upon productivity and choice and suggests that individuals choose occupations based upon personal interests and goals as opposed to family or cultural obligations. Further to this, Phelan and Kinsella suggested occupational identity development is influenced by occupation choices and if the occupation is valued by society. Suggesting that exploration of occupational identity should be based upon a broad range of social-cultural relationships such as what can inhibit our choice of occupations (i.e. disability, family obligations, notions of productivity) to ensure a complete picture of occupational identity emerges. Exploring occupational identity while remaining cognisant to factors that can decrease occupational choices may be especially important when conducting research with brain injury survivors who may be vulnerable to experiencing a decrease in occupational choices (Klinger, 2005).

Overall, utilizing a critical lens Laliberte Rudman and Dennhardt (2008) posited that inequalities in society can decrease our choice in occupations which would impact upon the development of occupational identity. Phelan and Kinsella (2009) added that cultural values and

family expectations can enhance or limit occupational choices and can therefore shift occupational identity. To date, the relationships that impact upon our contextual factors and choice in occupations has received little attention in the brain injury literature. Thus, there is limited information regarding how the lack of choice before and after a brain injury plays a role in the development of an occupational identity.

2.3.1 Critical Perspective Summary

Authors using the Critical framework to understanding occupational identity (Laliberte Rudman & Dennhardt, 2008; Phelen & Kinsella, 2009) offer a different view than authors using an Interpretivist perspective (Braveman et al. 2006; Cotton, 2012; Howie et al. 2004; Martin et al. 2011; Vrkljan & Miller Polgar, 2007; Wilson, 2010). Authors using a Critical view to explore occupational identity encouraged consideration of the social structures that can potentially create a constraining relationship (family relationships, occupational choice) with occupational identity development.

Occupational identity development was presented as being influenced by contextual factors such as choice (Vrkljan & Miller Polgar, 2007), re-engagement in occupations (Braveman et al. 2006), and may be related to the development of competence (Braveman et al. 2006; Shaheed Soeker, 2011). Future research that seeks to examine the re-development of occupational identity needs to consider the contextual relationships that can affect the re-development of occupational identity. Therefore, when considering how an individual who experiences a brain injury re-develops an occupational identity it will be important to explore the constraining social and personal factors to fully support the individual to adjust their occupational identity.

Overall, there is a dearth of knowledge in the current brain injury literature regarding how the relationships between occupational identity and choice and/or competence impact brain injury survivors. Thus, the following section discusses the potential relevance of relationships such as choice and competence to the re-development of an occupational identity for brain injury survivors.

2.4 The Implications for Brain Injury Survivors

Several of the relationships suggested by authors in occupational science may be salient to the experiences of brain injury survivors noted in the literature. For instance, the relationship of choice, re-engagement in occupations, and developing competence were suggested throughout the literature as being instrumental in re-developing occupational identity (Braveman et al. 2006; Wilson, 2010). The following section explores the literature on brain injury survivors who experienced a lack of choice or competence in occupational roles as well as, the concept of occupational adaptation (Klinger, 2005; Shaheed Soeker, 2011) and its potential relationship to occupational identity.

2.4.1 The Role of Choice

The ability to choose an occupation can depend on mitigating relationships which may enable or constrain occupational choices (Galvaan, 2012). The role of choice and the significance of environmental relationships have been highlighted in a recent study by Galvaan. Galvaan's study can facilitate an understanding of the difficulty a brain injury survivor may experience when attempting to re-engage in occupations.

According to Galvaan (2012) choice plays an important role in occupations that is underscored by the mitigating impact of social and/or cultural relationships. Galvaan noted that

"Choosing occupations...is a complex, socioculturally situated matter: at any moment what an individual chooses to do is influenced by a myriad of relationships ranging from the individual (such as skills levels) to the extrapersonal (such as resource availability)" (p. 152). Galvaan employed a critical ethnography approach and explored the role of choice in a marginalized population in South Africa. Participants described relationships such as living situation and the inaccessibility of financial resources as contributing to a decrease in choice of occupations and a decrease in engagement in daily occupations. In a parallel way, brain injury survivors may also face inequalities and a decrease in choice of occupations.

Brain injury survivors experience difficulty re-engaging in meaningful occupations such as paid work (Yasuda, Wehman, Targett, Cifu, & West, 2001). This inability to return to work can create financial difficulty for brain injury survivors (Abrams, Barker Toms, Haffey, & Nelson, 1993) which can limit the choice of occupations. Also, many brain injury survivors experience alcohol or drug abuse (Ylvisaker & Feeney, 2000), have labels imposed by society (Nochi, 1998) and exhibit severe cognitive or physical impairments (Ylvisaker & Feeney, 2000). These factors also may limit occupational choices and the ability to engage in meaningful occupations.

Overall, brain injury survivors' may be susceptible to experiencing a lack of occupational choices due to coping strategies, personal capacities, and lack of suitable work opportunities that match with their changed abilities. A lack of occupational choices may lead to disengagement from occupations or engaging in occupations that fit within abilities, instead of what brings meaning, which may make it difficult for a survivor to re-develop an occupational identity. However, whether or not brain injury survivors experience a lack of choice of occupations and if this lack of choice impacts on re-developing occupational identity after a brain injury requires

further study to support this conclusion. Similarly, Braveman et al. (2006) and Christiansen (1999) suggested a decrease in competence to perform occupational roles may also make it difficult to re-construct occupational identity.

2.4.2 The Role of Competence

Christiansen (1999) posited that as we experience success in what we are doing we are able to gain competence in our occupational roles. Likewise, if we are unable to meet our own expectations of success our sense of coherence or our view that our life is meaningful and manageable may decrease. Braveman et al. (2006) suggested future research should examine the potential link between gaining competence in an occupational role and establishing a positive occupational identity.

Brain injury survivors, however, often experience cognitive and physical impairments (Keyser-Marcus et al. 2002) which can make maintaining a competent role in a meaningful occupation challenging (Shaheed Soeker, 2011). Shaheed Soeker found that after a brain injury maintaining an occupational role can be difficult. One participant spoke about the difficulty he experienced when he was expected to upgrade his certification to maintain his paid occupation, "I have to do engineering maths to get my red seal (license) back…because otherwise they're not going to give me any work like that. I've lost a lot of it..." (p. 85).

Klinger (2005) suggested that if a brain injury survivor feels he/she is unable to be a competent performer in their own lives this can result in occupational dysfunction. Occupational dysfunction was defined by Whiteford (2000) as an inability to maintain engagement in occupations due to external circumstances for an extended period of time. If occupational dysfunction does occur the survivor would experience difficulty engaging in meaningful occupations and may experience a decrease in competence in occupational roles. Thus, the

impact of a brain injury on an individual's competence in engaging in occupations may disrupt the re-development of occupational identity.

Exploring the role of adapting to meaningful occupations to increase occupational engagement may then be an important part of understanding how brain injury survivors can re-develop an occupational identity. Future work is needed to support the understanding of the relationship between occupational adaptation and occupational identity. The past research exploring how brain injury survivor's work to re-engage in meaningful occupations (Klinger, 2005) only briefly suggested how this process, known as occupational adaptation, is linked to the process of re-developing occupational identity. Klinger suggested:

> The profound changes these participants experienced in their sense of self, however, as a result of the experience of having a brain injury seem to fit well with Kielhofner's notion of occupational identity (that is, the "being") as a component that interacts with occupational competence (that is, one's sense of satisfaction at being able to engage in valued occupations) to arrive at occupational adaptation (p. 14).

2.4.3 The Role of Occupational Adaptation

Kielhofner (2002) posited that there is a link between occupational identity and occupational adaptation when he described occupational adaptation "as the construction of a positive occupational identity and achieving occupational competence over time in the context of one's environment" (p.121). Kielhofner supported the idea that the process of occupational adaptation can be used to further understand occupational identity.

Literature discussed in the preceding section also supported the notion of a link between occupational identity and occupational adaptation (Braveman et al. 2006; Cotton, 2012). Both

Braveman et al. and Cotton found that participants who adapted to re-engage in occupations were able to develop competence in their occupational role and develop a positive sense of occupational identity.

Two authors have explored the concept of occupational adaptation in relation to brain injury survivors (Klinger, 2005; Shaheed Soeker, 2011). Klinger employed qualitative research methods and conducted interviews with seven brain injury survivors. The interview data was examined for themes and five main themes emerged from the analysis. Participants felt after their brain injury they were different people who had to engage in new occupations and this affected who they were as a person.

One participant remarked "The way your body functions has changed, the way your habits has (*sic*) changed...So that kind of [is] how you have to become a new person, because the things you focus on are different" (p. 12). Participants also noted that to move forward they had to accept the changes that occurred. One participant said, "There is a big step of acknowledgement that has to happen...you have to acknowledge that you need to find new things..." (p. 12).

A crucial step to the process of occupational adaptation was accepting the new abilities and accepting that the new abilities had created a change in what occupations could be accomplished. One participant articulated this well when he noted, "So I guess that's kind of what strategies are, developing that new way of doing things" (p. 13). Klinger (2005) used the participant's accounts to suggest the interaction between occupational identity and occupational competence facilitated the process of occupational adaptation.

As brain injury survivors attempt to return to former occupations they likely experience difficulty due to changes in physical and cognitive abilities (Yasuda et al. 2001). Due to

functional limitations, the brain injury survivor may find it necessary to adapt to new occupations to successfully re-engage in occupations (Shaheed Soeker, 2011). The process of occupational adaptation is likely a step in the process of re-developing an occupational identity. However, future research is necessary to support the relationship between occupational identity and occupational adaptation.

A publication by Shaheed Soeker (2011) also points to a provisional relationship between occupational adaptation and occupational identity development after a brain injury. In-depth interviews were conducted with ten brain injury survivors, all of whom had returned to work since injury. Similar to Klinger (2005) and Nochi (1998), Shaheed Soeker's participants described "A sense of loss of former self" (p. 84) after their brain injury. One participant noted, "You are perfect in the job but your pace is very slow and you can't make production...They ask what happened to you..." (p. 84). To accept the sense of loss one participant spoke about having to accept what happened and move forward stating, "...I will just have to work. Although sometimes you feel tired but if you think about your family, you are the breadwinner for your family" (p. 86). Participants had to modify their way of engaging in occupations and re-build feelings of competence in what they were doing.

Both Klinger (2005) and Shaheed Soeker's (2011) articles highlighted the importance of supporting brain injury survivors as they re-engage in new occupations that can be physically and cognitively accomplished. Accepting new abilities and new occupational roles were identified as key steps to re-building occupational adaptation. Successfully re-engaging in meaningful occupations can build a positive view of self and may facilitate the re-development of a positive occupational identity.

2.4.3.1 Section Summary. Klinger (2005) and Shaheed Soeker (2011) articulated the process of occupational adaptation for a sample of brain injury survivors. The process of occupational adaptation seemed to involve the development of a sense of mastery in new occupations, as well as, creating occupational goals for the future. Although Klinger (2005) suggested there is a relationship between occupational competence, occupational identity, and occupational adaptation there is little empirical evidence to support such a relationship. Future research needed to advance the knowledge base will need to examine the link between these constructs. Future examination should include the impact of different outcomes such as, if competence is not re-established or if there is limited occupational choice, on re-developing occupational identity.

Within this chapter the knowledge base of occupational science was examined to uncover the relationships that facilitate the re-development of occupational identity. Several relationships were suggested as underscoring the process of re-developing occupational identity. This literature was used to suggest why brain injury survivors might experience difficulty re-developing an occupational identity. Given the evolution of concepts in the literature two figures are used to summarize and synthesize the current knowledge and relationships that underscore a shift in occupational identity, as well as, the relationships underpinning the re-development of an occupational identity.

2.5 Graphic Portrayal of Re-developing Occupational Identity

Figure 2.1 and Figure 2.2 have been developed to represent a synopsis of the literature on occupational identity. These figures may be used as a starting point for further exploration of constructs and relationships in occupational identity after a major occupational disruption. Figure 2-1 demonstrates the relationships underpinning a shift in occupational identity. Previous authors

have suggested occupational identity is disrupted after a life transition due to a decrease in occupational engagement and a loss of roles (Vrkljan & Miller Polgar, 2007) that can disrupt occupational performance and competence (Braveman et al. 2006).

Figure 2-2 portrays the process underscoring the re-development of occupational identity. Authors have suggested the re-development of occupational identity is facilitated by the re-engagement in meaningful occupations (Braveman et al. 2006) and a greater availability of occupations (Howie et al. 2004; Martin et al. 2011). Recognizing limitations and abilities through self awareness (Shaheed Soeker, 2011; Wilson, 2010) can assist in the process of occupational adaptation, which is linked to the process of re-building occupational identity (Klinger, 2005).

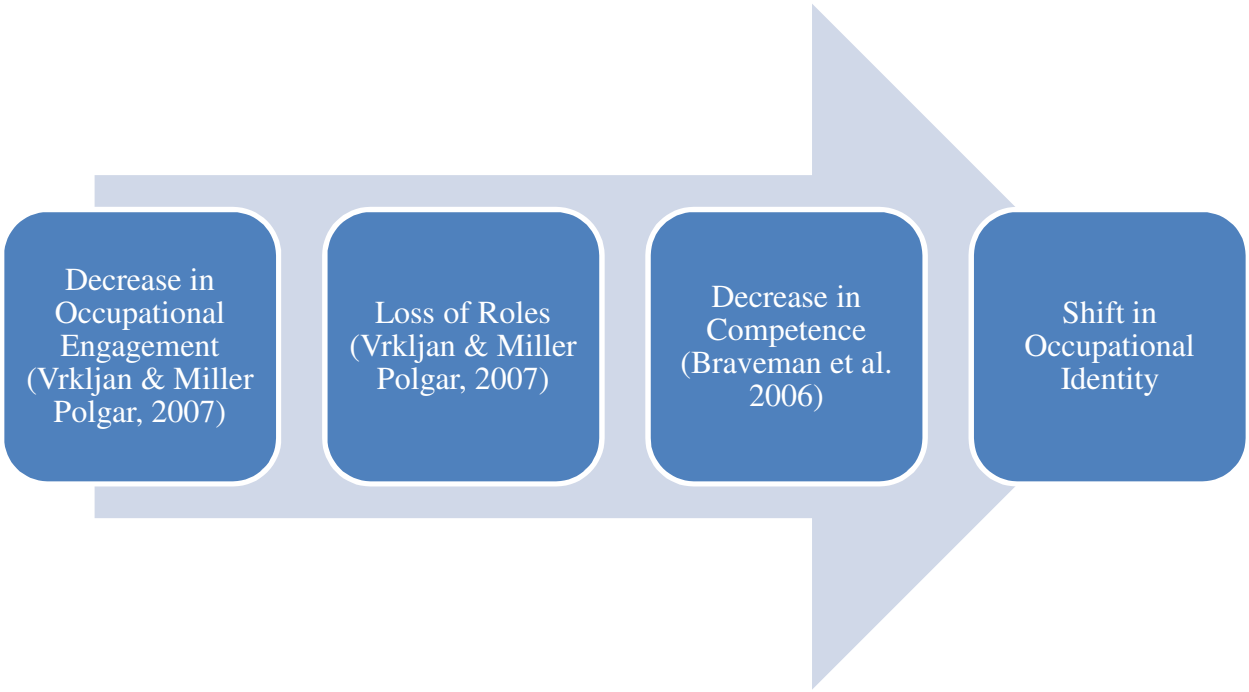

Figure 2-1 Pictorial depiction of the relationships underpinning a shift in occupational identity

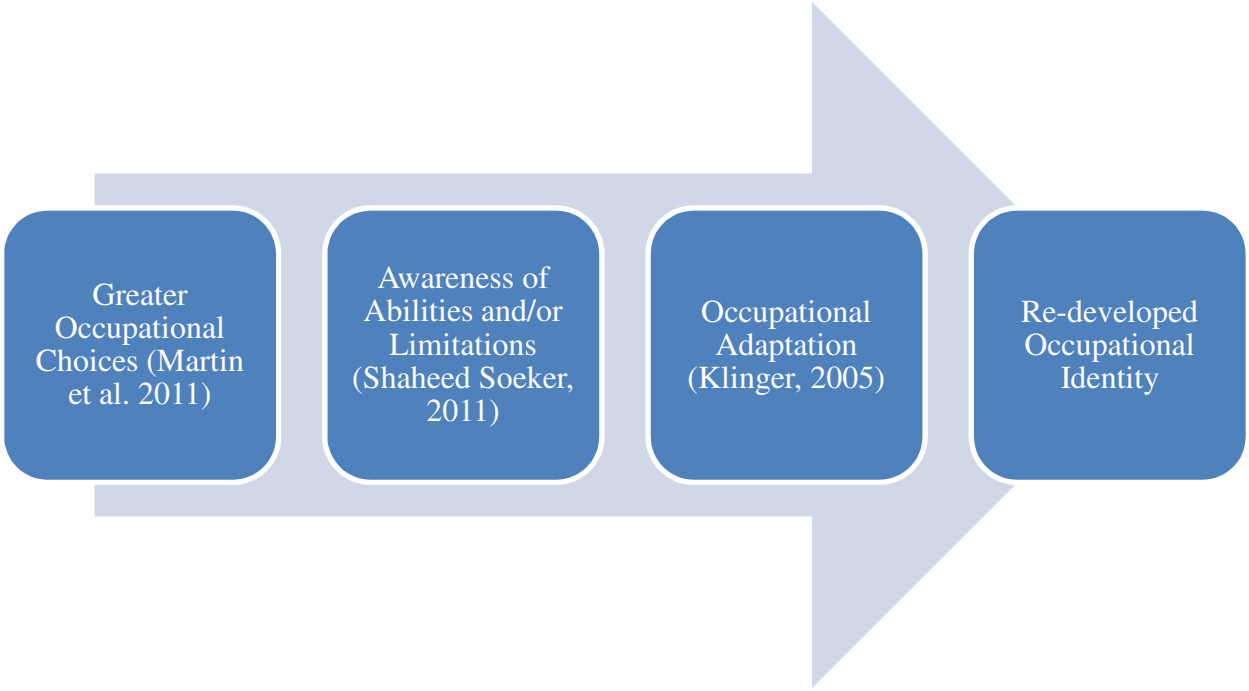

Figure 2-2 Representation of the relationships facilitating the re-development of occupational identity

2.6 Gaps in the Knowledge Base on Occupational Identity

This review and critique of the literature revealed the evolution of occupational identity and some of the relationships that support the re-development of occupational identity. However, this review also revealed gaps based on the critique and analysis of the literature.

Through much of the development of occupational identity in the occupational science literature, the discourse centered upon extracting the underpinnings of occupational identity and exploring the impact of a disruption to occupational identity. Two articles (Laliberte Rudman & Dennhardt, 2008; Phelan & Kinsella, 2009) specifically expressed the growing need to further advance our understanding of occupational identity by examining occupational identity in relation to contextual relationships. Furthermore, it may be important to consider the role of choice and competence when engaging in occupations (Vrkljan & Miller Polgar, 2007; Wilson, 2010), as brain injury survivors are likely negatively affected by a decrease in both of these

areas. The current literature has not fully examined the implications to occupational identity of the lack of choice or the inability to develop a sense of coherence after a life disruption.

Klinger (2005) suggested occupational identity and competence may support individual occupational adaptation. However, the relationship between these constructs has yet to be fully explored to support or refute Klinger's assertion.

Further understanding of the process underscoring the shift in occupational identity after a brain injury is needed to deepen the knowledge of constructs and their relationships to the re-development of occupational identity. Knowledge on the re-development of occupational identity can provide insights into ways to enhance rehabilitation processes to support brain injury survivor's re-engagement in meaningful occupations and re-develop an occupational identity.

This review of the literature also revealed that two frameworks have been used to examine occupational identity and that it is a complex construct. The process of re-developing occupational identity requires a pluralistic approach using different theoretical perspectives and methodologies to explicate the situated nature of shifts in occupational identity. The occupational science literature has presented various accounts of how occupational identity changes in response to a life disruption. However, what is omitted is an exploration of the process underscoring the shift in occupational identity from the point of view of the individual. Thus, future research is needed to explore the contextual relationships that can potentially underpin the re-development of an occupational identity from the perspectives of persons with brain injuries.

2.7 Directions of Research in this Dissertation

Little has been published to represent the voices of brain injury survivors and their perspective on the re-development of occupational identity. Perspectives of persons with brain injury were included in the research in this dissertation to fill the gap in the research on

occupational identity. Examination of the shift in occupational identity as experienced by persons with brain injury is needed to help explicate the nature of changes as a positive or negative shift.

Given the need to examine shifts in occupational identity and the influence in everyday life a pragmatic worldview underscored this dissertation. A pragmatic orientation views knowledge as the foundation for evolving thoughts on real world issues (Corbin & Strauss, 2008). Thus, to address the gaps in the current knowledge base and create the potential to inform rehabilitation models for survivors of traumatic brain injury an empirical mixed methods study with a pragmatically oriented worldview was designed. The study was designed to explicate how the shift in occupational identity occurs for persons who experience unanticipated occupational losses and disruptions.

The study, further elaborated in Chapter 3, was initiated to address two research questions: The first question, what relationships are involved in the process of a shift in occupational identity from the perspectives of persons with a brain injury? The second question was is there a significant difference in occupational identity for brain injury survivors who return to occupations compared to survivors who did not? These questions were important to consider given the lack of representation of the voice of the brain injury survivor throughout the literature on occupational identity (Bryson-Campbell et al. 2013). Understanding the perspective of brain injury survivors on the shift in occupational identity would also present a dimension that cannot be captured by interviews with family or reviews of medical charts. Comparing the occupational experiences of brain injury survivors who return or do not return to work may afford an opportunity to explore the shift in occupational identity from the standpoint of the individual in relationship to the valued occupation of productive work.

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Chapter 3 Methods

3.1 Introduction

Bryson-Campbell, Shaw, O'Brien, Holmes, and Magalhaes (2013) identified that multiple perspectives were required to understand shifts in occupational identity given the complex nature of this construct. In the previous chapter it was noted that critical and interpretivist perspectives have advanced the knowledge of occupational identity. An additional theoretical viewpoint such as pragmatism was also identified as a potential basis for advancing knowledge to gain a more pluralistic understanding of approaching changes in occupational identity following occupational disruptions after a brain injury.

The following chapter begins with a rationale and description of the theoretical orientation guiding the research study and the use of a mixed methods approach (Creswell & Plano Clark, 2011) to explore the overarching research question, "How do shifts in occupational identity occur from the perspective of persons with brain injuries?" The chapter continues with a discussion on the methodology utilized for two separate studies designed to explore and measure occupational identity.

3.2 Rationale for Pragmatism

Past research in occupational science suggests the re-development of occupational identity is shaped by such factors as perceived level of occupational competence (Braveman, Kielhofner, Albrecht, & Helfrich, 2006) and re-engagement in occupations (Vrkljan & Miller Polgar, 2007). This research also suggests competence and re-engagement in occupations can be affected by external factors that may impede the re-development of an occupational identity. For example, there are several factors that can determine whether an individual is successfully able to re-engage in occupations such as the availability of occupations due to cognitive and physical

limitations (Klinger, 2005; Shaheed Soeker, 2011; Wilson, 2010) or family and cultural obligations (Laliberte Rudman & Dennhardt, 2008). Not surprisingly, brain injury survivors are a group that typically experience difficulty re-engaging in productivity occupations (Yasuda, Wehman, Targett, Cifu, & West, 2001), as well as difficulty re-developing a sense of competence (Shaheed Soeker, 2011). Therefore, research examining shifts in occupational identity should consider the complex interaction of these relationships on shifting occupational identity.

To adequately explore this complex phenomenon a theoretical orientation that can represent this complexity is necessary. Past authors in occupational science have explored occupational identity through an interpretivist lens (Braveman et al. 2006; Cotton, 2012; Martin, Smith, Rogers, Wallen, & Boisvert, 2011; Unruh, 2004; Vrkljan & Miller Polgar, 2007; Wilson, 2010). Exploring shifts in occupational identity through an interpretivist lens can exclude the contextual relationship between occupational identity development and the impact of constraints within society and family structures. Laliberte Rudman and Dennhardt (2008) and Phelan and Kinsella (2009) explored occupational identity through a critical lens but did not focus on the importance of personal relationship in shifting occupational identity. A pragmatic theoretical perspective compliments the critical and interpretive perspective and addresses the contextual relationships noted by these previous authors in occupational science.

Pragmatism has been described as a research paradigm with underlying assumptions that describe knowledge and reality as provisional and that questions the divergence of qualitative and quantitative research (Feilzer, 2010). Pragmatism offers a theoretical foundation for understanding complex human phenomenon and is often the philosophical backdrop in mixed methods research (DeForge & Shaw, 2012).

When exploring the relationships involved in a shift in occupational identity there is value in understanding this phenomenon from the experiences of the individuals who undergo this shift. A brain injury survivor who experiences a disruption in occupational identity can present a different view of this disruption than a family member. A family member can only speak to the nature of a shift in occupational identity in relation to the impact of this shift on them. A pragmatic orientation values the construction of knowledge from the viewpoint of the individual directly involved in the phenomenon (Morgan, 2007). Therefore, a pragmatic viewpoint lends itself to conducting research exploring a complex phenomenon from the perspective of the individual who experiences it.

To adequately explore the perspective of brain injury survivors and also measure shifts in occupational identity a mixed methods approach was selected for the current dissertation. The following section discusses the appropriateness of a mixed methods approach and the particulars of the mixed methods approach utilized in the current dissertation.

3.3 Mixed Methods

Mixed methods design is a statistical methodology involving the collection and integration of qualitative and quantitative data (Creswell & Plano Clark, 2011). Mixed methods design is a methodology that has been adopted in occupational therapy, occupational science and the rehabilitation sciences (Kettles, Creswell, & Zhang, 2011). A mixed methods design, specifically a Fixed Convergent Parallel design, was chosen for the current study as a mixed methods design provides both general (from quantitative methodology) and in-depth and detailed (from qualitative methodology) information to inform a greater understanding about occupational identity and shifts in identity post brain injury.

To lessen gaps in the current knowledge base and elucidate on the shift in occupational identity the current dissertation sought to explore the overarching question, "How do shifts in occupational identity occur from the perspective of persons with brain injuries?" To address this complex overarching question there were two research questions: what relationships are involved in the process of a shift in occupational identity from the perspectives of persons with a brain injury? Is there a significant difference in occupational identity for brain injury survivors who return to occupations compared to survivors who did not? Addressing the two underlying research questions required a methodology suited to gathering narrative data, as well as, a methodology designed to measure differences in occupational identity. To measure differences in occupational identity an assessment tool was necessary to generate a score for occupational identity. The search and subsequent participatory review of a tool to measure occupational identity is described in Chapter five.

Previous empirical research has utilized a mixed methods approach to explore occupational identity. Braveman et al. (2006) examined occupational identity through qualitative interviews and a quantitative assessment of occupational identity scores. By using qualitative in-depth interviews Braveman et al. uncovered some of the contextual factors which impacted occupational identity (social support, economic challenges). Discovering the contextual factors which impacted occupational identity would have been difficult to uncover through only statistical analysis. Through comparison of occupational identity scale scores Braveman et al. examined the effect of resuming paid employment on occupational identity. Through use of both types of methodologies Braveman et al. gathered reflective data on occupational identity and also advanced the knowledge on the changes that impact upon occupational identity in a real world setting.

3.3.1 Rationale for Mixed Methods

There is little research that has explored shifts in occupational identity from the perspective of the brain injury survivor or the impact of returning to work on occupational identity. To capture the perspective of the brain injury survivor on shifts in occupational identity, as well as, the difference in occupational identity based on work status both a subjective and objective approach were sought. Thus, to fulfil the requirements of all perspectives and manage the complexity associated with studying occupational identity a mixed methods approach (Creswell & Plano Clark, 2011) was a suitable choice for the current dissertation.

Although critics of mixed methods argue that qualitative and quantitative methodologies have been developed under different paradigms and thus cannot be combined due to conflicting philosophical assumptions (Lee & Smith, 2012). Others, such as Morgan (2007) cite mixed methods research as a way to promote interdisciplinary work among scholars. Morgan claims the appropriateness of mixed methods research comes from focussing on "...which questions are most important to study and which methods are most appropriate for conducting those studies" (p. 67). Morgan's position to focus less on ontological assumptions and more on the research methods itself was especially pertinent to the current dissertation given the need to use diverse research methods to fully address the complex process of the shift in occupational identity.

3.4 Mixed Methods in the Current Dissertation

The current dissertation also attempted to further explore the factors related to a shift in occupational identity, specific to brain injury survivors, and the statistical difference between those who returned to work and those who did not return to work. Upon deciding mixed methods was an appropriate choice for the current dissertation the next step was to decide which type of mixed methods design fit with the purpose of the study (Creswell & Plano Clark, 2011)

Two different types of mixed methods designs are suggested by Creswell and Zhang (2009) when utilizing a grounded theory design: A Fixed Parallel Design and An Explanatory Design. A Fixed Parallel Design is a design in which the quantitative and qualitative data are collected at roughly the same time but analyzed separately. The results of the qualitative analysis can then be used to strengthen or refute the results of the quantitative analysis during the interpretation stage. Creswell and Zhang described the purpose of the Fixed Parallel Design as "a way to understand a construct from the perspective of two different types of evidence" (p. 614).

The Explanatory Design is a design in which the quantitative data is collected and analyzed and then a qualitative follow-up is carried out to gather more information on the quantitative results (Creswell & Zhang, 2009). For the current study the Fixed Parallel Design was chosen because the purpose of the study was to understand occupational identity through two different perspectives: the nature of the shift in occupational identity after a brain injury as well as the difference in occupational identity scores between brain injury survivors with different levels of occupational engagement.

Creswell and Plano Clark (2011) discussed procedures for designing a mixed methods study with several alternatives depending on the nature of the research question and the type of data being collected. Determining the level of interaction between the strands of data is an important initial consideration. Creswell and Plano Clark elucidated further on Teddlie and Tashakkori's (2009) conceptualization of data strands defining qualitative and quantitative data strands as "a component of a study that encompasses the basic process of conducting quantitative or qualitative research: posing a question, collecting data, analyzing data, and interpreting results based on that data" (p. 63).

A common way of integrating quantitative and qualitative strands, and demonstrated in the current dissertation, is an independent interaction between strands. An independent interaction is aptly named as the quantitative and qualitative research questions are separate and the strands are mixed when final conclusion are being reached at the end of the research study. Figure 3-1 depicts the integration of quantitative and qualitative data as evident in the current dissertation.

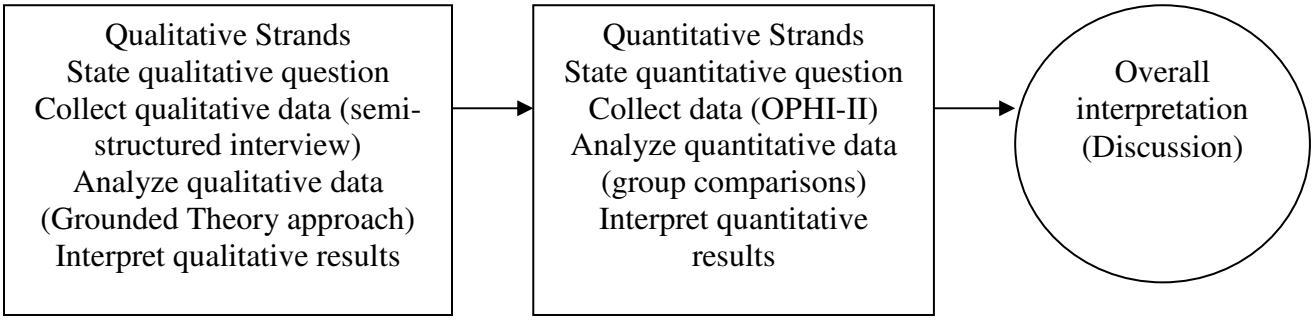

Figure 3-1 Integration of quantitative and qualitative data (Adapted to include relevant information on the current studies from Creswell & Plano Clark, 2011, p. 64)

Determining the priority and timing of the strands can determine which strand is enacted first and the temporal relationship between the strands (Creswell & Plano Clark, 2011). The current dissertation assigned an equal priority to both the qualitative and quantitative strands as both strands played an equally important role in exploring the research questions posed. Although the qualitative data was collected first this did not imply greater significance of the qualitative strand. Collection of data from the qualitative exploration was completed first as participants involved in the qualitative strand were also sought to review the assessment measure utilized in the Study 2, the quantitative strand.

The stage of integration of the qualitative and quantitative strands varies depending on the needs of the research study (Creswell & Plano Clark, 2011). The current study integrated the strands in a process known as mixing which occurred in the final phase of the research process, the interpretation stage. During the interpretation stage, conclusions were drawn based on the combination of the results from both strands. The analysis and integration of the qualitative and quantitative data can be adequately addressed in a variety of forms as noted by Creswell and Plano Clark. For the current dissertation, the integration of qualitative and quantitative strands is presented utilizing the merging technique, side by side comparison. In a side by side comparison, both strands of data are presented together in a discussion and a results table so the results from each strand can be compared. The convergence or divergence of the results are noted and explained. Table 3-1 identifies the stages in the analytic process described by Creswell and Plano Clark adapted to demonstrate the methods and research question for the current studies (edits for the current dissertation process are noted in italics).

Table 3-1 (adapted from Creswell & Plano Clark, 2011)
Qualitative and Quantitative Data Analysis Procedures and Research Questions

Study 1 Research Question *(Semi-structured interviews)*	Persuasive Qualitative Data Analysis Process	General Process in Data Analysis	Review of the OPHI-II *(Participatory Review)*	Study 2 Research Question *(Quasi Experimental)*	Rigorous Quantitative Data Analysis Procedures
What are the underpinnings describing the development of occupational identity after a brain injury from the perspective of brain injury survivors (captured through the use of semi-structured interviews)	Organize, Transcribe and Prepare, data with a computer program	Prepare data	*Is the length, wording, and ease of use of the Occupational Performance and History Interview-II suitable for brain injury survivors from the perspectives of persons with brain injury*	*Is there a significant difference in occupational identity scores between those who returned to work and those who did not return to work?*	Code data by assigning numeric values Prepare data with computer program Recode new variables
	Read data Write memos Qualitative codebook	Explore data			Visually inspect data Descriptive analysis Check for trends
	Code data Assign labels to codes Group codes into categories Interrelate categories	Analyze data			Pick statistics test Analyze data (inferential statistics, effect size, confidence intervals)
	Report findings in discussion of themes or categories Present	Present data analysis			Statement of results Use tables and figures

visual models, figures, tables		
Assess if research questions answered Compare findings with past literature Reflect on personal meaning State new question based on research	Interpret results	Explain how research answered research questions Compare research with past literature
Research, participant, and reviewer standards Validate with member checking Check for accuracy Check reliability	Validate data and results	Validate and check reliability Establish validity and reliability of current data Internal and external validity

Integration of qualitative and quantitative results. Exploring how the results of Study 1 are related to those of Study 2.

3.5 Overview of Study 1

To examine the shift in occupational identity after a brain injury two distinct studies and review of an assessment measure for one study was conducted. The subsequent section discusses the methodology and methods of Study 1 followed by a section outlining the methods and methodology utilized in Study 2.

The purpose of Study 1 was to explore the relationships underpinning a shift in occupational identity after a brain injury using an objectivist grounded theory approach (Corbin & Strauss, 2008). Grounded theory, with roots in pragmatism, (Corbin & Strauss, 1990) adheres to a belief that individuals have control over their futures by how they respond to changing phenomenon. Grounded theory seeks to uncover how individuals respond to such a changing phenomenon (Corbin & Strauss, 2008).

Bryson-Campbell et al. (2013) noted there are few studies on the shifts in occupational identity after a brain injury from the perspectives of brain injury survivors. There is also a dearth of information regarding the contextual factors that can impact a brain injury survivor's choice of occupations and the impact this lack of choice may have on occupational identity re-development. Study 1 aimed to address this gap in the literature and map out the process of re-developing an occupational identity as described by brain injury survivors. Study 1 also sought to provide an understanding of the context and relationships that can impact the re-development of occupational identity after a brain injury.

3.5.1 Study 1 Methods

To represent the voices of brain injury survivors and explore the survivor's perspective on the shift in occupational identity after a brain injury in-depth, semi-structured interviews were conducted. Steward (2006) noted the importance of matching the type of methodology with the

methods used. Morse and Field (1995) noted most grounded theory studies use interviews as the primary method of collecting data. Following this, Finlay (2006) suggested the use of semi-structured interviews, which are interviews that have pre-established questions but also allow for a discussion based upon the response of the participant, as an appropriate choice when using grounded theory. Thus, to explore the perspective of brain injury survivors, semi-structured interviews were chosen as the methods to allow for a rich collection of knowledge on the shift in occupational identity.

3.5.2 Sampling and Recruitment

Steward (2006) suggested the issue of choosing an appropriate sample size is difficult to do in qualitative research and needs to be "justified on the basis of the study's methods" (p. 42). Stergiou-Kita, Yantzi, and Wan (2010) utilized grounded theory involving a sample size of 10 participants. Similarly, Johansson and Isaksson (2011) included eight participants in a grounded theory analysis. For the current study a sample of nine participants was sought. A smaller sample size of nine participants both fits within past research utilizing a grounded theory approach (Johansson & Isaksson, 2011; Stergiou-Kita et al. 2010) and is typical for qualitative research (Patton, 1990).

All of the participants were recruited through use of a sign-up sheet from a program for brain injury survivors. This purposeful sample (Patton, 1990) was recruited from such a program as it was believed these participants could offer data relevant to the research question. Steward (2006) suggested "Overall, the aim is to gather the type and number of participants likely to offer data relevant to the research question and appropriate to the chosen methodology" (p. 41).

The current sample was recruited from this program for several reasons. This program is the largest day program for brain injury survivors within 200 kilometers of the researcher. In this

setting there were a large number of brain injury survivors who could potentially volunteer to take part in the study. Secondly, this center was chosen as it provides opportunities for the survivors to engage in occupations. All members in the program are requested to take part in at least one of the groups that maintain the center where the programs occurs therefore it was likely members of this program would have experience with re-engaging in occupations after brain injury and be able to contribute to the knowledge on the shift in occupational identity.

3.5.3 Study Context and Ethics

Participants were recruited from a program for brain injury survivors in Ontario. This program is described under a pseudonym, the center, to protect the confidentiality of the research participants. The center is open to all brain injury survivors who follow the protocol to join. Within the center are several groups that give the individuals an opportunity to engage in various daily occupations. One group focuses on creating printed documents and computer use. A second group is responsible for operating a small convenience store and ensures an adequate supply of stock is available on the shelves. Another group takes care of the maintenance of the center and surrounding property. There are also individuals within the center who take care of making the group lunch and making baked goods to sell. A final group takes care of the phone and messaging system within the center. To become a member at the center an interested person would set up a time to tour the facility and learn the programs and units available within. After a period of time the potential member would attend a meeting held at the center and other members would vote as to whether this center was a good fit for the potential member and whether they should attend the center.

All brain injury survivors over the age of majority who attend programming at the center were invited to participate in the study. The study was approved by the Research Ethics Board

for Non-Medical Research at Western University (Appendix A), as well as the ethics board governing the collection of data at the center.

The ethics board governing the collection of data at the center required three amendments in order to approve the collection of data at the center. One of the requirements of approval by the ethics board was that no participants take part who may become upset when discussing past occupations. Therefore, any participants who denoted in the beginning of the interview that feelings of anger may arise when discussing past occupations would be informed by the researcher conducting the interview that it is not necessary they continue the interview. A second requirement of the ethics board governing the collection of data at the center was if a participant had a power of attorney (P.O.A) for personal decisions the interview must be discontinued until permission could be granted by the P.O.A for the participant to take part in the study.

The final amendment required by this ethics board was the researcher was asked to make an oral presentation to discuss and inform all members as to the identity and background of the researcher, goals of the study, criteria for inclusion in the study (over age 19, brain injury survivor, and no feelings of anger over former occupations), and benefits and risks to participating.

3.5.4 Data Collection

Two interviews were scheduled in advance with the participants two to four weeks apart. The first interview was to gain an understanding of the brain injury survivor's perspective on shifts in occupational identity. The purpose of the second interview was to allow further clarification of themes and generation of more knowledge if necessary. Steward (2006) suggested a second interview is an important opportunity to collect further knowledge or clarify themes arising from the first interview. Giving two to four weeks in between the first interview

and follow-up interview would allow for time to review the interview notes to uncover potential issues to generate further questions for the second interview (Corbin & Strauss, 1990).

Participants who volunteered and met the inclusion criteria reviewed with the researcher the letter of consent and information (Appendix B). As per a requirement of the ethics board the letter of consent detailed the rights and responsibilities of both the participant and researcher. Adhering to a requirement of the ethics board through the letter of consent participants were given notification they could terminate the study at any time, as well as, were told about any potential risks to participating in the study. Prior to beginning the interview participants were asked to complete a demographic questionnaire (Appendix C). The demographic questionnaire was designed to gather demographic information on participants including past level of occupational engagement and current level of occupational engagement. The demographic questions were designed to reveal if a participant had experience re-engaging in occupations which was central to the research question.

Upon completion of the demographic questionnaire participants took part in an audio-recorded, semi-structured interview (Appendix D). The semi-structured interview was developed to ensure the information gathered within each interview would focus around the research question and explore shifts in occupational identity. Patton (1990) suggested the use of an interview guide can serve as a map or a checklist detailing the pertinent topic area and help ensure "how best to use the limited time available in an interview situation" (p. 111). For this study, a semi-structured interview guide was developed to gain the participants' view points and perspectives on shifts in occupational identity. The questions posed in the semi-structured interview were geared towards understanding the participants' occupational engagement prior to their injury, as well as, their present occupations.

Interviews lasted from one hour and ten minutes to one and a half hours. Field notes were collected through each of the interviews to capture information that could not be conveyed through audio tape recordings (facial expressions, change in voice pitch, sarcasm, observed behaviour relevant to the interview such as fatigue). Code notes were hand recorded throughout the data collection process to ensure all codes were noted and included for further analysis (Corbin & Strauss, 2008). After the interview was completed the handwritten and audio notes taken during the interview were transcribed into a word processed document to allow a record of the coding process to be easily followed. The transcribed interview was read and the coding process as outlined by Corbin and Strauss (2008) was followed.

During the second interview, member checking was completed to facilitate accuracy of the interview data. A theoretical sampling approach, which is collecting further data to obtain greater depth on specific concepts (Corbin & Strauss, 2008), was employed to explore further any issues or concepts that arose during the course of the first interview. Steward (2006) noted the importance of sampling until saturation occurs, defined as when all possible themes have been raised throughout the interview process. During the second interview, participants were also asked to review an assessment measure, the Occupational Performance and History Interview-II (Kielhofner et al. 1998), utilized in Study 2.

3.5.5 Data Analysis

The data collected from the interview was analyzed using a grounded theory approach (Corbin & Strauss, 2008). A grounded theory approach emphases an interactional approach between data collection and analysis. Analysis began as soon as the first portion of data was collected and continued until the end of the study (Corbin & Strauss, 2008). The transcribed

interview data was analyzed using Corbin and Strauss' line-by-line coding technique and the constant comparative method.

The line-by-line coding process involved reading through each sentence from the interview closely looking for text which centered upon the purpose of the study. All incidents noted in the interview as well as incidents that appeared to contribute to the aim of the study were labelled with a code. A sample of the raw data and the initial code is represented in Table 3-2. All incidents that were noted and grouped into codes were compared to other incidents within the text (Corbin & Strauss, 2008).

The constant comparative method (Glaser & Strauss, 1967) necessitates a reading of all data recorded in the interviews and comparing the data to uncover similar occurrences or events present in the data (Corbin & Strauss, 2008). The constant comparison approach helps to guard the researcher against bias as it requires repeatedly reviewing the grouping of the data and it helps ensure similar incidents are grouped together (Corbin & Strauss, 2008). This method continues until no new information surfaces and the collection of more data would not add further depth to the categories.

The codes were generated through a thoughtful process of asking questions of the data and comparing the context of the data provided by each participant to inform the researcher of the intricacies of the data (Corbin & Strauss, 2008). The question informing the coding process, "How does this statement describe the shift in occupational identity?" was designed to facilitate a greater understanding of the research question.

Table 3-2 Sample Interview Quotes and Initial Codes

Raw Data	Code
"You have to deal with things in a snap instant and I couldn't deal with that I'd be like duh, like an idiot" (RP)	Change in speed in the work place after injury based on personal reflection
"I didn't want to come (to the center), I didn't want to be branded a freak" (AE).	Conscious of the stigma associated with having a brain injury avoided the center for brain injury survivors
"We (brain injury survivors) do yard work around the city and landscaping" (JS)	Trying new occupations with other brain injury survivors

Bearing in mind the study question during the coding process, the point of reflection rested upon what each participant was saying regarding their role as an occupational being before and after their injury. Reflective thought was also focused upon what points were the participants attempting to convey concerning their transition into unpaid or paid work or school. Remaining cognisant to the research question during the line-by-line coding was an attempt by the researcher to begin to uncover the concepts that may impact upon shifts in occupational identity.

Throughout the coding process, theoretical memos (Corbin & Strauss, 2008) were used to keep track of emerging categories and record potential theories to explain the progression of a shift in occupational identity. The memos became a vital component to writing the process underscoring the shift in occupational identity. Initial codes were grouped into sub-categories to enhance an understanding of the underlying process. Sub-categories were reviewed and grouped into categories to develop a deeper conceptual understanding of the underlying process. The sub-categories and categories were supported by the quotes of the participants (Corbin & Strauss, 2008). The categories tended to be more abstract than the codes developed as is a natural occurrence in grounded theory analysis (Corbin & Strauss, 1990). Table 3-3 depicts a sample transition from the raw data, to code, to subcategory to category.

Categories emerged from the descriptive data within the codes and were either repeatedly present throughout the data or absent from the remaining interviews. Categories that that were repeatedly present throughout the data were related to subcategories during axial coding (Corbin & Strauss, 1990) and were used to generate hypotheses about the data.

Table 3-3 Analysis from Raw Data to Category

Raw Data	Code	Sub Category	Category
"I couldn't work long hours or anything (after injury) maybe about 4 hours a day was my limit" (MJ)	Noting an increase in physical and/or cognitive fatigue	Returning to previous occupations reflecting on changed abilities	Facing the reality of limitations and challenges
"I see myself as a less capable worker" (MJ)	Change in belief in the ability to do the job properly	Reflecting on changed abilities	
"People hear brain injury and a wall goes up" (MJ)	Becoming aware of the negative stigma of having a brain injury	Encountering labels and walls	Grappling with the negative label
"It was like jumping into the frying pan and into the fire... I thought it was about time to get out" (MJ)	Reacting to the changed work environment	Disengaging from occupations	Disconnecting from one society into another
"(I worked the) unit at the X (center name). I first worked in the kitchen, landscaping, because I can do it all here" (TL)	Trying new occupations with other brain injury survivors	Shifting or establishing vocational or occupational repertoires	

Theoretical sampling (Corbin & Strauss, 2008) occurred within the data collection phase as the first stage of the coding process unfolded. The circular process of theoretical sampling involved examining the data and deciding what concepts to investigate more thoroughly to evolve any preliminary concepts. New questions were formulated through this process to gather greater conceptual clarity. New questions on emerging concepts were posed to the same participants in the follow-up interview.

The new data gathered from the second interview were examined utilizing the same coding process and extraction of categories and core phenomena. A new orientation was considered to examine the role of society on shifting occupational identity and how the actions and interactions presented in the interviews impacted occupational identity. The theoretical sampling process occurred until the categories were well developed and further data collection would not result in the generation of greater conceptual clarity (Corbin & Strauss, 2008).

Credibility strategies are employed to establish the coherence of the process and to ensure that an interpretation of the data is done in a manner that reflects the participant's experiences and offers a deep description of the relationships and processes. Corbin and Strauss (1990) offer several questions to help assess the adequacy of the analysis process that is essential to evaluate any grounded theory study (Corbin & Strauss, 2008). The next section details the questions posed by Corbin and Strauss (1990) and the response to these questions based on the analysis for the current study. Some of the answers provided are brief to avoid unnecessary repetition of material already presented throughout the chapter.

3.6 Evaluative Questions

1. *Are concepts generated?*

Through an iterative process of coding and categorization of raw data, theoretical concepts were generated. All concepts that are generated in the current study were utilized to develop the process that underpins the shift in occupational identity.

2. *Are the concepts systematically related?*

The concepts developed describe the process that brain injury survivors undergo during the re-development of an occupational identity. The concepts are based on analysis and interpretation of the quotes taken during the two interviews and thus are grounded in data. Concepts that were initially generated but not supported by participant's quotes were not integrated into the theory.

3. *Are there many conceptual linkages and are the categories well developed? Do the categories have conceptual density?*

All of the categories were developed based on repeatedly being present throughout the raw data. The categories are inherently linked to one another as they describe a similar process. Some of the categories detail what occurs preceding a brain injury (awareness of shifting abilities) while others stem from the latter stages of the process (disconnecting into a new society).

4. *Is there much variation built into the theory?*

Variation speaks to how the theory accounts for the differences in the experiences of the research participants (Corbin & Strauss, 1990). Within the current study, the unique experiences of the brain injury survivors can be attributed to the different experience each participant

encountered returning to work. Some of the participants returned to volunteer occupations, others attempted to return to paid vocations. Several participants did not resume any work occupations.

Variation also speaks to the transferability of the research to others. While the focus of the current study was brain injury survivors this study may have transferability to others. This however cannot be established by the researcher in this study. The applicability of the theory to others can only be determined by others who read and reflect on the degree to which it resonates with others. For instance, those who experience a disruption to their physical or cognitive abilities such as someone who experiences a spinal cord injury or heart attack may also share similar characteristics in terms of the process underscoring the shift in occupational identity.

5. *Are broader conditions that affect the phenomenon under study built into its explanation?*

Broader social conditions are considered in the current study. For example, the impact of the role of choice and contextual factors on re-engaging in occupations was considered when exploring the relationships that underpin the re-development of occupational identity. Choice may be limited for some due to financial constraints or family pressures and this was cited as a contributing factor to the re-development of occupational identity. Those who experience limitations in choice may experience difficulty re-developing an occupational identity after a brain injury and this was noted in the current theory.

6. *Has "process" been taken into account?*

Corbin and Strauss (2008) noted that change in the form of a process is an important step of grounded theory research. The current study focuses on the shift in occupational identity and is used to elucidate the stages involved in the process of this shift. Previous research suggests after a disruption in occupations individuals experience a disruption to occupational identity

(Vrkljan & Miller Polgar, 2007; Wilson, 2010). The current study examined this change and the relationships that can help re-build an occupational identity.

7. *Do the theoretical findings seem significant and to what extent?*

The findings represented in the current studies serve multiple purposes. The study was initially conducted to lessen a gap in the occupational science knowledge base. Previous literature has yet to explore the relationships that impact the re-development of an occupational identity (Bryson-Campbell et al. 2013) and this was an important contribution. The impact of these findings can also serve to impact upon rehabilitation practices. The current model focuses on the rehabilitation of physical and cognitive injuries (Klinger, 2005). The current studies can be used to suggest the importance of including occupational identity re-development in rehabilitation practices and focus on re-engagement in occupations and contextual factors.

3.7 Overview of Study 2

Study 2 sought to examine if there was a significant difference in occupational identity scores between brain injury survivors who returned to work compared to those who did not return to work. The current study utilized a quasi-experimental, ex-post-facto design (Montero & Leon, 2007). The ex-post-facto, quasi-experimental design lends itself to an objective epistemological approach (Crotty, 1998). The objective positive approach, which influenced Study 2, holds the view that knowledge exists independent of experience and reflective awareness. Scientific empirical methods are best to examine this type of knowledge (Crotty, 1998).

The quasi-experimental design is suited to designs in which participants cannot randomly be assigned to groups (Montero & Leon, 2007). As evident in this study, some participants who

sustained a brain injury returned to work while others did not return to work. These two contrasting populations of brain injury survivors made up the two comparison groups for this study.

Data for the current study was collected through the reviewed questions of the Occupational Performance and History Interview-II (Kielhofner et al. 1998) and analyzed through statistical analyses using SPSS. All interview data was audio recorded and carefully transcribed to assure accuracy of the data. This study was approved by the Research Ethics Board for Non-Medical Research and the ethics board governing the agency where participants were recruited.

As this study was taking place in the same center as Study 1 the ethical requirements required for Study 1 were also required for Study 2. Thus, the amendments are summarized as follows: all participants who acknowledge that discussing past occupations may bring about feelings of anger will not be asked to participate, any power of attorney for a perspective participant be contacted for permission, and finally, an oral presentation be given to all individuals who attend the center to apprise them of the aims of the study and background information.

3.7.1 Sample

A random sample of 16 participants was recruited from a day program for brain injury survivors in Southwestern Ontario. The aim was to maintain the sample at 16 participants to compare between two employment statuses (working and not working) but to allow for the Occupational Performance and History Interview-II (OPHI-II, Kielhofner et al. 1998) to be completed with each participant to assess occupational identity score. Previous research utilizing

the OPHI-II also utilized a sample size of 16 participants to examine the difference in scores on the OPHI-II (Braveman et al. 2006).

Small sample sizes have also been used in research involving administration of the OPHI-II. In 2003, Gray and Fossey used the OPHI-II to explore the impact of chronic fatigue on the experience of engaging in occupations for five participants. Levin and Helfrich (2004) recruited seven adolescents to explore the perception of identity and occupational competence. In 2009, Ennals and Fossey used a case study approach to explore how to support clients with mental health issues. In 2010 two additional studies utilizing the OPHI-II with small sample sizes were published. Hamilton and de Jonge and O'Connell, Farnworth, and Hanson explored the impact of becoming a father on other occupational roles (n=4) and the lived experience of individual's with schizophrenia (n=2), respectively.

3.7.2 Measures

3.7.2.1 Demographic questionnaire. A demographic questionnaire (Appendix C) was developed for the current study to gather demographic information on the participants. The demographic questionnaire contained questions to obtain information such as the participant's age, level of education, income, rehabilitation services received after injury, and social support. The information was collected to describe the representativeness of the sample in relation to the population of brain injured persons, as well as ascertain the current work status of each participant.

3.7.2.2 Occupational Performance and History Interview-II. The Occupational Performance and History Interview-II (OPHI-II, Kielhofner et al. 1998) is a semi-structured interview designed to gather narrative information on an individual's occupational lifestyle,

occupational environment, and sense of occupational identity. The OPHI-II has been found to validly measure the three domain areas (occupational identity, occupational competence, occupational behaviour) based on data from 151 raters and 249 subjects (Kielhofner, Mallinson, Forsyth, & Lai, 2001). Although the OPHI-II has not been used with brain injury survivors, the OPHI-II has been utilized with a variety of participant populations (Kielhofner et al. 2001) such as those with a diagnosis of HIV/AIDS (Braveman et al. 2006), those with diagnosed mental health issues (Ennals & Fossey, 2009), as well as, those with no diagnosed medical condition (Kielhofner et al. 2001).

3.7.3 Data Collection and Analysis

Participants volunteered to participate in the study by signing a sign-up sheet posted within the building that houses the day program. Participants who indicated interest were contacted by the researcher to set up a mutually agreeable time and location for the interview to occur. As per the requirements from the ethics board prior to beginning the interview participants were given a letter of information and consent to review and sign. Participants who signed the consent form were given a demographic questionnaire to complete to gather descriptive data on the sample and were then administered a version of the OPHI-II (Kielhofner et al. 1998) reviewed by brain injury survivors. Details of this review of the OPHI-II are in a forthcoming chapter.

All of the data collected were entered into the statistical software package SPSS. The interview data from the OPHI-II was entered into the quantitative scales provided within the OPHI-II manual (Kielhofner et al. 1998) and a score for occupational identity, occupational competence, and occupational behaviour was calculated. A Spearman rho correlation analysis was run on the scale items (occupational identity, competence, settings), as well as a Mann

Whitney test of means between groups on work status and occupational identity, competence, and settings. Findings from Study 2 were noted and utilized for comparison and integration with the qualitative findings from Study 1.

3.8 Summary and Integration of Study 1 and Study 2

The overall aim of the current dissertation was to elucidate the relationships underpinning a shift in occupational identity. In order to achieve this complex task there were two perspectives sought through empirical study. The first perspective, examined through semi-structured interviews and grounded theory analysis (Corbin & Strauss, 2008) in Study 1, was to explore the re-development of an occupational identity through the perspective of a brain injury survivor. The voice of the brain injury survivor was utilized to capture aspects of the contextual factors that may impact upon the process of re-developing occupational identity. The second perspective was sought to explore the impact of returning to work on occupational identity and if there was a statistically significant difference between those who resumed occupations and those who did not.

The purpose of capturing both perspectives on the shift in occupational identity was to lessen a gap in the literature as well as elucidate on the process that impacts occupational identity to potentially inform rehabilitation models. To capture all the aims of the study, a mixed methods approach was applied (Creswell & Plano Clark, 2011) and the inductive knowledge gained through the interview process was integrated with the deductive knowledge that arose from the quasi-experimental study. The knowledge gathered from Study 1 on the contextual factors that impact occupational identity development was examined and integrated with the results of Study 2, which suggested if the relationships significantly affect the re-development of occupational identity. Together, the perspectives developed from the current dissertation on occupational

identity re-development are used to suggest the importance of re-engaging in occupations after a brain injury and the importance of further exploring the contextual factors relating to occupational identity re-development.

3.9 Challenges of Mixed Methods

A mixed methods design offers many benefits such as the ability to collect numerous sources of data to fully address the research question(s) (Denzin & Lincoln, 2005), however there are also challenges associated with this design. The challenge in conducting mixed methods research can be attributed to the amount of skill and expertise required to appropriately collect both qualitative and quantitative data strands (Creswell & Plano Clark, 2011). To conduct both quantitative and qualitative analyses, the researcher must have some degree of skill in both of these areas and should become familiar with both quantitative and qualitative research methods (Creswell & Plano Clark, 2011).

For the current study to address the issue of the significant amount of skill and expertise required to conduct the study, the student researcher, as well as, three committee members were involved in the data collection, analysis, and interpretation phase. All members of the committee represented various research backgrounds including both quantitative and qualitative. Having committee members with varied research experience helped to ensure the knowledge and skill required to conduct the mixed methods study was present at all stages of the research design. The mixed methods design is well suited for future research attempting to address multiple research questions involving the collection of a rich depth of knowledge as well as objective and measurable data.

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Chapter 4 Exploring the Shift in Occupational Identity Following Brain Injury

4.1 Introduction

Previous research in occupational science has explored the shift to occupational identity following a diagnosis of HIV/AIDS (Braveman, Kielhofner, Albrecht, & Helfrich 2006), driving cessation (Vrkljan & Miller Polgar, 2007), changes in occupational participation and identity following surgery for weight loss (Wilson, 2010), and the importance of leisure occupations in shaping occupational identity (Howie, Coulter, & Feldman, 2004). Several relationships emerged and were suggested by these past authors as influential in creating a shift in occupational identity.

Braveman et al. (2006), for example, suggested that developing competence in occupations was a step to re-developing occupational identity after experiencing a disruption to occupations. Others such as Vrkljan and Miller Polgar (2007) noted that re-engagement in meaningful occupations is an important part to developing occupational identity. Likewise, Howie et al. (2004) suggested leisure occupations and the environments and interactions in which they occur can shape occupational identity.

What is omitted from the current occupational science literature is an exploration of the relationships underpinning a shift in occupational identity following a brain injury (Bryson-Campbell, Shaw, O'Brien, Holmes, & Magalhaes, 2013; Cotton, 2012). The contextual relationships underpinning occupational identity development have been omitted although exploration of the contextual factors has been suggested as a key step to evolving occupational identity in the occupational science literature (Laliberte Rudman & Dennhardt, 2008; Phelan & Kinsella, 2009).

Authors throughout occupational science however, have discussed the transitions in the process of adapting to occupations (Klinger, 2005; Shaheed Soeker, 2011) which may be linked to occupational identity development. Klinger (2005) asserted that a step in the process of occupational adaptation after a brain injury is the re-development of occupational identity. Klinger's research set the foundation for what may be involved in shifts in occupational identity (changes to occupational environments, modifications to the type and nature of occupations). However, as the main purpose of Klinger's research was to explore the perspective of brain injury survivors as they work through the process of occupational adaptation little was uncovered regarding shifts in occupational identity. The article did suggest occupational identity worked together with occupational competence in the process underscoring occupational adaptation.

There is also a large body of knowledge throughout the social sciences literature that discusses resiliency after a life disruption and may reinforce the relationship between adaptation and occupational identity development (Luther, Chiccetti, & Becker, 2000). Resiliency is a articulated by Lefebvre and Levert (2006) as a process of developing competence in abilities, as well as viewing oneself as a capable individual in the face of great adversity. Working through a life disruption such as a brain injury may require some degree of resiliency. Lefebvre and Levert for example, suggested that part of the process of adapting to a brain injury and the life transformations associated with brain injury is the presence of resilient behaviours and a supportive family environment. However, the current knowledge base has yet to explore the relationship between resiliency, family support, and the re-development of occupational identity after brain injury.

The importance of further explicating the construct of occupational identity and shifts in occupational identity is twofold. First, expanding the knowledge base on occupational identity

after a brain injury can lead to practical changes in rehabilitation programs. Current rehabilitation models are centered on the rehabilitation of physical injuries (Klinger, 2005; Nochi, 1998) with little attention given to re-developing an occupational identity. If more was understood regarding the shift in occupational identity changes could be enacted at the rehabilitation program level to promote identity re-development. Secondly, exploring personal accounts by brain injury survivors to depict the process that occurs during the re-development of an occupational identity can lessen a gap in the literature and elucidate the nature of shifts in occupational identity. Thus, the research question guiding the current study was: What are the relationships underpinning a shift in occupational identity following a brain injury?

4.2 Methods

The purpose of Study 1 was to explore the relationships underpinning changes in occupational identity after a brain injury using an objectivist grounded theory approach (Corbin & Strauss, 2008). Utilizing a grounded theory approach allows for the generation of categories and sub-categories that describe the process involved when a brain injury survivor experiences a shift in occupational identity. As is typical in grounded theory research two semi-structured interviews were utilized to gather narrative data describing occupational identity after a brain injury (Finlay, 2006; Morse & Field, 1995).

4.2.1 Ethics

Participants were recruited from a center for brain injury survivors. The program at the center is open to any brain injury survivor who follows the procedure to join the center and contributes to the maintaining of the center. This study was approved by the Non-Medical Health

Sciences Research Ethics Board at Western University, as well as, the ethics board governing the collection of data at the center.

4.2.2 Researcher Perspective

The following section discusses the perspective of the researcher which guided the collection and analysis of data in the current study. The methodological decisions of the current study were influenced by the researcher's theoretical orientation, a pragmatic worldview. According to Creswell and Plano Clark (2011), pragmatism focuses on the importance of the research question and takes advantage of multiple ways of understanding the research question. Pragmatism relies on participant views to generate theory and participants are often considered members of the research team (Creswell & Plano Clark, 2011). Accordingly, participants began the interview process by generating a pseudonym to be used to protect their identity. Any quotes given during the interview process facilitate an understanding on the personal journey undertaken to re-develop an occupational identity.

Values are an inherent part of qualitative research and as such measures should be taken to decrease the influence of bias. Throughout the data collection and analysis process it was vital to remain cognisant of personal values and beliefs by reviewing field and code notes taken during the participant interviews. This review process facilitated an awareness of the personal values and beliefs held by the researcher and how values may influence interpretation of data. Also, upon initial coding a second researcher reviewed the coding analysis and the categories generated. An iterative process between researchers was conducted to review each category and assess the appropriateness of each category grouping and label.

4.2.3 Participants

In total, nine participants (three women and six men) participated. Demographics of the participants in this sample are included in Table 4-1. The age range of participants was 30 to 61 and all but one participant sustained their brain injury prior to 2005. All participants reported receiving multiple forms of rehabilitation including: physical therapy, speech therapy, and occupational therapy at the time of injury.

Five participants were working either full time (n=2) or part time (n=3) at the time of their injury while the remaining four participants were attending school full time. At the time of the interview one participant reported working part time, five participants reporting volunteering part time, and two participants reported volunteering full time. One participant reported no involvement in any volunteer or paid occupations.

4.2.4 Data Collection and Analysis

Participants signed up for two interviews occurring two to four weeks apart. Following completion of the demographic questionnaire participants took part in the first semi-structured interview (Morse & Field, 1995; Steward, 2006). The researcher began the interview with a list of interview questions (see Table 4-2 for a sample of the interview questions) but allowed the interview to move away from the interview questions and thus the interviews were directed by the responses of the participants.

The analysis process followed Corbin and Strauss's (2008) approach, beginning with line by line coding of the transcribed interviews and the constant comparative approach, a hallmark of grounded theory analysis (Corbin & Strauss, 2008). The initial codes developed from the analysis were grouped into sub-categories. The sub-categories were grouped into categories to describe the process underlying a shift in occupational identity.

Table 4-1 Demographic Characteristics of Participants

Participant Pseudonym	Age Range	Years Since Injury	Pre-Injury Occupation	Post-Injury Occupation
Reagan P.	30-40	3	Working full time*	Volunteers part time**
Amelia E.	41-50	33	Working full time	Volunteers part time
Elvin P.	41-50	9	Working full time	Volunteers part time
John S.	51-60	31	Working full time	Volunteers full time
Mary S.	51-60	50	Full time student	Works part time
Sinad F.	51-60	44	Attending school	Volunteers part time
Shawn B.	41-50	39	Attending school	Not working
Tommy L.	41-50	24	Working full time	Volunteers part time
Martin J.	61 and over	25	Working full time	Volunteers full time

*Full time work (paid/unpaid) defined as working 30 or more hours per week (Statistics Canada, 2010)

**Part time work (paid/unpaid) defined as working less than 30 hours per week (Statistics Canada, 2010)

Table 4-2 Sample Semi-Structured Interview Questions

1. Can you tell me about the jobs (paid or volunteering) you had prior to your injury? What was it about the job you liked? Can you give an example(s)?

2. What was it about the job you did not like? Can you give me an example(s)?

3. Take one the jobs you did, and tell me about the hardest thing you ever had to do and how you handled the challenge?

4. How would you describe yourself as a worker prior to your injury?
   If I met you in a social situation and I approached you and asked, "What do you do?" What would you have told me about what you did?

5. How did it happen that you became a _____ (insert descriptor participant uses above) worker?
   What lead up to choosing this job or role?
   What did you do in your daily life that might have helped you to become this type of worker?

The second interview occurred two to four weeks after the first interview and served as an opportunity to confirm the data collected during the first interview was an accurate reflection of the participants' perspective. Also, any new questions formulated to gather greater conceptual clarity on emerging concepts developed during the preliminary analysis process were posed to the same participants during the second interview.

4.3 Findings on Occupational Identity and Re-development

4.3.1 Participant Employment Context

The context of the employment background of the participants is briefly summarized to provide a context for the interpretation of the findings. All of the participants except for one sustained their brain injury over nine years ago. Within the nine or more years since their injury three participants returned to paid work similar to the employment they held prior to their injury. This paid employment was only maintained for less than six months until these participants terminated their employment and joined a center for brain injury survivors. The remaining participants did not attempt to return to paid work instead they immediately joined a center for brain injury survivors. Within this center eight of the participants volunteer (either part time or full time) in one or more of the various groups. Only one participant is currently still maintaining paid employment outside of the center.

4.3.2 Examining and Negotiating Occupational Identity

The overarching core category emergent from the analysis of transcripts was Examining and Negotiating Occupational Identity. This core category reflected the entire process described by the participants. The core category described how participants first reflected upon their occupational abilities and limitations. The reflection of new abilities involved participants

accepting or moving past new stigmatizing labels. To help them move past negative labels participants tended to surround themselves with social networks of other brain injury survivors and engage in occupations with these brain injury survivors.

There were three emergent categories and six sub-categories. The Categories and (sub-categories) were identified as follows: Facing the reality of limitations and challenges (returning to previous occupations, reflecting on changed abilities or performance), Grappling with negative labels (encountering labels and walls, discontinuing occupations), and the third category was Disconnecting from one society into another (shifting vocational or occupational repertoires, positive shifting). These categories are illustrated in Table 4-3 and discussed in the following section. The categories are illustrated with supporting participant quotations given under a pseudonym. Participants chose their own pseudonym at the beginning of the first interview to facilitate a sense of being actively involved in the research process.

4.3.3 Facing the Reality of Limitations and Challenges

Throughout the interview participants spoke about reflecting on changes that occurred to their abilities. After their injury participants asked “Who am I?” (Amelia E.) as they attempted to rebuild a sense of who they were. For some participants trying to gain a sense of who they were involved returning to occupations they held before their injury. For other participants, it was through reflecting on their changed abilities they discovered changes in their abilities. The following sections discuss how participants described the change in their abilities through the sub-categories of Returning to Previous Occupations and Reflecting on Changed Abilities or Performance.

Table 4-3 Main Categories and Sub-Categories

Categories	Sub-Categories
Facing the reality of limitations and challenges	Returning to previous occupations Reflecting on changed abilities or performance
Grappling with negative labels	Encountering labels and walls Discontinuing occupations
Disconnecting from one society into another	Shifting vocational or occupational repertoires Positive shifting

4.3.3.1 Returning to previous occupations. Participants noted that after their brain injury they experienced a decrease in their physical and cognitive abilities. Some participants experienced this change by returning to former occupations and noticing a change in their ability to conduct their former occupations. Other participants did not attempt to return to former occupations but developed recognition of a shift in their abilities by reflecting on how they think they would handle returning to former occupations.

Some participants recognized new limitations in their ability to engage in occupations by going through the process of returning to a former occupation. Participants recognized new physical impairments that challenged their ability to take part in the same occupations after their injury. For example, Martin J. felt he was a "Less capable worker" after his injury. Martin remarked, "I couldn't work long hours or anything maybe about 4 hours a day was my limit. I needed to break for 15 after 4 hours but I wanted to be involved with working with other people." A second participant also identified his own limitations as a worker after he attempted to return to a paid occupation, "I've got no sense of smell. I tried to get a job at a chemical company but it was too dangerous" (John S.). John also commented that it is common with a brain injury to have to alter how you engage in occupations, "Do what you like to do, just make alterations to it to do it."

A female participant, Amelia E., recognized the shift in the type of work she would have to do after she experienced a decrease in her physical stamina upon returning to work after her injury. Amelia recognized that this physical change hindered her ability and confidence to do certain occupations:

> "I had the oomph and the strength and stamina but after my accident, you know, but I still enjoy outside but I can't run, I don't care to run, there is no need to run, so that's out.

> Actually I thought I might get a job but I guess I'm good to go to college but not good enough, or I wouldn't say I wasn't good enough, it's just I don't feel, um, worthy, I guess. Authority figures and anybody who has a decent job, if you're getting paid to be there you obviously have more whatever take it takes to do that than I do. I'll get the (*expletive)* job like cleaner, well... I don't know if you know how cleaners are treated but they are looked upon like the trash they are picking up, cleaning a bar or whatever."

Sinad F. returned to occupations upon joining a center for brain injury survivors. Sinad, who has perceptual difficulties, commented on the difficulty he faced trying to re-engage in occupations stating, "I tried to get involved and I tried to help out and do what I can. It makes it kind of hard because...(my perceptual difficulties)... I guess a lot of things are visual." For some of the participants recognizing they had new abilities to engage in occupations was not done through returning to occupations and assessing their strengths but instead, was done through a process of self-reflection as to what their abilities may inhibit them from doing.

4.3.3.2 Reflecting on changed abilities or performance. Other participants spoke about the limitations they encountered after their brain injury but did not gain this recognition upon returning to the same occupations. Participants reflected upon the decrease in their cognitive and physical ability and questioned whether they could do the same occupations done prior to their injury. One participant, Reagan P., when questioned if she wanted to return to any of her former occupations, such as her role working in a hospital, she commented, "Probably, ya...work at a hospital I loved that so much. I actually thought about it but I don't think I could." When questioned further as to why she feels she could not return to this role Reagan replied,

> "…you have to remember things…you have to be so quick and you have to deal with things in a snap instant and I couldn't deal with that I'd be like duh, like an idiot, but that's just me now, nothing I can do about it... I would love to go back to working in a hospital or even working in like an old folk's home just talking to lonely people, people that will get me because I am not as quick as I use to be before."

Similar to Reagan P. a second participant, Tommy L., also did not return to the same occupations after his injury. Tommy noted memory issues would have contributed to a decrease in his occupational performance and a decrease in his ability as a worker:

> "There's a difference in my memory, a difference in work ability. Some things I could do pre injury, I can't do it post injury...Pre injury, sports were very important. It's too difficult now to watch sports because I would rather be playing instead of just watching."

Upon recognition of the shift in physical and cognitive abilities participants struggled with how to manage the shift in occupational performance. Participants also recognized that they were negatively labelled as brain injury survivors and this negative label had an impact on their participation in occupations and occupational choices.

4.3.4 Grappling with Negative Labels

For participants the examination of occupational identity and the negotiation of a new occupational identity were influenced by the environmental context and the society the participant lived within. Participants spoke about how they perceived societal views about themselves as a brain injury survivor and the impact of negative labels on their resumption of occupations and re-development of occupational identity. Several participants spoke about

experiencing a "...wall..." (Martin J.) or labels such as "disabled...weird" (Mary S.) after their injury. The experiences of being labelled lead several participants to disengage in occupations. The following sections describe how participants experienced negative labelling in occupations and the impact of the negative stigma on their occupational participation.

4.3.4.1 Encountering labels and walls. Post injury participants recognized a change in the way others in society viewed them. For some participants the recognition of the brain injury label by others lead to discontinuing certain occupations to avoid experiencing the negative labelling. Four participants felt the label generated by those around them created a separation between those with a brain injury and those without (John S., Martin J., Mary S. Shawn B.). John S. noted:

> "We can do things just as well but people hear head injury and a screen goes up. I know I will never be normal again but we can still function just our brain doesn't work as well.... I was guilty of thinking that way too. Since my brain injury I met a lot of talented people with a brain injury. There is one guy who I talk to and you would never know he had a brain injury, he is really smart. I'm lucky, I look normal, I have no physical deformities."

A second participant, Martin J. also shared his thoughts on recognizing the stigma he faced after returning to work, "I wasn't being treated as a working individual. I was doing things the rest wouldn't do. People would hear I had a brain injury and a wall would go up. I was still capable of doing things. The accident didn't prevent me from doing what I did before, other people did." Two participants, Mary S., and Shawn B. experienced their brain injuries at a young

age and returned to school after their injury. Mary S. commented on the stigma she experienced when she returned to school,

> "Well I got teased and called names....I heard I'm disabled, you're weird....I had to move up here with my mom.... There is a lot of names for us...It was very hard to go right back (to school), there's very little in place to help, hard to not be able to carry on. It's embarrassing to have a brain injury nobody wants to have a brain injury. You look weird and people think you are not normal either, maybe we're not."

Shawn B. also returned to school shortly after his injury and found re-adjusting to being at school difficult. When asked how the transition back to school could have been easier he replied, "People being compassionate, understanding. You don't just start labelling." Other participants also noted labelling and stigma by others created a challenge to re-engaging in occupations and this caused participants to discontinue some occupations.

4.3.4.2 Discontinuing occupations. In managing the negative label, two participants (Amelia E., Reagan P.) suggested they removed themselves from community occupations as a temporary solution to avoid the brain injury label. Amelia E. initially avoided attending the center and outside activities for brain injury survivors, "I didn't want to come, I didn't want to be branded a freak."

Reagan P. also discussed not continuing with certain occupations after her injury. Having worked full-time prior to her injury Reagan recounted spending the first 10 years after her brain injury at home not working. When asked what she did after her brain injury occurred she responded, "Absolutely nothing. I hid at home and watched TV all day...."

Two participants (Martin J., Amelia E.) initially attempted to return to their previous paid occupations and took an alternative approach to manage the stigma. Martin J., for example, noted that when he returned to work, "I just did my job, once they seen I was a good worker and I had the same morals, I kept doing. I am capable at doing a lot of things." Shortly after returning to his paid occupation Martin J. felt the pressure of this occupation made it too difficult for him to continue, "Well it was like jumping out of the frying pan into the fire...I thought it was about time to get out of here while I'm still alive," and Martin turned to volunteer activities at the center instead. Similar to Martin J., Amelia E. also reported she felt the need to present her abilities to others upon returning to a paid occupation after her brain injury, "At first I was treated like a 16 year old. I had a hard time standing up for myself." Amelia E. also discontinued her paid occupations and began to volunteer a few hours per week at a center for brain injury survivors.

The process underpinning a shift in occupational identity began with recognition of new limitations and abilities to take part in occupations, followed by shifting occupations to manage the label of having a brain injury. The third and final stage of the process involved in re-developing occupational identity seemed to resemble a disconnection from the society of non-brain injury survivors into relationships and new occupations surrounded by those who also experienced a brain injury.

4.3.5 Disconnecting From One Society into Another

Part of the process of negotiating an occupational identity involved the purposeful disconnection from occupations involving individuals without a brain injury to occupations that were carried out with other brain injury survivors. In order to find such occupations participants had to find a space and place where they could engage in meaningful activities and succeed in

what they are doing. Hence the participants seemed to shift from being involved in a society surrounded by individuals without a brain injury to that of a society comprised of other brain injury survivors. Ultimately after surrounding themselves with other brain injury survivors the participants described new occupational roles and lifestyle as a positive change in their life.

4.3.5.1 Shifting vocational or occupational repertoires. Upon recognition of the shift in abilities and recognition of the negative label by others participants began to surround themselves with other brain injury survivors and take part in occupations that only involved other brain injury survivors. Several participants described this change in support networks and occupations as a positive change in their lives.

Three participants spoke of a change in their network of friends following their brain injury. Tommy L., for example, commented on the number of friends surrounding him following his brain injury, “I have less friends now but I have more quality friends. Instead of a large quantity of friends I have a smaller group of good friends.” Reagan P. also found a decrease in the number of friends she had, “I lost all my friends, all of them, and I had quite a few.” A third participant spoke to the dramatic change his brain injury had on his family, “It wasn’t easy. I had a divorce situation going on, my wife and daughter left; it was hard to relate to people.” (Martin J.).

The shift for Tommy L., Reagan P., and Martin J. and the shift in support networks lead to a change in the occupations they engaged in. Other participants attempted to experience new occupations after their brain injury and tended to focus on activities that were within their abilities and would provide the opportunity to develop competence in what they were doing. John S. for example did not resume his former occupation at an aquatic center, although he spoke

about how much he enjoyed this occupation. Instead after his injury he joined a center for brain injury survivors and began to volunteer at the center and a nearby church.

Other participants also spoke about engaging in new occupations after their injury. Prior to their injury four participants were going to school. The remaining five participants worked either in a hospital, as a large vehicle operator, aquatic center, or in a factory. New occupations tended to center around volunteering around others with a disability as well and engaging in leisure occupations that fit their physical and cognitive abilities. Five participants volunteered within the programs at the center and four participants engaged primarily in leisure crafting occupations (see Table 4-4).

Martin J., for example, highlighted what a typical day is for him noting relationships with others who also have a disability, "Getting out and around, shopping and getting out with other people from other organizations. We have people from X (local organization) which is a care giving association for people with disabilities...they come here and I go there."

Three participants who experienced significant physical and cognitive impairments after their injury reported centering their time on activities that can be conducted with ease (Elvin P., Tommy L., Sinad F.). Both Elvin P. and Tommy L. experienced significant speech impairments and did not return to any pre injury occupations. Instead both participants reported taking an interest in painting and landscaping (respectively). When Elvin was questioned if he was interested in painting prior to his injury he replied, "No, my mom can't believe it, she's shocked." Similarly, Tommy L. stated he engages in occupations he is capable of doing "In the (X) unit at the (center). I first worked in the X unit now (another unit), because I can do it all."

Table 4-4 Participant Occupations

Participant Pseudonym	Pre-Injury Occupations	Post-Injury Occupation(s)
Reagan P.	Hospital worker	Volunteer at the center
Amelia E.	Lawn maintenance	Crafting
Elvin P.	Warehouse worker	Crafting
John S.	Aquatics	Volunteer at the center, volunteer in nearby church
Mary S.	Student	Volunteers at the center
Sinad F.	Student	Fitness occupations at a local gym
Shawn B.	Student	Wood working
Tommy L.	Shipping	Volunteers at the center
Martin J.	Factory worker	Volunteer at the center

Sinad F. experienced perceptual difficulties and could not return to his former occupations. He reported attempting to get involved in things that met his current ability. “I do kind of help with the dishes at lunch time. If there is any kind of a discussion, or anything specific I usually like to get involved, I try to get involved and I try to help out and do what I can.”

Many of the participants reported experiencing a shift in the type of occupations that could be conducted after their injury. The majority of the participants (Regan P., Sinad F., Martin J., Elvin P., Amelia E.) discussed their brain injury and/or the shift in their occupations as something that created positive changes in their life.

4.3.5.2 Positive shifting. Several participants described their participation in new occupations as being a positive shift that involved taking part in occupations that were healthier and created a greater sense of happiness than before their injury. Reagan P. spoke about the loss of one occupation and engagement in new occupations as positive changes:

> “Before I use to go to the bars and get just hammered...I drank to the point I could hardly walk and I can’t anymore and you know I don’t even miss it.... I use to hate it...nobody could call me a (*expletive*) that word...I’d snap, I’d knock people out cold....When I was in high school and public school and I was asked to do a speech I just couldn’t and now I interviewed the X (university) students and I’m completely happier and calm. People can call me names and I’m just like, oh you feel that way, oh well and move on.... I know I have a brain injury but it all happened in a good way. All my friends that I had in the past were all party animals and I know I don’t have them anymore and it kind of sucks since I am alone but I have friends here now so that changed and it’s good.”

Like Reagan, another participant, Sinad F., mentioned the positive changes in his life and interactions with others that he is trying to demonstrate since his injury. When asked how his brain injury shaped him he responded, "I got more spiritual and more sensitive to the needs of other people. I've been trying to stay away from the word *I* and trying to be more altruistic but it is very difficult to do."

Several participants spoke about the shift in the availability of personal time since their injury and new occupations they are now able to engage in. Martin J. highlighted the shift in occupations he experienced after his injury and having the time to take part in an occupation that was of interest to him:

> I have always been interested (in music) but before I was working full time and overtime and I didn't really have a lot of time to spend on music. Now I volunteer for a bunch of places. Volunteering allows me to do what I want to do, working with people that have problems. I am more happy (*sic*) with myself. It was a positive change. I thought I'd be stuck in the same job till I retired. I have done a lot ever since my injury. I wasn't in a functioning state before, I'm happy with myself.

Three participants (Amelia E., Elvin P., John S.) spoke about the positive impact sustaining a brain injury had on their daily occupations and schedule. When asked about her current schedule and the impact of a brain injury on her schedule Amelia E. replied, "Well let me tell you, I do whatever I want, when I want, I have no schedule...and I get paid the same price or the same cheque every month....I am more involved in stuff now, I wanted to be more involved."

A second participant, Elvin P., only began to engage in crafting occupations after his brain injury to occupy his time and was proud of his ability to paint. Elvin P suggested he

experienced a sense of accomplishment with his work. Upon first meeting Elvin P. he took the interviewer to see his newest creation; a painting of a bird flying in the sky. Elvin smiled and said “mine” and demonstrated he was pleased with the picture. John S. maintains a very regular schedule of volunteer activities and considers himself someone who is lucky, “I use to plan for years in advance, now I have to take it one day at a time. Here today I know I can do it. I’m lucky for being unlucky.”

4.4 Discussion

The main findings in this study suggest that there is distinct process underlying a shift in occupational identity for the participants with brain injury. The process underlying a shift in occupational identity initially involved facing the reality of new limitations and challenges in relation to participation in occupations. Upon recognizing new limitations participants became aware of the negative labels and walls individuals without a brain injury utilized. Participants noted that the experience of these labels caused them to avoid or remove themselves from certain occupations and this created a shift in the type of occupations they did and a shift in the individuals they were surrounded by.

The following sections discuss how the findings detailing the shift in occupational identity are relevant to the knowledge base in occupational science on occupational identity and linked with other constructs in the field. For instance, the findings of the current study are discussed relevant to how brain injury survivors experience an occupational disruption (Whiteford, 2000) and a subsequent decrease in occupational competence. In addition, it is suggested that the insights from this study support that the disruption to occupations and decrease in competence necessitated a shift in occupations that fit within the new (post-injury) abilities and this is connected to a process known as occupational adaptation (Klinger, 2005).

4.4.1 Shifting Occupational Identity

Several participants experienced a change in their cognitive and physical abilities after their brain injury. Recognizing new limitations after a brain injury is consistent with past research findings by Nochi (1998, 2000). Participants in the current study recognized a shift in their abilities either by unsuccessfully returning to previous occupations and encountering negative labelling by others or by undergoing self-reflection without re-engaging in occupations. The participant's experience of recognizing new labels and limitations is used to discuss how this recognition of labelling contributed to participants discontinuing occupations and how this shift away from occupations impacted upon occupational identity.

4.4.2 The Impact of Labelling on Participation in Occupations

Participants in the current study spoke about recognizing their cognitive and physical limitations after their injury and the resulting labelling they experienced. Several participants spoke of the difficult time they did encounter or would encounter returning to their former occupations. Participants felt others would view them as less capable and they would not be able to do their job properly.

A recent publication by Shaheed Soeker (2011) detailed the loss in physical and cognitive abilities following a brain injury and the negative impact this loss had on occupations. Similar to the participants in Shaheed Soeker's study, the participants in the current study identified functional limitations that occurred after their injury and that the limitations impacted their occupational engagement.

Participants in the current study who perceived they were negatively labelled discontinued or avoided certain occupations. Discontinuing meaningful occupations due to limitations and/or negative labelling resonates with findings of previous research that also found

that brain injury survivors identified feeling labelled by society and avoided occupations to hide the disability (Nochi, 1997, 1998). These findings were mirrored by Shaheed Soeker (2011) who noted the brain injury survivors in his study faced labels by society which hindered participation in or maintaining meaningful occupations.

In the current study, several participants also indicated discontinuing occupations occurred partially to avoid the stigma associated with having a brain injury. One participant (Amelia E) avoided attending activities at a center for brain injury survivors to avoid being labelled. A second participant discontinued his productive occupation upon sensing there was something separating him from his co-workers (Martin J.).

This process of negotiating ways to avoid being labelled contributed to conscious decisions to withdraw from meaningful occupations. Past studies have also suggested labelling may lead to a decrease in participation in occupations (Nochi, 1998; Shaheed Soeker, 2011). The findings of the current study expand upon Nochi and Shaheed Soeker's findings to suggest brain injury survivors reflect upon the negative label imposed on them and this pushes them to consider other occupations.

4.4.3 Advancing the Knowledge on Occupational Disruptions after a Brain Injury

The emergent findings of the current study suggest that participants experienced a disruption to their occupations after their brain injury. For some participants this disruption was caused by the requirement of long term hospital care and for others the disruption to daily occupations was caused by the experience of negative labelling and discontinuation of occupations to avoid the negative label. Eight participants eventually did resume new occupations, however one participant did not resume any productive occupations following his brain injury.

In 1998, Wilcock defined occupational deprivation as “The influence of an external circumstance that keeps a person from acquiring, using, or enjoying something” (p. 145). However, this concept was evolved in 2000 by Whiteford who noted that while occupational deprivation typically occurs over an extended period of time when there is a lack of “supporting conditions” (p. 201) there are also individuals who experience a temporary disruption to their level of participation in occupations. Whiteford labeled this temporary decrease in occupations an occupational disruption.

Whiteford (2000) defined occupational disruption as a decrease in an individual’s level of engagement in occupations due to a temporary situational change. According to Whiteford, the individuals most susceptible to occupational disruption are those who experience a significant life event or illness that is expected to be temporary, provided supportive conditions are present. The implications of not overcoming a disruption to occupations can lead to a decrease in participation of occupations that in turn can diminish an individual’s sense of occupational competence over time (Braveman et al., 2006; Christiansen, 1999). Findings from the current study indicated that the participants experienced occupational disruptions and are at risk for deprivation if occupational disruption is prolonged. For the majority of participants in this study some of the consequences of occupational disruptions were overcome through participation in different occupations.

4.4.4 Changing Competence: Occupational Participation after a Brain Injury

Findings of the current study suggested that several participants experienced a decrease in competence for performing occupations due to a shift in functional limitations and/or negative pressure from co-workers. Reagan P., for example, felt that since her injury she lacked the motor speed to return to her role in the hospital. Amelia E. commented the only job she could get was a

labor type job (cleaning, washing dishes). Tommy L suggested he didn't return to any former occupations because of his inability to perform the job successfully. Upon experiencing a decrease in competence in performing former occupational roles participants engaged in volunteer occupations that fit within their limitations and abilities. Upon establishing new occupational roles the participants in the current study noted a feeling of satisfaction and success in their ability to manage new occupational roles.

Findings from this study suggested that the participants reflected on the impact of their brain injury and their decreased competence and engaged in other occupations consistent with their changed capacities. These insights are similar to participants that reported having decreased competence in their occupational roles after attempting to re-establish life roles in a study by Braveman et al. (2006). Braveman et al. noted that participants expressed difficulty re-engaging in paid worker roles and some only took on such roles due to pressure from family members. The current study adds to this knowledge by making it more applicable to the brain injury survivor population who may experience unique cognitive challenges.

4.4.5 Positive Lifestyle Changes

Aside from moving forward and developing a sense of competence in new occupational roles participants in the current study spoke about the experience of having a brain injury as an event that in some cases lead to positive lifestyle changes. Participants described some of the positive changes as a decrease in participation in potentially harmful occupations such as excessive drinking (Reagan P.) or creating the opportunity to take part in enjoyable leisure occupations such as music (Martin J.). The acceptance of their brain injury seems to be part of the process involved in the re-development of occupational identity.

Several participants discussed how sustaining a brain injury was a significant change in their life and one that lead them to positive changes in occupations. One participant, Reagan P., spoke about the occupations she engaged in since her injury. Prior to her injury she engaged in what she considered to be maladaptive occupations and described herself as someone with a short temper. Following her injury Reagan P. began to take part in occupations she defined as productive and helpful and felt she is a better person now. Engaging in new occupational roles to create a sense of being a productive individual is consistent with the findings of Nochi (2000).

Nochi (2000) suggested survivors need to make sense of the loss of their former self and focus on the positive changes as a way of accepting the loss of self. The findings of current study add to Nochi's research findings and suggested that participants focussed on the positive changes to not only accept their new identity but also to accept the shift in their occupational roles.

All of the components of the underlying process describe the shift in occupational identity: experiencing new limits and labelling by society, disruptions to occupational participation, and engaging in new occupational roles were linked to participants' developing a greater sense of occupational identity.

4.4.6 Re-Developing an Occupational Identity

There were two primary components that supported the re-development of an occupational identity after a brain injury, the re-engagement in meaningful occupations and the process of occupational adaptation. Both of these components work in concert along with underlying contextual factors such as access to resources or supports to try new occupations to re-develop an occupational identity.

4.4.6.1 Re-engaging in meaningful occupations. Participants in the current study and participants with a brain injury from past research (Nochi, 1997; Shaheed Soeker, 2011) noted a decrease in participation in occupations post brain injury. Further to this, none of the participants in this study maintained participation in any pre-injury paid or unpaid work. Participants spoke of three factors contributing to this decrease in occupations such as: a shift in abilities to perform meaningful occupations, a decrease in competence in engaging in occupations, and negative labelling from co-workers and others.

Vrkljan and Miller Polgar (2007) and Wilson (2010) noted that when meaningful occupations are not re-established this can decrease one's sense of occupational identity. Similarly, the decrease in primary occupations of participants in this study may have initially inhibited the re-development of an occupational identity. For instance, this experience of a lessened sense of occupational identity is supported by the story of a participant in this study (Shawn B).

Over the course of the interview Shawn did not identify occupational goals or a sense of himself as an occupational being, both of which have been described as defining an occupational identity (Kielhofner, 2002; Unruh, Versnel, & Kerr 2002, respectively). Shawn was also not currently engaging in meaningful occupations, due to constant fatigue and a decrease in muscle stamina, which is necessary for developing a sense of occupational identity (Howie et al. 2004). Thus, for this participant he initially did not re-develop occupational identity in part due to a lack of re-engagement in meaningful occupations, supporting the notion that re-development of an occupational identity involves participation in meaningful occupations. Previous research has found that brain injury survivors experience a decrease in occupations due to physical impairments (Klinger, 2005) and due to negative labelling (Nochi, 1997).

The other participants in the current study re-engaged in new occupations that could be physically and cognitively accomplished, for example, volunteer roles instead of employment. And although the types of occupations shifted it seems these participants were seemingly able to redefine what they felt was a meaningful occupation to adapt and live with the consequence of the occupational disruption. Participants utilized these new occupations to define themselves as occupational beings and help them identify a future vision for themselves. Thus, these insights from participants' experiences suggests that re-engaging in new occupations that they could physically, as well as cognitively perform and find a sense of meaning in new occupations is part of the process of re-establishing a sense of identity.

This understanding, that re-engaging in meaningful occupations supports the re-development of an occupational identity, has also been supported by previous authors who suggested that working through a decrease in occupations is a key step in the process of re-building of a new occupational identity (Unruh et al. 2002) and is an important piece to come to view oneself as a capable individual following a diagnosis of breast cancer (Vrkljan & Miller Polgar, 2001). Re-engaging in occupations has also been suggested by Klinger (2005) as part of the process underscoring occupational adaptation and is connected to occupational identity.

4.4.6.2 Moving forward through occupational adaptation. Several participants in the current study noted a decrease in their level of occupational engagement immediately following their injury. But at the time of the semi-structured interview, all but one of the participants reported experiencing a degree of enjoyment in their daily occupations, noted by either their spoken reflection of their enjoyment of their current occupations or upon demonstrating enjoyment in what they were doing. Therefore, along the process of re-engaging in and maintaining occupations, participants worked through the process of occupational adaptation.

Klinger (2005) posited a link between the re-development of an occupational identity and the process of occupational adaptation. In order for the participants in Klinger's study to successfully adapt to new occupations after a brain injury there was a need to accept the physical and cognitive changes that had occurred. Two participants in the current study vocalized a recognition that they had changed since their injury. For example, John S. noted he was a different person since his injury. Likewise, Tommy L. felt he was a changed person due to the fact he could not do the same things he did before his injury. Although, the remaining participants did not vocalize a sense of having worked through the process of occupational adaptation they did demonstrate a change in the way they engaged in occupations, from paid occupations to volunteer and leisure occupations, to be able to successfully re-engage in occupations. Thus, some of the participant experiences in the current study were similar to Klinger's study and this involved successfully mastering the ability to engage in new meaningful occupations. Participants in this study also expressed that mastering and accepting new occupations was part of beginning to view new occupations as adding a positive aspect to their life.

For the participants many of the new occupations were conducted through a center for brain injury survivors. Conducting most occupations at a center for brain injury survivors meant survivors were not only being involved in occupations for brain injury survivors but the majority of their social networks were other brain injury survivors. This increase in involvement with other brain injury survivors afforded a new community within society and their participation in previous roles with others in society without a brain injury survivors seemed to be diminished. Access to contextual supports at the centre to participate in new occupations and within a

community of people were integral to the process of creating a place and a milieu of support to re-establish a sense of self and identity.

4.4.6.3 Expanding the link between occupational identity and occupational adaptation.

adaptation. In order to re-engage in meaningful occupations, participants in the current study had to move through a process of accepting new limitations to re-develop an occupational identity. For the participants in Klinger's (2005) study the process of adapting participation in occupations began with recognition of a change of who they were as an individual and accepting who they had become.

The participants in the current study support an extension of Klinger's (2005) stages in the process of occupational adaptation after a brain injury. Klinger posited the process of re-developing an occupational identity and the development of occupational competence work together to help the individual achieve occupational adaptation. Klinger concluded with a call to empirically examine the relationship between occupational adaptation, occupational competence, and occupational identity. The findings of the current study suggests that there is an interconnection between these three concepts and suggests the relationship between occupational adaptation, competence, and identity share a reciprocal relationship with each other. As occupational adaptation and occupational competence were achieved, participants in the current study re-developed an occupational identity. Part of the process of adapting to new occupations and building a positive sense of competence in these occupations may stem from the presence of resilient and adaptive behaviours. Although these behaviours cannot be readily identified through the current research, others have suggested resiliency is present when an individual is able to overcome an adverse life event and maintain a positive view of their capabilities (Luther,

Cicchetti, & Becker, 2000). Thus, for participants in the current study adaptation to occupations may have been supported by the process of resiliency and the development of competence.

Participants in this study demonstrated that occupational competence was gained through participation in meaningful occupations by expressing their views at how well they could conduct their occupations. Reagan P. for example noted she is good at public speaking and Martin J. noted he is a good musician, both of which are occupations they began since their injury. In order to take part in meaningful occupations the participants took part in new occupations they could successfully conduct and in turn developed competence in these occupations. A large part of the development of competence and adaptation to occupations stems from the participants having the opportunity to engage in and the availability of meaningful occupations. For example one participant, Martin J., discussed having the opportunity to engage in music because he started attending the center after his injury. He heard from others he was good at playing musical instruments and this helped him develop a sense of competence as a musician. He now identifies himself as a musician and shaped a positive occupational identity partially around this role.

This study suggests the development of competence and the ability to adapt to occupations is also dependent on the role of contextual factors such as having resources and supports and a place to participate in occupations in re-developing an occupational identity. Through partaking in meaningful occupations and re-developing competence in new occupational roles, the participants in the current study were able to re-develop a positive occupational identity. This supports the findings that occupational adaptation, occupational competence, and occupational identity work together along with contextual factors such as place to achieve a positive occupational identity.

4.5 Limitations and Future Research

The findings of this study are not generalizable to other populations of brain injury survivors, however, insights from this study may be used by others to integrate more focus on occupational identity as part of rehabilitation. Future research should continue to lessen the gap when exploring the re-development of an occupational identity and further examine the contextual factors that may influence the re-development of an occupational identity such as the influence of support networks on facilitating the re-development of occupational identity. This study also did not explore the relationship of the severity of brain injury to the various stages of the process. The process was explored uniformly for all of the brain injury survivors, although the experience of the re-development of occupational identity may unfold uniquely for those with varying injury levels. Future research could further expand this process by examining the differences of shifts occupational identity for survivors with various injury types or severity levels.

The process of shifting occupational identity was also only explored in a sample of brain injury survivors who were members at a center for brain injury survivors. Thus, the process describing changes to occupational identity may or may not be relevant to other brain injury survivors who live in the community but do not take part in activities at the center.

4.6 Summary

Through a grounded theory approach (Corbin & Strauss, 2008) the process underlying a shift in occupational identity was explored in a group of nine brain injury survivors. Through exploration of this process several core sub-processes were identified that impact upon the re-development of occupational identity. Experiencing new limitations and negative labelling by others were identified as contributors to a decrease in occupational participation both by

participants in the current study and others (Nochi, 1997, 1998). This shift in occupational participation also referred to as an occupational disruption (Whiteford, 2000) lead to a decrease in occupational competence, a finding that has also been supported by previous research (Braveman et al. 2006).

In order to successfully move through the process of occupational adaptation (Klinger, 2005) and re-engage in meaningful occupations the participants had to find a new way of engaging in occupations and develop greater competence as an occupational being. A large part of the development of competence and having the ability to re-engage in occupations stems from the availability of occupations and having the ability to engage in these occupations. The new occupations and social networks of the participants tended to separate them from those in society without a brain injury.

Overall, the central process underlying a shift and subsequent re-development of occupational identity is the re-engagement in meaningful occupations. The re-engagement in meaningful occupations involves a reciprocal relationship between working through the process of occupational adaptation and developing occupational competence mitigated by the influence of contextual factors that can limit or enhance the availability of occupations.

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Chapter 5 Review of the Occupational Performance History Interview-II

5.1 Introduction

This chapter is part of a larger study exploring shifts in occupational identity after a brain injury. The first step to explore the complex issue of shifts in occupational identity was to understand how occupational identity shifts from the perspective of a brain injury survivor (this grounded theory study is discussed in the preceding chapter). The next step to explore occupational identity was to examine the difference in occupational identity between those who returned to work to those who did not return to work.

In order for this exploration of occupational identity to occur a measure was required to assess an individual's occupational identity. The following chapter begins with an introduction to occupational identity and describes the search for an appropriate measure. The chapter continues with the rationale for review of this measure and the review process undertaken with a group of brain injury survivors.

5.1.1 Occupational Identity

Occupational identity was initially explored in the occupational science literature as a construct reflective of current and former occupational roles, vision for the future, and the identity as an occupational being (Kielhofner, 2002; Unruh, Versnel & Kerr 2002). Authors later called for greater evolution of occupational identity involving a close examination of the impact of cultural factors (Laliberte Rudman & Dennhardt, 2008) and the impact of relationships in society on developing occupational identity (Phelan & Kinsella, 2009).

Over the course of the past decade there was a focus on occupational identity in the occupational science literature (Bryson-Campbell, Shaw, O'Brien, Holmes, & Magalhaes, 2013). In addition, authors in the occupational therapy literature have discussed the impact of personal

relationships on occupational identity (Howie, Coulter, & Feldman, 2004) and the impact of gaining competence (Braveman, Kielhofner, Albrecht, & Helfrich, 2006) and confidence (Shaheed Soeker, 2011) in developing occupational identity. The impact of re-engaging in meaningful occupations on re-developing occupational identity has also been previously examined (Howie, et al. 2004; Vrkljan & Miller Polgar, 2007). Although the personal and relational factors influencing the re-development of occupational identity have been discussed there has only been minor attention devoted to how occupational identity can be measured as a construct.

5.1.2 Past Measurement of Occupational Identity

Interest in the measurement of occupational identity and shifts in occupational identity are found in qualitative inquires (Howie et al, 2004; Martin, Smith, Rogers, Wallen, & Boisvert, 2011) and in quantitative research (Braveman et al. 2006). The majority of this research from occupational science has defined the construct of occupational identity by narrative descriptions from research informants and summarized by the researcher.

Wilson (2010) employed an autoethnographic approach to explore occupational identity after surgery for weight loss. Wilson reflected upon a personal journal and measured occupational identity by the presence of a shift in participation in occupations, a modified schedule of daily occupations, and a greater range of occupations. Martin et al. (2011) utilized semi-structured interviews to define what occupational identity looked like after recovery from addiction. Occupational identity was measured by whether informants noted feeling a sense of value and competence in occupational roles. In 2004, Howie et al. identified themes during semi-structured interviews with participants. The themes, developed by the authors based on the informant's reflections, suggested occupational identity was measured by whether new

occupational relationships were formed, whether participant's had an awareness of abilities, and if participant's reflected on new occupations. As a final example, Vrkljan and Miller Polgar (2007) explored the link between occupational participation and occupational identity through interviews with a research participant who became unable to drive. The interviews were narrowed into themes and described a disruption in occupational identity indicated by a change in the ability to engage in meaningful occupations, a shift in occupational routines, and a change in identity ("Life after driving: Who am I? What will become of me?" p. 34).

While several narrative accounts have given insights into the characteristics of a shift in occupational identity (Howie et al. 2004; Vrkljan & Miller Polgar, 2007; Wilson, 2010) only one study has examined occupational identity using an assessment tool (Braveman et al. 2006). Braveman et al. explored occupational identity upon resuming work after a diagnosis of HIV/AIDS using the Occupational Performance and History Interview-II (OPHI-II, Kielhofner et al. 1998). Although, the OPHI-II is a semi-structured interview there is a quantitative scale which enables a score to be generated for respondents for occupational identity.

The utility of an assessment tool such as the OPHI-II for use in measuring occupational identity within the brain injury survivor population needs to be explored. The following literature was reviewed to explore the assessment tools that measure occupational identity and to examine their potential utility for use with brain injury survivors. Reviewing the utility of an assessment measure of occupational identity was needed to inform the occupational identity scores for brain injury survivors who returned to work compared to survivors who did not return to work. Thus, prior to implementing a study measuring occupational identity the OPHI-II was reviewed with a group of brain injury survivors to determine the feasibility of using the OPHI-II with brain injury survivors. For this review of the literature and the utility examination occupational identity was

defined as a part of identity that reflects an individual's accumulated experience, helps define who we are, and provide direction for the future (Kielhofner, 2002).

The following section begins with a review of the assessment tools designed to measure occupational identity and greater detail on the rationale for choosing the OPHI-II. The article concludes with a discussion on the design, methods, and results of the review undertaken to examine the OPHI-II and its potential use within the brain injury survivor population.

5.1.3 Assessing Occupational Identity

Two Health and Rehabilitation Sciences databases were searched, Scopus and CINAHL, to find literature on assessment tools relevant to occupational identity. These databases were selected as they represent two of the largest databases within the health sciences and they contain a variety of journals representing several disciplines (occupational science, occupational therapy, nursing, psychology, and sociology). The databases were searched with two key phrases "occupational identity" and scale, as well as, "occupational identity" and tool. Fifteen articles arose from the search terms with three of these articles discussing a tool to measure occupational identity (Dellus & Jernigan, 1981; Kielhofner et al. 1998; Melgosa, 1987).

Both Dellus and Jernigan (1981) and Melgosa (1987) developed scales to measure level of occupational identity. The Dellus Identity Status Interview-Occupation (Dellus & Jernigan, 1981) and the Occupational Identity Scale (Melgosa, 1987) were designed using items based upon a definition of occupational identity as an identity that is highly influenced by paid occupational choices. The main purposes of both scales are to identify an individual's level of commitment to an occupational choice. The definition of occupational identity used in development of both scales is not fully congruent to the definition of occupational identity

embraced by the current study, therefore both of these scales were not well suited for use in the current study.

In 1989, Kielhofner, Henry, and Walens developed the Occupational Performance and History Interview (OPHI). The main purpose of the OPHI was to provide both qualitative and quantitative information on an individual's sense of occupational identity, occupational competence and occupational behaviour. Occupational competence is defined as an individual's ability to maintain occupations that are meaningful and satisfying (Kielhofner et al. 1998). Kielhofner defined occupational behaviour as the impact an individual's environment has on daily occupations. The OPHI was widely used but reportedly required improvements in reliability and validity (Kielhofner et al. 1998). Therefore, Kielhofner et al. revised the scale, improving reliability. To assess the validity of the revised OPHI-II Rasch analyses was conducted with 151 raters and 249 participants representing eight countries and six languages. Over 90% of the raters shared similar severity or leniency ratings when rating scale items and the three scales: occupational identity, occupational competence, and occupational settings, were validly measured in 90% of the participants.

In the revised version of the Occupational Performance and History Interview (OPHI-II, Kielhofner et al. 1998) occupational identity is conceptualized as a facet of personal identity influenced by an individual's past and present occupations, a sense of future occupational goals, the ability to appraise abilities, and the ability to find meaning in daily occupations. As the definition of occupational identity used in development of the OPHI-II fits within the definition guiding the current study the OPHI-II was chosen as the assessment measure to review for use within the brain injury survivor population.

5.1.4 The Occupational Performance and History Interview

5.1.4.1 Format of the Occupational Performance and History Interview-II. The OPHI-II (Kielhofner et al. 1998) was designed to measure an individual's level of occupational identity, occupational competence, and occupational behaviour. The OPHI-II consists of a semi-structured interview, which can be scored using the quantitative scale provided, and steps for completing a life history narrative. The life history narrative involves completing a narrative slope which represents the individual's life course (an upward slope indicating a positive event, a downward slope for a negative event) and serves as a way to authenticate the life story of the individual (Kielhofner, Mallinson, Forsyth, & Lai, 2001).

The 32 semi-structured questions are designed to evoke rich discussion surrounding the individual's past and current occupations, interests, and the physical environment including the home environment and the environment where occupations occur. The questions also create a discussion on central positive and negative events over the life course and directions for the future (see Table 5-1 for a sample question). The questions, which fit into the three sub-categories, can be scored using a scale system. Table 5-2 depicts the ratings and descriptive criteria for each rating. The 4-point rating system is provided to facilitate scoring of the OPHI-II. The rating scales are merely a guide to enhance the accuracy of the ratings given by the researcher (Kielhofner et al. 1998).

5.1.4.2 Exploring past research utilizing the OPHI-II. Throughout the occupational science literature, the OPHI-II has been used to gather narrative, as well as, statistical data in a variety of populations. The following section discusses the populations that have been administered the OPHI-II.

Table 5-1 Sample Question of the OPHI-II (Kielhofner et al. 1998, p. 39)

Item	Rating	Criteria
Has personal goals and projects	4	Goals/personal projects challenge/extend/require effort Feels energized/excited about future goals/personal projects
	3	Goals/personal projects fit strengths/limitations Enough desire for future to overcome doubt/challenges Motivated to work on goals/personal projects
	2	Goals/anticipated projects under/overestimate abilities Not very motivated to work on goals/personal projects Difficulty thinking about goals/personal projects/future Limited commitment/excitement/motivation
	1	Cannot identify goals/personal projects Personal goals/desired projects are unattainable given abilities Goals bear little/no relationship to strengths/limitations Lacks commitment or motivation to the future Unmotivated due to conflicting/excessive goals/personal projects

Table 5-2 The 4-Point Rating System of the OPHI-II (Kielhofner et al. 1998, p 37)

Rating	Criteria
4	Exceptionally competent occupational functioning
3	Good, appropriate, satisfactory occupational functioning
2	Some occupational functioning problems
1	Extreme occupational functioning problems

Beginning in 2003, Gray and Fossey explored the impact of chronic fatigue on the experience of engaging in occupations. Shortly after, Levin & Helfrich (2004) looked at the perception of identity and occupational competence in young pregnant adolescents who were homeless. The OPHI-II was also given to a group of men diagnosed with HIV/AIDS to ascertain how the participants viewed their illness and if there was a shift in occupational identity, competence, or the occupational settings after returning to work (Braveman et al. 2006).

Braveman et al.'s (2006) article is one of the few publications that employed the OPHI-II to explore quantitative differences in a sample population. The authors examined the difference in scores within participants in each of the three scale areas (occupational identity, occupational competence, and occupational behaviour) to explore the impact of returning to work on these areas. Two years later research by Ziv and Roitman (2008) utilized the OPHI-II to facilitate an understanding of the occupational lives of elderly individuals and Ennals and Fossey (2009) explored how best to support clients with mental health issues on the path to recovery.

Three articles were published in 2010 that utilized the OPHI-II: one to explore the impact of becoming a father on other occupational roles (Hamilton & de Jonge, 2010), one on the time use and lived experience of individual's with schizophrenia (O'Connell, Farnworth, & Hanson, 2010), and one to explore the role of occupational participation on women with breast cancer (Palmadottir, 2010). One recent article explored the participant's experience of being diagnosed with attention-deficit hyperactivity disorder and/or autism spectrum disorder (Sandell, Kjellberg, & Taylor, 2013).

Overall the central focus of past research using the OPHI-II has been to understand the narrative experiences of individuals who experience a disruption in their lives and the potential impact on their daily occupations. The majority of previous research using the OPHI-II has been

qualitative in nature with only one of the articles using the OPHI-II to gather quantitative data (Braveman et al. 2006). The OPHI-II has been utilized with a wide variety of populations (Kielhofner et al. 2001) however there has been little application of the OPHI-II to the brain injury survivor population. The OPHI-II has been described as easily administered to a wide variety of individuals and can be modified to meet the needs of the interview (Kielhofner et al. 1998) however, further research is necessary to suggest whether the OPHI-II is appropriate for brain injury survivors given the cognitive challenges associated with brain injury.

Cotton (2012) used a fictional case study utilizing the OPHI-II to suggest the role of an occupational therapist in treating a disruption in identity post brain injury. Although, Cotton (2012) suggested eight interview questions revised from the questions within the OPHI-II there was no indication how the questions were revised and whether brain injury survivors were involved in the review process.

According to past authors such as Cotton (2012) and Coetzer (2008) brain injury survivors often demonstrate poor communication skills and cognitive deficits such as shorter attention spans. Due to these complex issues brain injury survivors may find it difficult to participate in a semi-structured interview such as the OPHI-II. For example, brain injury survivors may experience difficulty with some of the wording used in the OPHI-II questions. Further exploration of the feasibility of utilizing assessment measures with brain injury survivors is necessary, however, before this assertion can be supported.

5.2 The Use of Assessments within the Brain Injury Survivor Population

In 1997, The Academy of Neurologic Communication Disorders and Sciences appointed a writing group to examine the use of standardized assessments of communication disorders for brain injury survivors. The results of this group suggested that brain injury survivors should be

included in the standardization of such assessment measures due to unique cognitive-communication issues (Turkstra, Coelho, & Ylvisaker, 2005). Turkstra et al. noted there is a dearth of standardized assessment measures for survivors of traumatic brain injury. A second article arising from the collaboration of this writing group examined the use of non-standardized assessment measures for brain injury survivors and reported brain injury survivors experience difficulty with standardized testing (Coelho, Ylvisaker, & Turkstra, 2005).

Both Turkstra et al. (2005) and Coelho et al. (2005) focussed only on functional assessment measures such as cognitive tests, psychosocial tests (depression, anxiety), executive functioning, memory, and speech assessments. These articles provided implications for some of the difficulties brain injury survivors may face when completing rehabilitation assessments. Based on the results of the articles brain injury survivors would have difficulty responding to some assessment measures and should be involved in the process of standardizing and adapting assessment measures specifically for the brain injury survivor population.

Both articles omitted a discussion surrounding the role of the brain injury survivor in reviewing assessment measures and how to conduct a review. Therefore, the current review process was created to utilize a participatory approach to include the voice of brain injury survivors to review the length, complexity, and ease of use of the OPHI-II.

5.3 Research with Vulnerable Populations

Justo (2004) defined vulnerable populations as individuals with an "asymmetry of power" (p. 67). In his commentary Justo cites the work of Paulo Freire and concurs with Freire that participatory research is an important research format for those who might be susceptible to inequalities in society. Justo notes that "participatory research may be a powerful instrument for avoiding exploitation..." (p. 67). A participatory research approach has been described by

Macaulay et al. (1999) as a research approach that involves a partnership between the researcher and those directly affected by the issue under study. The outcome of participatory research is typically to affect change or generate further knowledge affecting the population (Macaulay et al. 1999).

Often demonstrating cognitive and physical impairments and labelling from society (Nochi, 1998), as well as poor return to work rates (Yasuda, Wehman, Targett, Cifu, & West, 2001) it is not surprising brain injury survivors have been described as a vulnerable population (Keightley et al. 2011). Therefore, research with brain injury survivors lends itself to utilizing participatory research and the participatory review process such as the one utilized in the current study. The following section discusses the methodology underscoring the review of the OPHI-II by a group of brain injury survivors beginning with a discussion of the perspective of the researcher, written in the first person, to indicate it is a personal reflection of the values influencing the collection of data in the current study.

5.4 Researcher Perspective

To guide the methodological decisions of the current study the researcher drew upon a perspective which involves pragmatism as the dominant worldview. According to Creswell and Plano Clark (2011) pragmatism relies on participant views to generate information and participants are often considered members of the research team. In the current study all suggestions for revising questions on the OPHI-II given by participants were considered and discussed with participants, as well as a research team.

As researchers personal values can influence study outcomes therefore measures should be taken to reduce bias. Throughout the review of the questions in the OPHI-II it was necessary

to remain cognisant of values and beliefs by allowing the participants to freely express their thoughts on each question without leading the participants to favored alternatives.

5.5 Methods

5.5.1 Study Context and Ethics

Participants were recruited from a program for brain injury survivors in Ontario. This program is described under a pseudonym, the center, to protect the confidentiality of the research participants. Within the center are several groups that operate on a daily basis. The groups are responsible for creating the monthly newsletters, operating the store within the center, providing general maintenance of the center, making the daily lunch, and answering the center phones.

All brain injury survivors over the age of majority who participate in programming at the center were invited to participate in the study. The study was approved by the ethics board at Western University, as well as, the ethics board governing the collection of data at the center. The ethics board governing the collection of data at the center required the researcher to ascertain whether there was a power of attorney (P.O.A.) for personal decisions. If a participant noted there was a P.O.A. the interview was discontinued until permission could be granted by the P.O.A. for the participant to take part in the study. The ethics board also requested that the researcher make an oral presentation to discuss and inform all members as to the identity and background of the researcher, goals of the study, criteria for inclusion in the study, and benefits and risks to participating.

5.5.2 Study Informants

When discussing the OPHI-II review results the word informants will describe the research participants. The word ‘informants’ is used to suggest research participants were

actively engaged in the research process and were the driving force behind suggestions used in a future study involving the OPHI-II. All of the informants are referred to under a pseudonym they created. To involve the informants in each stage of the research they were asked to generate the pseudonym for the purposes of the study. In participatory research the study participants are typically involved throughout the duration of the research process (Keightley et al. 2011) and at all stages of the research process.

All of the informants were recruited through use of a sign-up sheet at the center. This purposeful sample (Patton, 1990) was recruited from a larger study which explored the shift in occupational identity after a brain injury. These informants were also sought to review the OPHI-II as it was believed they could offer suggestions to enhance the clarity of the OPHI-II. In total seven informants agreed to review the OPHI-II. The average age of informants was between 51 and 60 and all but one informant sustained their brain injury prior to 2005. Informants all reportedly received multiple forms of rehabilitation including: physical therapy, speech therapy, and occupational therapy at the time of injury.

Five informants were working full time at the time of their injury while the remaining two informants were attending school. At the time of the interview one informant reported working part-time, three reporting volunteering part time, and two informants reported volunteering full time. One informant reported no involvement in any volunteer or paid occupations (Table 5-3 reports demographic information).

Table 5-3 Demographic Characteristics of Informants

Pseudonym	Age Range	Years Since Injury	Pre-Injury Occupation	Post-Injury Occupation
Reagan P.	30-40	3	Working full time*	Volunteers part time**
Amelia E.	41-50	33	Working full time	Volunteers part time
John S.	51-60	31	Working full time	Volunteers full time
Mary S.	51-60	50	Full time student	Work part time
Shawn B.	41-50	39	Attending school	Not working
Tommy L.	41-50	24	Working full time	Volunteers part time
Martin J.	61 and over	25	Working full time	Volunteers full time

*Full time work (paid/unpaid) defined as working 30 or more hours per week (Statistics Canada, 2010)

**Part time work (paid/unpaid) defined as working less than 30 hours per week (Statistics Canada, 2010)

5.5.3 Data Collection Strategy

The data was collected through one semi-structured interview. Each interview lasted from one hour and twenty minutes to one hour and forty minutes. Before beginning the interview the researcher explained to the informants the purpose for reviewing the OPHI-II and together the researcher and informant decided to go through each question of the OPHI-II one at a time.

Each question and question option from the OPHI-II was read aloud and informants were asked about the length ("is this too long?"), wording ("are these words familiar to you?", "does anything need to be defined?"), and ease of use ("do you know what the question is asking?"). If the current questions provided in the OPHI-II were highlighted as difficult to understand then informants were asked to give an example of a word or sentence that might be easier to comprehend. After all of the questions were completed informants were asked to provide general feedback on any area they deemed relevant.

All of the statements made by the informants were recorded by hand and later transcribed into a Microsoft Word document. The transcripts were reviewed and grouped into themes to clarify the responses made by informants. All of the suggested edits made by informants were read by a research team comprised of one student researcher, two occupational therapy professors, and one professor of management.

The research team reviewed each suggestion and discussed whether the suggested edits would enhance or detract away from the usability and content of the OPHI-II. The purpose of having a research team review each suggestion made by informants was to help make the decision making process, that is deciding which suggestion to employ in further administration of the OPHI-II, more objective. If only one researcher decided which suggestions to use in future use of the OPHI-II the decision would ultimately be based upon the personal preference of that

researcher instead of a group consensus (O'Donoghue & McKay, 2012). The research team also reviewed the initial grouping of themes to determine if any new themes would be suitable given the data.

5.5.4 Data Analysis

Informants were engaged throughout the research process beginning with the generation of suggestions to enhance the clarity and utility of the OPHI-II. A thematic analysis was utilized to review the data for themes (O'Donoghue & McKay, 2012). O'Donoghue and McKay suggested that thematic analysis, which is reviewing the data to extract common themes, is an important approach to obtain clarity in an under-researched area. The data was read and given initial codes. The codes were grouped together to form themes and achieve a greater depth of knowledge surrounding the suggestions given by informants.

After the thematic analysis and review of initial themes by the research team a decision was made to accept the suggestion made by informants, accept the suggestion made by informants with slight alternations, or reject the suggestion by informants. All of the decisions made were by the research team on a consensus basis with majority rule.

5.6 Results

The research team grouped the informants responses into four categories based on the nature of the feedback. The four categories were: defining terms, familiar language, positive language, and sentence structure. The following sections disseminate the words and/or phrases that fell into these four categories and any alternative suggestions offered by the informants. The chapter concludes with a discussion surrounding the decision making process and the questions which were accepted to be utilized in a future administration of the OPHI-II.

5.6.1 Defining Terms

Informants identified specific words in the OPHI-II that they felt may be difficult for a brain injury survivor to understand and may need further definition. These suggestions were labelled defining terms. The majority of the suggestions given by informants fell into this category. For instance, John S., Mary S., and Tommy L. commented the word *routine* in the sentence, "Are you satisfied with this routine" (p. 94) may require further definition. These informants offered suggestions for appropriate alternative word choices which included "activities" (Mary S., Tommy L.) and "mission or goals" (John S.). Tommy L. noted the word activities would be an adequate replacement as "People with a brain injury know this word."

Use of the word *recreate* in the OPHI-II question, "What are the main things you do to recreate and relax?" (p. 96) was difficult to understand for all seven informants. Instead of the word *recreate* several suggestions were indicated. John S. noted using the phrase "enjoy yourself" instead of *recreate* would evoke more detail from informants as they would understand this question. Three informants commented *recreate* should be replaced by a word or phrase that describes having fun such as: "have fun and relax" (Reagan P.), "have fun" (Mary S.), and "keep yourself amused or have fun" (Tommy L). Other informants felt *recreate* could be replaced by "doing different activities" (Mary S.) or "entertainment" (Amelia E).

The word *work* and *worker* were identified by several informants as being difficult to understand due to multiple meanings of the word to brain injury survivors. The word *work* in the sentence "What is the main thing you get out of your work or studies" (p. 92) was noted by Amelia E. as challenging. When questioned as to why the word *work* could be difficult for brain injury survivors to understand Amelia E. noted, "Work is defined differently by everyone. For some (brain injury survivors) getting out of bed is work" (Amelia E). Amelia E. suggested

instead of the word *work* use "pay cheque" or "do you do paid work?" John S. shared Amelia's thoughts on the difficulty with the word *work* with the brain injury survivor population. John S. noted that the question "What is the main thing you get out of your work or studies" (p. 92) may not be applicable to brain injury survivors. Instead John S. suggested, "Broaden this (question) to include placement at X (name of day program center). A lot of people will be from X (center for brain injury survivors)."

Similarly, two informants noted the importance of clarifying the word *work* in the sentence, "Tell me about the place where you work" (p. 96). Both John S. and Martin J. commented that the word *work* may too broad. Martin J. noted "work is defined different (*sic*) for brain injury survivors." John S. commented, "Need to be more specific. For this population replace work with X (name of day program center)." Martin J. added a suggestion to alter the sentence, "You should be more specific for this population (brain injury survivors). Use something like, tell me about the X (day program center)."

The word *worker* found in the sentence "I understand you are a worker responsible for your _____" (p. 92) was also suggested as a word that may have multiple meanings for brain injury survivors. Martin J. remarked, "Hmm, you may need to define *worker* this (word) means different things for everyone. Tommy L also added this sentence may be confusing due to the word *responsible*. When prompted for suggestions how to define *responsible* Tommy L was unsure. The researcher questioned the effectiveness of using the sentence "I understand you are a worker who has to_____" and Tommy L. felt this was enough clarity for survivors to be able to answer the question.

Tommy L. also expressed difficulty with the word *responsibilities* in the question "In addition to your work/studies/other responsibilities is there anything else that takes up a lot of

your time and energy that is really important to you" (p. 93). Tommy L. felt this was a cumbersome sentence and the word *responsibilities* may be difficult to understand. Instead, Tommy L. suggested asking, "Do you have any hobbies."

The importance of the words used within the interview questions was also demonstrated by informants who commented on the familiarity of the language used. The informants noted several words that are suggested in the OPHI-II but were not familiar words. Informants mentioned if they were unsure about the meaning of these words, other brain injury survivors may not understand them as well.

5.6.2 Familiar Language

Two informants, John S. and Martin J., identified two words as language not typically used by brain injury survivors. The use of the words *free time* in the sentence, "Do you have free time" (p. 97) was suggested as "not familiar" by John S. He asked for clarity regarding what was meant by *free time* and noted if he was not familiar with this word it is likely other brain injury survivors may not use this word as well. John S. thought "time to do things when not working" may be a suitable replacement.

The word *obstacles* found in the sentence "When you run into obstacles how do you handle it?" (p. 97) was indicated by Martin J. as an unfamiliar word. Martin J. suggested that instead of using the word *obstacles* to understand how the person deals with a difficult situation ask, "When you run into something you can't do, how do you handle it?"

Aside from the use of words common to all brain injury survivors the informants indicated the type of words used was also an important consideration. Informants suggested using positive words, or words that do not evoke negative feelings, is a key step to interviewing a brain injury survivor.

5.6.3 Positive Language

Informants paid particular attention to the nature of the language that was used in the OPHI-II. The informants were very cognisant of the use of language that could be construed as negative. One informant articulated, “We (brain injury survivors) already experience a lot of negative, we don’t need any more negative things our way.” (Reagan P.).

Two sentences in particular were defined as negative by several informants. One sentence, “If you were feeling depressed or upset, could you expect your family, spouse, roommate, etc to give you a hand?” (p. 95) appeared negative due to the word *depressed.* Informants felt *depressed* was a word that may evoke negative feelings. Mary S. suggested, “You should avoid negative language, maybe replace with feeling low.” Martin J. suggested changing “depressed to upset.”

A second sentence, “What do you consider your biggest failure in life.” (p. 98) seemed to represent a negative question for some informants (Martin J., Amelia E., Tommy L.). Martin J. commented the word *failure*, “Feels like a very negative word. I think you should replace it with drawbacks.” Two other informants felt using the word “challenges” would be a way to ask the same question in a more positive manner (Amelia E., Tommy L.). The final category identified upon reflecting on the informant’s suggestions focussed not on the content of the questions but the organization of the questions.

5.6.4 Sentence Structure

One suggestion made by an informant fell into the sentence structure category. This category refers to the structure of the sentence as opposed to the specific wording used. One informant, Amelia E. felt the question “Tell me a little about yourself” (p. 92) would be too broad for someone with a brain injury to respond to. Instead Amelia E. felt to create a rich

dialogue asking a more specific question such as “What do you do during the day?” would work better. Aside from the categorical comments referring to specific words and/or questions several of the informant’s comments were general comments that could be applied to several questions throughout the OPHI-II. These comments were grouped into a general feedback category.

5.6.5 General Feedback

Informants noted several points that may be useful when administering the OPHI-II to brain injury survivors. One informant (Martin J.) commented on how to efficiently move through the questions on the OPHI-II. Martin J. remarked, “Some brain injury survivors may need to be re-directed more frequently, they may ramble.” Three informants noted the importance of the length of the questions. Tommy L, Mary S., and Amelia E. all noted the questions in the OPHI-II should be specific. Amelia E. suggested all questions be “Short and to the point.” Mary S. noticed that questions that involved “specific examples” would be easier for her to answer.

Four informants felt the length of the OPHI-II may be too long unless breaks are offered throughout (Mary S, Reagan P, Amelia E, Martin J). The informants felt if the questions were too long informants may become tired or frustrated. One informant (Reagan P.) offered feedback on dealing with the frustration that may arise. Reagan P. remarked, “Some informants may get frustrated at their inability to understand or answer questions. You need to be sensitive to this and watch for agitation.” Reagan P. offered a solution for helping to ensure informants can understand the questions and not get frustrated, “Have back up words ready in case informants don’t know what the heck you’re saying. If they look confused, define the word you just said.”

After each comment made by informants was categorized the next step in the review was to closely examine each comment. The specific comments were reviewed by the four member research team through an iterative decision making process. The following section discusses the

decision making process utilized to review each suggested revision and whether or not the revision would be utilized in a future study using the OPHI-II.

5.6.6 Decision Making Process

Informants in the current study identified several changes to enhance the utility of the OPHI-II for brain injury survivors. Through a thematic analysis the suggested questions were grouped into four thematic areas: defining terms, familiar language, positive language, and sentence structure. There were also four broad comments that were grouped into a general feedback category. An additional step in the review of the OPHI-II questions was deciding if the suggested words and phrases should be used when the OPHI-II is administered in a future study. The purpose of this additional review was to consider the ramifications of using the alternative words and phrases. Therefore, instead of one member of the research team arbitrarily deciding which suggestions should be implemented when using the OPHI-II a research team met to discuss each review comment.

The research team paid particular attention to whether the suggestions made by the informants would alter the meaning of the questions or simply provide greater clarity on the nature of the question, which was the intent of the review. The comments/suggestions made in each category (defining terms, familiar language, positive language, sentence structure, general feedback) are discussed in the following sections.

5.6.6.1 Review of defining terms. Several words were identified by informants as requiring further clarification (routine, recreate, work, worker, and responsibilities). The suggested word change for each of these words was carefully considered. One suggested alternative for the word *routine* was the word activities. Upon consideration of the word activities the research team felt using the word activities would alter the nature of the question.

Upon hearing the word activities some informants may think only about physical activities and leave out important pieces of their daily routine. But, to enhance the clarity of the question the word routine will be defined during the interview as, “Habits throughout the day” (Webster’s Dictionary, 2003).

The word *recreate* was described by all informants as difficult to comprehend. Given it was a unanimous suggestion by informants the research team felt it was important to use a word with greater clarity. The sentence suggestion by Reagan P (“What do you do to have fun and relax”) was chosen as a suitable replacement to what do you do to *recreate* as it is also suggested as an alternative question in the OPHI-II. The research team agreed “What do you do to have fun and relax” was easy to comprehend and should generate discussion on leisure activities and hobbies.

The majority of the survivors in the review noted some clarity was required with the word *work* and *worker*. These are not typically words that would be defined as difficult to understand. However, it seems the brain injury survivors in the study recognized many survivors experience difficulty returning to work (Yasuda et al. 2001). Many brain injury survivors experience cognitive and physical impairments that make engaging in occupations difficult (Klinger, 2005; Wilson, 2010). The informants in the current study suggested that the words *work* and *worker* can have various meanings to brain injury survivors who have unique experiences returning to occupations.

To accommodate for the varying definitions of work and worker for brain injury survivors the informants in the current review felt the word *work* and *worker* should be defined or clarified when the OPHI-II is administered. The research team agreed with this suggestion and decided any future use of the OPHI-II with brain injury survivors will involve specifying what is

referred to as paid work ("Work you do to get a pay cheque," Amelia E.) or volunteer work ("Work you are not paid to do", Amelia E.). Any future administration will also involve ascertaining how the informant is defining work. By understanding how the interviewee is defining work then each question can be tailored based on their definition. For example, if an informant defines work as volunteer work each question dealing with work will be referred to as volunteer work.

The final word considered by the research team was the word *responsibilities*. One informant expressed a need to define this word for better comprehension (Tommy L.). Tommy L. identified a suitable alternative as "Do you have any hobbies?" The research team felt using the word hobbies may limit the responses of the informants. Therefore, it was decided to maintain use of the word *responsibilities* during interviews but define it as "a duty or task that you are required or expected to do" (Webster's Dictionary, 2003) to enhance the clarity of the question.

5.6.6.2 Review of familiar language. Two informants identified *free time* and *obstacles* as unfamiliar words. One informant noted that the use of unfamiliar words may lead to confusion and difficulty in answering the question (John S.). John S. suggested an alternative to the word *free time* which he felt was easier to comprehend ("Time to do things when not working"). The research team felt this was a viable alternative as it was described as familiar language but still captured the essence of the definition of free time. The research team also thought it was important to add, "Enough time to yourself" because it describes having the ability to decide what happens during free time. Therefore the question, "Do you have enough time to do things when you are not working, enough time to yourself," would describe multiple aspects of free time.

The second word described as not familiar by one informant was the word *obstacles*. Martin J. articulated this word would not be familiar to other brain injury survivors and may hinder the response to the questions. Martin J. thought about several alternatives and ultimately thought an adequate replacement would be, "When you run into something how do you handle it?" By removing the word obstacles the complexity of the sentence was decreased. The research team agreed the alternative sentence would be familiar to survivors and the alternative sentence would still capture the informants experience with a difficult situation.

5.6.6.3 Review of positive language. Informants in the current review not only considered the context of the questions in the OPHI-II but they also commented on the nature of the language used within it. The informants were acutely aware of the feelings that would be associated were certain words and questions. Two words in particular, *depressed* and *failure*, seemed to resonate with informants and were described as "negative words" (Mary S.). The word *depressed* was described as a word that may evoke a strong emotional reaction from brain injury survivors who may have faced depression in the past or are currently dealing with depression.

The research team agreed that the word *depressed* may be a word with an alternative meaning for brain injury survivors. Brain injury survivors are vulnerable to experiencing symptoms of clinical depression after their injury (Kreutzer, Seel, & Gourley, 2001; Vrkljan & Miller Polgar, 2007). The OPHI-II is not attempting to explore symptoms of depression it may be best to avoid terms that may have significance for brain injury survivors who experienced depression in the past. The alternatives that were suggested, "feeling low" (Mary S.) and "upset" (Martin J.) were considered by the research team. The research team felt that either of these alternatives would capture the essence of the question and describe a difficult or sad time in the

informant's life. But the use of "feeling low" or "upset" would likely not bring with it the negative feelings associated with the word depressed.

The second word identified as having a negative connotation was the word *failure*. *Failure* was described as a "very negative word" (Mary S.) that would lead to a difficult emotional response from informants. The research team reflected on the use of the word *failure* and discussed eliminating this word and using one of the alternatives suggested by informants: "drawbacks" (Martin J.) or "challenges" (Amelia E., Tommy L., respectively). The research team felt that the word *failure* was a powerful word that could evoke a lot of detail and generate a meaningful discussion. Therefore, it was decided the word *failure* would be maintained during future administrations of the OPHI-II. Maintaining use of the word *failure* was done so along with the awareness that using the word *failure* could call to mind a difficult memory that may make the informant upset. Appropriate de-escalation strategies such as re-direction or giving time to calm down may have to be employed.

5.6.6.4 Review of sentence structure. The final category reviewed by the research team was the sentence structure category. Amelia E. felt the question, "Tell me about yourself" (p. 92) was too broad for a brain injury survivor to respond to. The research team agreed this type of open ended question may not be specific enough for a brain injury survivor. Instead, the alternative suggestion made by Amelia E. "What do you do during the day?" would keep the question specific and focussed on daily occupations. One of the intentions of using the OPHI-II in a future study is to ascertain information on occupational identity and daily occupations. By asking the question, 'What do you do during the day?" information on daily occupations could be elicited in a focused question. Brain injury survivors often experience a decrease in working

memory and mental speed (Malm et al. 1998). Therefore, keeping the questions short and specific may elicit greater feedback.

5.6.6.5 Review of general feedback. Six of the informants also provided general comments on administration of the OPHI-II within the brain injury survivor population. The three areas denoted as important to increasing the utility of the OPHI-II were keeping questions specific, providing alternative wording and examples, and providing regular breaks. Based on the feedback of the informants the research team agreed that remaining cognisant to all three of these areas can make the OPHI-II easier to administer to brain injury survivors.

As noted in the preceding section brain injury survivors often require more direct questions to remain focussed (Malm et al. 1998) and experience cognitive impairments (Deutsch, Kendall, Daninhirsch, Cimino-Ferguson, & McCollom, 2006) which may lead to the need for more frequent breaks to effectively answer interview questions. By keeping the interview questions brief and direct the informants may be better able to answer the question and generate dialogue.

The final area recognized by informants in the current study is the need to provide specific examples regarding what the question is referring to. Four informants: Martin J., Tommy L., Mary S., and Amelia E., felt that providing examples to clarify questions may enhance the understanding of the question. The research team agreed it was a valuable technique to improve the clarity of interview questions and elicit accurate responses. Brain injury survivors often experience difficulty with the interpretation and understanding of external information (Golisz,

2009). Therefore, specific examples might facilitate an understanding of the interview question and give the informant a context for responding[1].

5.7 Discussion

The current study sought to explore the potential of involving brain injury survivors in the review of an assessment measure, the Occupational Performance and History Interview-II (Kielhofner et al. 1998), to measure occupational identity. The study also involved a research team in the decision making process when decided which suggestions would enhance the clarity and ease of use of the OPHI-II while preserving the integrity of the measure. The following discussion section examines the pitfalls and benefits of involving brain injury survivors in the research process, as well as, the importance of additional input by a research team. The discussion section concludes with a note on directions for future research and limitations of the current study.

5.7.1 Inclusivity of Brain Injury Survivors

Inclusivity of the brain injury survivor population was identified as an important step when conducting research within the brain injury population (Coelho et al. 2005; Turkstra et al. 2005). Brain injury survivors may experience difficulty completing standardized assessment measures due to cognitive and physical limitations and shorter attention spans (Coetzer, 2008). When developing an assessment measure involving a representative sample of brain injury survivors it may be a key step to develop an effective tool that fits the needs of this population.

[1] All of the suggested revisions denoted above were incorporated into the OPHI-II and utilized in a future study. Due to copywrite protection and the scatter of revisions the questions edited in the OPHI-II cannot be presented in their entirety, instead the fragmented sequence of revisions were presented in the preceding section.

The results of the current study support the assertion that brain injury survivors may suggest certain words and/or phrases that those without a brain injury may not expect to create an issue. For example, several informants in the current study suggested the word *work* has different connotations for brain injury survivors due to the difficulty obtaining paid work. The current literature base on brain injuries has devoted a great deal of attention to the study of work and studies report very low return to work rates (Wehman, Targett, West, & Kregel, 2005; Yasuda et al. 2001). But without the inclusion of the brain injury survivor perspective it is unknown whether specific words that are used quite liberally in the English language would be clarified during administration of the OPHI-II.

By including the voice of the brain injury survivor a new perspective emerged regarding word choice, as well as, the emotion associated with certain words. Several participants suggested the word depressed and failure may lead to thoughts of sadness. The author of the current dissertation posits this focus on the emotion associated with certain words may not have arisen if brain injury survivors were not consulted and asked to provide feedback on the nature of the words within the OPHI-II.

Overall, results from the current study suggest that collaborating with brain injury survivors to review assessment measures can lead to more focussed questions and clarity on the word choice that may be more suitable to brain injury survivors. This approach, however, is not without its challenges and a brief discussion on the nature of such challenges follows.

5.7.2 Challenges of the Inclusive Approach

The current study sought to include the perspective of brain injury survivors to review an assessment measure to be utilized in a future study with brain injury survivors. Including the voice of the brain injury survivor created several obstacles over the course of the review. The

first challenge and possibly the most notable was the lack of literature to guide the collection of such feedback. Before beginning the review the literature was searched for publications detailing how the review process should be done. The search yielded no results suggesting there is little published describing how such a review is conducted with brain injury survivors.

To combat this lack of available resources the researcher discussed with each participant the best approach to review an assessment measure such as the OPHI-II. After consultation with the research team and the informants the review was conducted by examining each question of the OPHI-II and questioning informants regarding the length, ease of use, and comprehension of the questions. Although this method of review may have suited the aims of the current study it is unknown whether this type of review would be beneficial for other assessment measures.

The review process itself was also a very time consuming procedure. Each of the seven interviews lasted over an hour in length and involved a great deal of discussion and clarification between informant and researcher. Five of the informants were offered a break during the discussion due to appearing fatigued. Therefore, a challenge of such a review process is balancing the need to review each question with the physical limitations of the informants and remaining cognisant to the needs of the informants.

5.7.3 The Research Team Approach

After receiving feedback from informants the researcher met with a three person research team to discuss each suggestion offered by informants. Together the research team reviewed each suggestion offered by informants and discussed whether the suggestion would alter the nature of the question or provide clarity to questions. The aim of the research team was to reduce bias when deciding which suggestions to use and make the decision making process a

collaborative effort. Upon reflection of involving a research team in the decision making process several strengths and critiques emerged regarding this process.

The current study utilized a research team with a variety of disciplinary backgrounds (psychology, occupational therapy, business management) and each member of the research team presented a different outlook on the implications of each suggestion. For example, the research team member with a background in psychology mentioned the association of the word *depressed* may be due to higher rates of depression in the brain injury population, supported by past authors as well (Kreutzer et al. 2001). Therefore use of the word *depressed* could lead to focussing on clinical depression instead of focussing of thoughts of sadness, as the original OPHI-II question intended. The researcher with a disciplinary focus in occupational therapy brought attention to the physical difficulties a brain injury survivor may experience and the distinction between what a brain injury survivor defines as work and what those without a brain injury define as work. Therefore, the suggestion offered by one informant to ascertain how the individual is defining work was an accepted and very useful suggestion. The different view each research team member offered was a strength of this interdisciplinary approach.

Another strength of this process was having an open dialogue with the research team members regarding the implications of utilizing each suggestion before implementation. The author of the current dissertation suggests the research team approach strengthened the results of the study and helped to provide the necessary consideration to each suggestion offered by informants. The research team approach however also offered two challenges which should be noted.

To give the necessary attention to each suggestion offered by informants a lengthy review process was undertaken by the research team as a group. This involved going through each

suggestion one at a time and discussing the ramifications of adhering to each suggestion. The process itself was time consuming and required a great deal of focussed attention at one time. Secondly, when working with any research team the potential for a divergence of thought and an inability to reach consensus is present. Fortunately, in the current study a consensus was reached for each item but the potential for disagreement should be considered before beginning any research team approach.

5.8 Limitations and Future Research

The view of this group of brain injury survivors does not represent the views of all brain injury survivors. The informants in the current review offered their personal perspective on an assessment measure designed to generate rich dialogue on an individual's occupational history, goals, and environment. Future research should explore the suggested edits provided by informants with a large scale sample to be more generalizable to the brain injury population.

The current review was an initial exploration of the utility of the OPHI-II with a group of brain injury survivors. The comments and suggestions indicated by the informants were not tested in any way nor validated to determine if any clarity would be gained (or lost) by the use of the suggested edits. Future research could address this limitation by statistically evaluating (standardizing) the use of the suggested edits with a group of brain injury survivors.

Although the OPHI-II is designed to be a flexible, semi-structured interview the research team felt it was pertinent to review the OPHI-II questions with brain injury survivors. Although this review was a very preliminary exploration into the OPHI-II and it's suitability for brain injury survivors it is a stepping stone to promote further exploration. The OPHI-II is a widely used assessment measure (Kielhofner et al. 2001) but gaps still persist as to how to use this tool with brain injury survivors.

The results of this study suggested the OPHI-II is an appropriate measure for use with brain injury survivors and with minor re-wording and clarification of questions it can be used to gather a rich collection of data on occupational identity. The OPHI-II interview questions have been described as an appropriate length and with accompanying breaks can be easily administered to brain injury survivors.

These results may be especially pertinent for researchers who wish to use the semi-structured interview questions provided in the OPHI-II but are unsure of the wording to use within the questions. This review provides alternative questions which have been suggested by other brain injury survivors. According to the survivors in the current review the alternative questions and wording can enhance the utility of the OPHI-II when conducting interview brain injury survivors.

Future research should include brain injury survivors in the standardization of assessment measures. Research standardizing assessment measures for brain injury survivors would involve having a group of brain injury survivors complete the assessment measure and a group of inter raters who independently rate the question responses. At a minimum the voice of the brain injury survivor should be included, as done in the current review, to informally review an assessment measure and provide feedback regarding the appropriateness of the questions.

5.9 References

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Chapter 6 Examining Occupational Identity Scores for Brain Injury Survivors Who Returned to Work and Those Who Did Not

6.1 Introduction

Brain injury survivors experience difficulty returning to work (Doctor et al. 2005; Yasuda, Wehman, Targett, Cifu, & West, 2001). Much of the literature on returning to work after a brain injury has focused on exploring the factors that contribute to low employment post brain injury (Stergiou-Kita, Yantzi, & Wan, 2010) as well as, the negative ramifications of not resuming any primary occupations following brain injury (Nair, Turner-Stokes, & Tyerman 2008). What is less apparent from this knowledge base is the impact of not re-engaging in occupations on occupational identity. To facilitate this exploration of occupational identity a study was conducted to examine the difference in occupational identity for brain injury survivors who return to work compared to those who do not return to work.

6.1.1 Returning to Work Following Brain Injury

The following literature was reviewed to explore the negative consequences of not returning to work after a brain injury and the importance of considering the impact of not returning to work on occupational identity. This literature provided a backdrop that informed this study on examining a shift in occupational identity for brain injury survivors.

In 1995, Ip, Dornan, and Schentag examined the factors that were significant predictors of increased return to work outcomes following brain injury. Factors such as low perceptual motor skills, alcohol use, and older age were related to lower rates of returning to work. These findings were later supported by Nair et al. (2008). Nair et al. examined the effectiveness of a vocational rehabilitation program and found that the brain injury survivors who experienced the most difficulty returning to work had poorer memory and reasoning skills and lower motivation.

Although the knowledge base on brain injuries has explored the impact of returning to work considerably, very few authors in occupational science have specifically examined this.

Two authors in occupational science explored the consequences that can arise from an inability to resume occupational roles after a brain injury (Klinger, 2005; Shaheed Soeker, 2011). Both Klinger and Shaheed Soeker suggested that brain injury survivors can experience a decrease in self confidence when unable to return to occupational roles and this can also lead to a decrease in occupational participation. Although both Klinger and Shaheed Soeker began discussions concerning participation in occupations following brain injury neither article specifically focused on the impact of not resuming occupational roles after a brain injury on occupational identity.

6.1.2 Returning to Work and Occupational Identity

Kielhofner (2002) defined occupational identity as a concept that reflects an individual's accumulated experience, helps define who we are, and provides direction for the future. The link between re-engagement in paid work and the re-development of an occupational identity first received attention in 2001 and 2006 (Braveman & Helfrich, 2001; Braveman, Kielhofner, Albrecht, & Helfrich, 2006). For instance, Braveman and Helfrich and Braveman et al. utilized the Occupational Performance and History Interview-II (OPHI-II, Kielhofner et al. 1998) to explore occupational identity and the role of returning to work after a life disruption (diagnosis of HIV/AIDS). In both studies an inability to resume former occupations was related to a lessened sense of occupational identity. Participants who experienced a poorer occupational identity also described themselves as less confident and uncertain about the future. Braveman and Helfrich's study also revealed the participants who described their occupational identity based upon the occupational roles they maintained prior to the diagnosis of HIV/AIDS had a

weaker post diagnosis occupational identity (demonstrated by lower scores on the Occupational Identity Scale of the OPHI-II).

Later, in 2012 Cotton suggested resuming occupations may be an initial step to re-building occupational identity after a brain injury and the re-development of an occupational identity is an important role in occupational therapy practice. Other authors in occupational science (Vrkljan & Miller Polgar, 2007; Wilson, 2010) suggested a relationship between the re-development of a positive occupational identity and resuming daily occupations such as work. For instance, Vrkljan and Miller Polgar explored a participant's narrative reflection on the transition from being able to drive to driving cessation. Upon being unable to resume former occupations the participant described a change in his routine and thoughts of sadness due to the inability to re-engage in occupations.

Research such as Vrkljan and Miller Polgar (2007) supports the notion that a decrease in occupational participation can have a negative impact on occupational choices and can affect the re-development of occupational identity. There have also been other relationships suggested that can enhance or constrain the re-development of occupational identity after a brain injury (Smith, Rogers, Wallen, & Boisvert, 2011; Wilson, 2010). These relationships which include the role of competence and contextual factors are discussed below.

6.1.3 Exploring Occupational Identity

6.1.3.1 Returning to work and competence. In 1991 Christiansen posited a connection is present between engagement in occupations and viewing oneself as competent. Christiansen noted that experiencing success in daily occupations facilitates the development of a view of oneself as a capable and competent individual.

The development of competence has been linked to the process of occupational adaptation (Klinger, 2005). Klinger described occupational adaptation as "changes or adaptations in doing that enable people to respond to internal or external stressors in order to preserve occupational participation" (p. 9). But the relationship between the development of competence and occupational adaptation has not been linked to the re-development of occupational identity after brain injury. Further research is necessary to support the relationship between the resumption of occupations following brain injury, the development of competence, occupational adaptation, and their relationship with occupational identity re-development.

6.1.3.2 Contextual factors and the re-development of occupational identity. Laliberte Rudman and Dennhardt (2008) and Phelan and Kinsella (2009) both articulated the importance of exploring the contextual backdrop to occupational identity. These authors suggested exploring occupational identity with an awareness of how social, political, and cultural factors can inhibit or facilitate the development of occupational identity could create a more complete picture of how occupational identity develops.

Martin, Smith, Rogers, Wallen, and Boisvert (2011) and Wilson (2010) explored the impact of major life changes on occupational participation. Martin et al. for example interviewed mothers receiving treatment for addiction and found changes to occupational participation and subsequently to occupational identity. Likewise, Wilson found after surgery for weight loss changes to occupational participation ensued. Both authors noted the physical environment played a role on which occupations participants engaged in and therefore, indirectly, the environment shaped occupational identity.

Both Martin et al. (2011) and Wilson (2010) briefly highlighted that the physical environment can play a role in the re-development of occupational identity. However, there is no

published literature that discusses the impact of contextual factors on the development of occupational identity after brain injury.

According to Stergiou-Kita, Yantzi, and Wan (2010) brain injury survivors can often experience a disconnection from family and loved ones. Those survivors who do not participate in rehabilitation services or have support from loved ones may experience a lack of opportunity to build skills, re-develop competence, and re-establish a sense of occupational identity. Thus, the lived context may contribute to ways that identity is shaped post-injury. For instance, research is needed to examine and explicate the relationship between contextual factors and occupational identity, as well as, the relationship that re-engagement in occupations shares with the re-development of occupational identity after occupational loss or disruption such as those with brain injury.

In addition, Whiteford (2000) suggested that marginalized individuals who do experience a lack of participation in occupations are susceptible to a decrease in overall wellbeing and a decrease in their sense of identity. To date, however, research has not examined whether brain injury survivors who do not resume occupational roles would experience a decrease in their sense of occupational identity. Thus, research into the experiences of those with brain injury that do not resume previous occupations or take up new occupations as well as those that re-engage in occupations may inform an understanding of the re-development of identity post disruption or loss.

6.2 Study Rationale

Kielhofner (2008) suggested rebuilding an occupational identity is a key step to be able to adapt to a major life event. Expanding the knowledge on the relationship between returning to

paid or unpaid work and occupational identity is then especially important for an individual who experiences a major life event such as a brain injury.

A review of the literature on occupational identity suggested there is limited empirical research exploring the re-development of an occupational identity upon the resumption of paid or unpaid work (Bryson-Campbell, Shaw, O'Brien, Holmes, & Magalhaes, 2013). Thus, future research needs to elaborate on the factors and processes that might support the re-development of occupational identity. Further to this, research is indicated to explore the role of competence and occupational adaptation in the re-development of occupational identity and if occupational identity is positively affected by the return to work. Thus, the rationale of the current study was to examine the role of returning to work after a brain injury on occupational identity.

The knowledge gained from considering the role of maintaining participation in occupations on occupational identity can also be used to inform rehabilitation models of care for brain injury survivors. The current model focuses on the rehabilitation of physical injuries with little attention directed towards facilitating participation in new or modified occupations (Klinger, 2005; Nochi, 1998). Research exploring if resumption of occupations contributed to occupational identity following brain injury can be used to offer new directives for rehabilitation models.

6.3 Methods

6.3.1 Research Purpose and Hypothesis

This chapter is the final study of a mixed methods inquiry undertaken to examine the shift in occupational identity. The first study examined the shift in occupational identity after a brain injury through grounded theory analysis (Corbin & Strauss, 2008). Following the completion of Study 1 an assessment measure, the Occupational Performance and History

Interview-II (OPHI-II, Kielhofner et al. 1998), was reviewed to suggest the appropriateness of this tool for use within the brain injury survivor population.

The current study utilized the reviewed version of the OPHI-II to examine if there was a relationship between occupational identity for brain injury survivors who had resumed worker roles (paid or unpaid) when compared to those who did not return to work. It was hypothesized brain injury survivors who resumed paid or unpaid occupations would indicate a positive occupational identity (indicated by higher scores on the OPHI-II Occupational Identity Scale) compared to survivors who did not resume primary occupational roles.

6.3.2 Ethics

Participants were recruited from a program for brain injury survivors in Southwestern Ontario. This program is described under a pseudonym, the center, to protect the confidentiality of the research participants. Within the center are several groups that operate on a daily basis. The groups are responsible for creating the monthly newsletters, operating a convenience store, providing general maintenance of the center ,making the daily lunch and baked goods to sell, and answering the center phones. All brain injury survivors who participate in programming at the center were invited to participate in the study. The study was approved by the Research Ethics Board at Western University, as well as, the ethics board governing the collection of data at the center.

The ethics board governing the collection of data at the center required at the beginning of each interview the researcher ascertain whether there was a power of attorney (P.O.A) for personal decisions. If a participant noted there was a P.O.A; the interview was discontinued until permission could be granted by the P.O.A for the participant to take part in the study. The ethics board also requested that the researcher make an oral presentation to discuss and inform all

members as to the identity and background of the researcher, goals of the study, criteria for inclusion in the study, and benefits and risks to participating.

6.3.3 Sample

In total, 16 participants were recruited to participate in the study. Participants were recruited from a center that houses programs and activities for brain injury survivors. Following an oral presentation given to all members interested participants were asked to speak to the researcher to set up a time to take part in the interview. All participants who indicated interest were given a designated time slot that fit within their schedule and a location to meet was established.

6.3.4 Data Collection

Participants who signed the letter of consent (Appendix B) were given a demographic questionnaire (Appendix C) to collect descriptive statistics on the nature of the sample. The participants were then administered the reviewed version of the Occupational Performance and History Interview-II (OPHI-II, Appendix E). The OPHI-II involves the completion of a semi-structured interview and the rating of scale questions. All interviews were audio recorded to help ensure accuracy in scoring the participant's responses to interview questions.

6.3.5 Measures

6.3.5.1 Demographic questionnaire. The demographic questionnaire consisted of 15 questions to obtain clarity on the nature of the sample. The intent of administering a demographic questionnaire was to be able to provide detailed information regarding the nature of the sample, work status, and the context of the sample (for example, level of social support and current financial status).

6.3.5.2 The Occupational Performance and History Interview-II. The OPHI-II (Kielhofner et al. 1998) was designed to measure an individual's level of occupational identity, occupational competence, and occupational behaviour. The concepts that drove the creation of the OPHI-II were based on the Model of Human Occupation (Kielhofner, 2008). The Model of Human Occupation (MOHO) has been described by Kielhofner as one of the first models to articulate the influence of motivation, performance, and organization on occupational behaviour. The MOHO can be an especially valuable model to guide exploration into a life disruption and the impact of such a disruption on engagement in occupations. The questions guiding the OPHI-II focus upon determining an individual's level of motivation or volition and the resulting impact on performance in occupations, as well as the role of the environment on an individual's ability to manage occupational roles.

The semi-structured interview questions of the OPHI-II can be scored using a quantitative 4 point scale and can create the life history narrative of the individual. The life history narrative involves completing a narrative slope which represents the individual's life course (an upward slope indicating an event described as positive by the individual, a downward slope for a negative event) and serves as a way to authenticate the life story of the individual (Kielhofner, Mallinson, Forsyth, & Lai, 2001).

To embody the central tenants of the MOHO the OPHI-II is designed to invoke rich discussion surrounding the individual's past and current occupations, interests, and the physical environment including the home environment and the environment where occupations occur. All of these factors support the researcher in developing a sense of the effect of the life disruption on an individual's occupations. The questions also invoke a discussion on central positive and negative events over the life course and directions for the future.

6.3.6 Data Analysis

All data collected was entered into SPSS. The demographic questionnaire was analyzed using frequency statistics. To calculate a score for each of the three sub-sections (occupational identity, occupational competence, and occupational settings) all of the numbered scale responses were added together. The total score for each sub-section was entered into SPSS and utilized in a Mann-Whitney non-parametric test due to tests of normality indicating the populations did not follow a normal distribution. Participants were grouped into a working group (coded as 1) or non-working group (coded as 0), based on the response reported on the demographic questionnaire. The scores on the occupational identity scale were compared for each group to determine if there was a significant difference in occupational identity scores between these two groups. Following the Mann-Whitney test a Spearman correlation analysis was run between occupational identity, occupational competence, and occupational settings to determine if there was a significant relationship between these three scale items.

6.4 Results

As indicated by the demographic statistics (Table 6-1) the participants ranged in age from 30 to 60 years old (M= 43.6, SD= 7.03). Nine of the participants were female, seven were male. Prior to their injury 15 of the participants were either employed or attending school and one participant was taking care of her children at home. After their injury 12 of the participants began to participate in new occupations, 10 chose volunteer occupations while the other two participants resumed paid work.

At the time of the interview nine of the participants who returned to work reported being recipients of financial funding from insurance settlements. The remaining three participants who returned to work reported receiving employment insurance or Ontario Disability Support

Program (ODSP). Three participants who did not return to work reported receiving government social assistance and the remaining non-working participant received ODSP funding. All of the participants who returned to work reported having very supportive family/friends. The non-working group all reported somewhat or not supportive family and/or friends.

As indicated in Table 6-2 occupational identity was positively correlated with both occupational behaviour (r_s = .591, p= .02) and occupational competence (r_s = .851, p= .000). And finally, occupational competence and occupational behaviour were positively correlated (r_s = .479, p= .05).

The Mann Whitney test for independent groups of the non-working (M= 42.00, SD= 2.87) and working (M= 58.00, SD= 2.26) groups indicated a significant difference between occupational identity and work status (U (14) = .000, p= .01). Cohen's d was calculated and indicated a moderate to large effect was present (d=-5.97).

Table 6-1 Demographic Profile of Participants

Participant Pseudonym	Gender	Age Range	Pre-Injury Occupation	Post-Injury Occupation	Work Status	Financial Status	Family Support
YS	Male	30-40	Associate at a store	Clerical work	Volunteer	Insurance settlement	Very supportive
DA	Female	41-50	Editor	Center volunteer	Volunteer	Insurance settlement	Very supportive
KC	Female	30-40	Cashier	Clerical work	Working	Employment insurance	Very supportive
KP	Female	41-50	Babysitter	Cashier	Working	Insurance settlement	Very supportive
MP	Female	30-40	Student	N/A	Not Working	ODSP	Not supportive
BB	Male	41-50	Various odd jobs	Wood work	Volunteer	Insurance settlement	Very supportive
JN	Male	41-50	Maintenance	Car service	Volunteer	Insurance settlement	Very supportive
RM	Female	51-60	Mother	N/A	Not Working	Social assistance	Somewhat supportive
DB	Male	41-50	Operator	Center volunteer	Volunteer	Insurance settlement	Very supportive
AJ	Female	30-40	Worked with animals	N/A	Not Working	Social assistance	Not supportive
AT	Male	41-50	Stocked shelves	Center volunteer	Volunteer	ODSP	Very supportive
BO	Female	30-40	Book store associate	Hospital volunteer	Volunteer	Insurance settlement	Very supportive
BC	Male	51-60	Public service	Business unit	Volunteer	Insurance settlement	Not supportive
JK	Male	51-60	Student	N/A	Not Working	Social assistance	Somewhat supportive
PQ	Female	30-40	Cashier	Volunteer	Volunteer	ODSP	Very supportive
MK	Female	41-50	Collections	Center volunteer	Volunteer	Insurance settlement	Very supportive

Table 6-2 Correlation Results

	OI	OB	OC
Occupational Identity (OI) Score	--	.60*	.85**
Occupational Behaviour (OB) Score	.60*	--	.48*
Occupational Competence (OC) Score	.85**	.48*	--

* Indicates significant correlation at the .05 level

** Indicates significant correlation at the .01 level

6.5 Discussion

The main hypothesis of the analyses was supported and participants who resumed paid or unpaid occupations had significantly higher scores on the occupational identity scale of the OPHI-II compared to participants who did not resume full or part time occupational roles.

The following discusses the significant results and relevance to the literature on occupational identity and brain injuries. The discussion also examines the importance of considering contextual factors when exploring occupational identity and the role of competence in the development of occupational identity. Potential implications for rehabilitation programs for brain injury survivors are elaborated.

6.5.1 Occupational Identity and Returning to Work

Participants who resumed paid or unpaid occupational roles demonstrated higher scores on the occupational identity scale. This finding is congruent with past literature that explores the factors that contributed to the re-development of an occupational identity after a life disruption (Braveman et al. 2006; Howie, Coulter, & Feldman, 2004). Braveman et al. (2006) found re-engagement in meaningful occupations was a contributing factor to successful development of a positive sense of occupational identity. Likewise, Howie et al. (2004) noted the important role of leisure occupations in shaping occupational identity. Both of these studies utilized individuals who experienced a life disruption, Braveman et al. studied individuals diagnosed with HIV/AIDS and Howie et al. explored the role of crafting in elderly individuals.

Results from this study support the importance of re-engaging in meaningful occupations after a life disruption due to brain injury to achieving a sense of occupational identity. The participants who began new occupations following their injury demonstrated a positive sense of their occupational identity. The current study adds to the contributions of Braveman et al. (2006)

and Howie et al. (2004) and supports that brain injury survivors can participate in new occupations, different from pre-injury occupations and develop meaning in these occupations that in turn contributes to re-developing a sense of occupational identity.

Establishing empirical support for the importance of re-engaging in occupations following a brain injury is pertinent to the literature base on persons with brain injuries. The current study is one of the first research studies to provide empirical support for the relationship between engaging in occupations and creating or maintaining a sense of occupational identity following a brain injury.

6.5.2 The Relationship between Occupational Identity, Occupational Competence, and the Occupational Environment

The results of the current study found a positive correlation between occupational identity, occupational competence, and occupational settings. This relationship between occupational identity, occupational competence, and occupational settings suggest it is important to consider both occupational competence and occupational settings when exploring occupational identity. This result is not surprising given the OPHI-II was created based on the backdrop of the Model of Human Occupation (Kielhofner, 2002). The Model of Human Occupation (MOHO) concludes occupation is driven by a self need to engage in occupations and can be mitigated by the influence of the environment. This study supports that viewing occupational performance in a holistic model such as the MOHO can uncover underlying relationships to occupational identity development. For example, previous authors including Klinger (2005) and Cotton (2012) posited that occupational identity and occupational competence are closely linked and can develop concurrently. Klinger suggested there is a relationship between occupational identity and the development of competence and both of these

work to facilitate the process of occupational adaptation. Cotton also noted there is a relationship between the re-development of occupational identity after a brain injury and gaining competence in new occupations.

This study also found that those who did resume occupational roles had higher occupational identity scores and had greater support from loved ones. This result concurs with past research by Braveman et al. (2006) that examined the role of resuming life roles on occupational identity, occupational competence, and the impact of the occupational environment. Braveman et al. discussed the role of contextual factors after a life disruption and noted the important role of others in re-developing occupational identity. The participants felt the demands put on them by others were too great to achieve any occupational goals set by others. The current study adds to the knowledge generated by Braveman et al. by supporting the importance of receiving either emotional or financial support from loved ones.

Results from this study; that occupational identity is significantly impacted by the return to work and that there is a relationship between occupational identity, occupational competence, and the environment has implications for rehabilitation professionals. The following section discusses these potential implications and how the current rehabilitation practices can be modified to create a more comprehensive program of care for brain injury survivors.

6.5.3 Implications for Rehabilitation Practices

In the current study all participants experienced a severe to moderate brain injury. Sustaining a brain injury can lead to changes in functional abilities (Myles, 2004), as well as, cognitive impairments (Nair et al. 2008). Both of these impairments can lead to changes in the availability of occupations (Klinger, 2005). Brain injury survivors are typically a population that experience limitations in the occupations they can maintain (Shaheed Soeker, 2011; Yasuda et al.

2001). The results of this study also support that there is an important relationship between the occupational environment and the development of occupational identity. Therefore, while it is important to provide physical rehabilitation, it is also important to identify appropriate social contexts and occupational environments that can support the process of re-building occupational identity.

Current brain injury rehabilitation models focus on the rehabilitation of physical injuries (Klinger, 2005; Nochi, 1998). The current study found those who returned to occupations (paid or unpaid) demonstrated a higher level of occupational identity when compared to those who did not return to work. These results have implications for rehabilitation practice indicating that it is also important to include outcome goals that center upon the re-development of an occupational identity.

Strategies that can promote more focus on occupational identity were noted by Cotton (2012) who suggested occupational therapists can begin the process of facilitating the re-development of an occupational identity by exploring the narratives of their client to encourage the client to develop new narratives. Results from this study also support the use of engaging persons in new occupations as it links to the process of developing occupational identity.

6.6 Limitations and Future Research

The current study examined the difference in occupational identity scores in a group of brain injury survivors. Due to a lack of a pre-test/post-test or exploratory design the current study cannot posit that returning to work increased occupational identity without suggesting there were other factors that may have contributed to a change in occupational identity. Instead, the current study can only suggest that returning to work may have contributed to the re-development of occupational identity. Further research examining the change in occupational identity scores

upon returning to work could be used to provide greater support for the influence of resuming paid or unpaid work on occupational identity re-development.

The current study also did not focus on the type of occupations participants engaged in, nor if the type of occupations impact upon occupational identity. Future research could further evolve occupational identity and the factors that impact upon occupational identity by examining the effect of specific types or patterns of occupations.

A third limitation to this study was the lack of representativeness of the current participants. All of the participants were recruited from a center for brain injury survivors. Although the center is open to all brain injury survivors who wish to join there may be a typology of brain injury survivors who attend the center. If the study was replicated in the community at large the study may have different outcomes.

The conclusion of this chapter marks the end of the discussions surrounding the three studies conducted to explore occupational identity and shifts in occupational identity. The next, and final, chapter discusses an integration of the results of the grounded theory analysis to explore the relationships that impact the re-development of occupational identity, as well as, the results of the current study which explored the impact of returning to work on occupational identity.

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Chapter 7 General Discussion

7.1 Introduction

The current dissertation sought to provide clarity to the question "How do shifts in occupational identity occur from the perspective of persons with brain injuries?" To explore this concept of occupational identity and capture multiple perspectives two studies (presented in Chapters 4 and 6) and review of an assessment measure (Chapter 5) were conducted. To explore the process underscoring a shift in occupational identity a grounded theory approach (Corbin & Strauss, 2008) was utilized. To further elucidate on occupational identity and the impact of returning to occupations after a brain injury a quasi-experimental ex-post-facto design (Montero & Leon, 1997) was utilized.

The following chapter begins with an overarching discussion of the major contributions of the current research studies to the knowledge base on the re-development of occupational identity. To summarize the contributions of the current studies Figure 7.1 is presented to elaborate how contextual relationships impact upon the re-development of occupational identity for brain injury survivors. A version of this figure was originally presented in Chapter 2 (Figure 2.2) to detail how authors in occupational science described the re-development of occupational identity. The figure is again used within the current chapter to demonstrate the overall contributions of the current dissertation. This chapter concludes with a discussion on the strengths and limitations of the current approach, a mixed methods approach, as well as limitations and strengths of the current studies.

7.2 Advancing our Understanding of the Re-Development of Occupational Identity after Brain Injury

Occupational identity related to persons with brain injury has received minor attention in the occupational science literature since it was first described by Kielhofner in 2002. Therefore, one of the initial aims of the current dissertation was to expand the ontology of occupational identity. Study 1 explored the perspective of the brain injury survivor and described the process that underpins occupational identity re-development after brain injury. To date there has been no published research that has examined this process, making the current research an original empirical investigation of occupational identity. One author, Cotton (2012), did previously suggest how occupational identity re-development can be supported; however, this was not based on the experience of the brain injury survivor nor was the underlying process of occupational identity re-development described.

The occupational science literature describes the re-development of occupational identity as a construct impacted upon by relationships with others sharing the same occupation (Howie, Coulter, & Feldman, 2004), as a dynamic construct enabled or constrained by the physical environment (Martin, Smith, Rogers, Wallen, & Boisvert, 2011), and the re-development of occupational identity can be hindered by a lack of occupational choices (Vrkljan & Miller Polgar, 2007). Results from Study 1 are consistent with the findings reported by Martin et al. and Vrkljan and Miller Polgar as they suggest choice and the physical environment can constrain or enable occupational choice or opportunities. Study 1 further extends this knowledge and supports the conclusion that a key piece to re-developing occupational identity after a brain injury occurs is having a place, such as a center for brain injury survivors, to conduct meaningful occupations after brain injury. Having a place to conduct meaningful occupations enables the brain injury

survivor the opportunity to take part in occupational roles and develop a sense of competence in these roles, leading to a positive sense of occupational identity.

In 2006 Braveman, Kielhofner, Albrecht, and Helfrich explored the role of returning to work for men diagnosed with HIV/AIDS. Through this research Braveman et al. found occupational identity and occupational competence, interacting with the occupational environment, can be influenced by returning to work. Results from Study 1 support Braveman et al.'s findings and also make this knowledge more relevant to the brain injury survivor population.

Brain injury survivors may face unique physical and cognitive challenges compared to men living with HIV/AIDS and may have to rely on lesiure occupations to remain engaged in occupations. The author of the current dissertation posits that examining the re-development of occupational identity specific to brain injury survivors was an important contribution. Furthering the understanding of how occupational identity re-develops after a life disruption suggested that maintaing leisure occupations can faciliate the re-development of occupational identity after a brain injury. Most participants from Study 1 did not resume paid employment instead they primarily engaged in leisure activities. Even in the absense of paid employment the participants still spoke about their occupational engagement as enjoyable and one that brought meaning to their lives.

Braveman et al. (2006) findings further suggested that occupational competence is better developed in individuals who resume employment. Study 1 further contributes to this knowledge and suggests that the development of occupational competence is also a key step to the re-development of occupational identity after brain injury. Participants in Study 1 spoke about

achieving a sense of mastery in their new occupations and how the new occupations contributed to their sense of who they were as an occupational being.

7.2.1 Pictorial Representation of Major Study Contributions

In Chapter 2 Figure 2.2 was presented to represent the synopsis of the current literature on the re-development of occupational identity. In order to summarize how the current research studies contributed to the knowledge base on occupational identity an edited version of Figure 2.2, Figure 7.1, is displayed below to illustrate how the re-development of occupational identity may be unique for the brain injury survivor population.

Figure 7.1 demonstrates the role of choice and its impact on the re-development of an occupational identity. The results of Study 1 suggested the participants experienced a lack of choice of occupations. This lack of choice created by physical limitations and the avoidance of labelling after brain injury negatively impacted participation in occupations and the re-development of occupational identity.

Study 1 also supported the conclusion that a key step in the process of re-developing an occupational identity following a brain injury is having a place which affords the opportunity to take part in meaningful occupations. It was within a center for brain injury survivors that meaningful occupations were introduced and the participants in Study 1 gained competence and confidence in their occupational roles.

Also noted in Figure 7.1, supported by the results of Study 1 and suggested by previous authors (Klinger, 2005; Shaheed Soeker, 2011), the process of occupational adaptation works in conjunction with developing occupational competence to re-build an occupational identity. This insight suggests an even greater importance be placed on finding places and spaces that

encourage the development of competence or a sense of mastery of occupations (Christiansen, 1999).

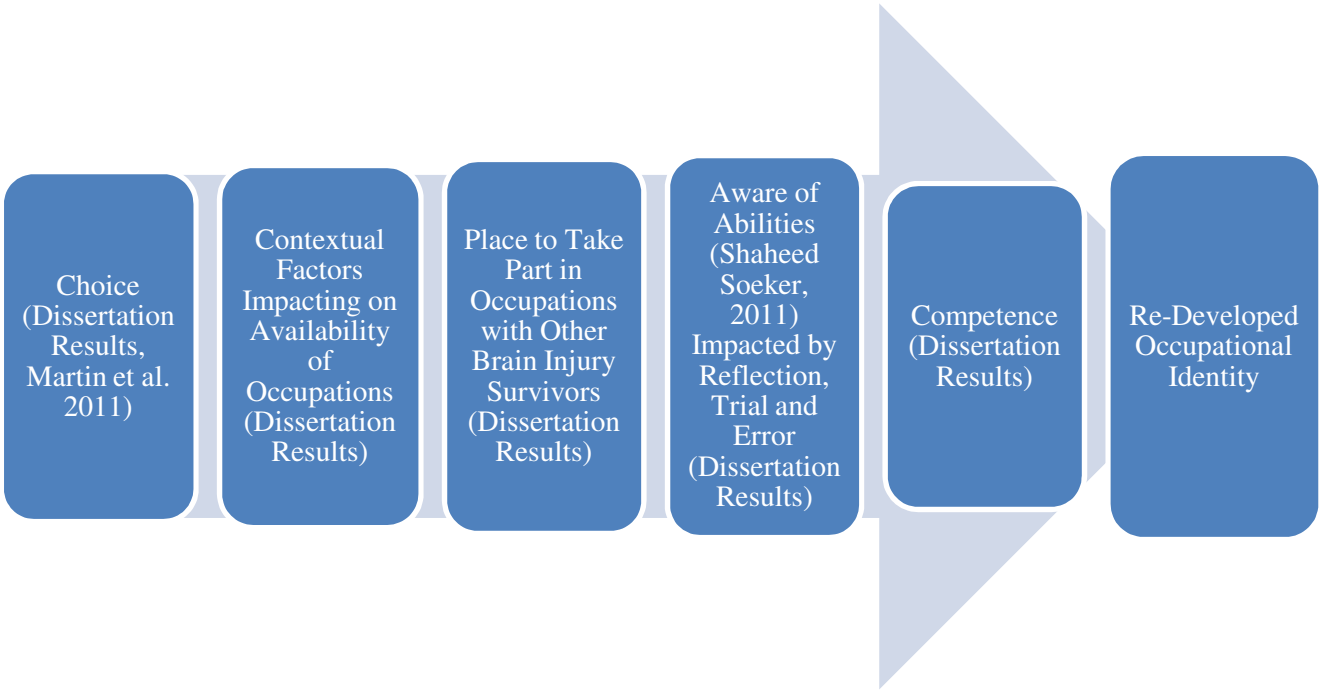

Figure 7.1 Diagram of the results of the current dissertation and pertinent results from the literature

7.2.1.1 Study contributions summary. Insights and results from this dissertation offer new ways to examine and understand or contribute knowledge about the ontology that underpins the re-development of occupational identity after disruption. The current dissertation results suggest that the process of re-development of occupational identity is self-reflexive in that the person's views on how they feel or come to know about their changed performance in occupations is part of understanding how occupational identity is re-developed. Understanding how occupational identity develops or is hindered may require an examination of the self in relationship to others and to opportunities for occupations and where they are experience. For instance, the

performance of some occupations may not be performed due to cognitive or functioning constraints, other pre-injury occupations may not be available due to societal expectations of what persons with brain injury (in this case) can or cannot do, and finally the availability of or opportunity to perform or try new or different occupations within a supportive or unsupportive environment. Study results also point to the transformative potential of engagement and mastery of new occupations over time and the importance of self-reflection on perceptions of performance competence as new occupations are undertaken. Thus, ways of knowing about the differences in the re-development of occupational identity underscored in this study point to examining the dynamic interactions of the person in new, or previous occupations, or modified occupations as they transpire and to consider the dynamics of place to explore occupations and temporal aspects of developing competence through new occupations.

7.3 Integration of Quantitative and Qualitative Study Results

Creswell and Plano Clark (2011) suggested an appropriate method for comparing results from qualitative and quantitative studies is a side-by-side comparison. According to Creswell and Plano Clark, this approach involves presenting both the qualitative and quantitative results of the study in a table. Both sets of results are compared and quotations from the qualitative exploration are used to strengthen or refute findings from the statistical data analysis.

For the current dissertation themes were generated by the careful review of the categories generated in the grounded theory analysis describing the process of shifts in occupational identity and comparing these themes to the main finding of the comparison between brain injury survivors who returned to occupations and those who did not. Table 7-1 indicates the themes generated from exploration of the convergence of Study 1 and Study 2 data. As noted in the table there were two themes extracted upon review of the qualitative interviews and the statistics

generated during the quantitative analysis: Influence of Contextual Factors and Competence in Occupations. The following section explores these themes and suggests how the exploration of these themes helped to answer the overall mixed methods research question, "How do shifts in occupational identity occur from the perspective of persons with brain injuries?"

7.3.1 The Convergence of the Data

Study 1 results suggested that brain injury survivors, upon reflection of new limitations and abilities, either re-engage in new occupations or do not attempt to resume occupational participation for fear of labelling by others. Participants who did re-engage in occupations looked upon the changes in their occupational participation as positive changes. Those who resumed some form of occupational participation also presented a positive vision for themselves and did not want to make any significant changes to their occupational lifestyle or balance.

The results of Study 2 support the findings of Study 1 through an analysis that demonstrated that brain injury survivors who returned to work (paid or unpaid) had a higher occupational identity score and a greater sense of their occupational identity. In other words, the participants who resumed any primary occupational role reported being happy with their occupational participation and had clear goals for the future. The re-engagement in occupations could be constrained or enhanced for brain injury survivors by contextual factors including family support (or lack thereof) and financial restrictions and the development of competence in occupational roles.

Table 7-1 Integration of Qualitative and Quantitative Data

Theme Based on Qualitative Quotations and Quantitative Statistic	Qualitative Supportive Quotations (Study 1)	Quantitative Statistic (Study 2)
Influence of Contextual Factors • Financial Limitations constrain occupational choices	"...it's like that's the pay bracket I going to get the rest of my friggen life. They may raise it $2.00 dollars after I've been on it for 6 years but *woo-hoo* are they keeping right up with the cost of living cause um, you know I'm going to food banks, when I'm hungry" (AE). "I have some money coming in. Having a job would get me extra things in life, I could do more" (TL).	Participants who receive ODSP (Ontario Disability Support Program) or Government Social Assistance engage in very limited occupations The majority of participants who take part in daily occupations have substantial insurance settlements
• Support participation in occupation	"My family and friends were 100% behind me. At the hospital the doctor said where do you want him to go and my mom said…He is coming home with me, he is part of the family. My family was always there to help me get back to things" (JS). "Encouragement from family and friends (to resume occupations) are important" (MJ). My family, people that have been sensitive to my needs I guess, friends that understand me and know me and love me, that's why I am as well off as I am today" (SF).	The participants who don't engage in paid or unpaid occupations reported having little support from loved ones All of those who did resume occupations reported having very supportive loved ones

Competence in Occupations	"It wasn't until these other musicians that I got to know that I found out I was quite a bit better at music than what I imagined" (MJ). "I wouldn't speak in public when I was in high school and public school and when I was asked to do a speech I just couldn't and now I interviewed the X (university) students with X (staff member) and I'm completely happier" (RP). "I made a parrot" (EP). EP asked the interviewer to come see the parrot he painted. When he pointed to the picture he was smiling and nodding and giving a *thumbs up* sign. Indicating he was proud/confident in his ability to paint.	Occupational competence was positively associated with occupational identity

7.3.2 Contextual Factors

During the interviews of Study 1 several participants noted a change in their financial status following their brain injury. One participant spoke about having to go to a food bank as she did not have enough money to pay for food. Another participant suggested being employed would be a way to generate extra income to afford extra things in life. Study 1 data supports the finding that the brain injury survivors in the current study experienced less engagement in occupations following brain injury. It is plausible that a cause of this decreased participation in occupations is due to financial limitations as suggested by Study 1 participants.

The results of Study 2 can also be used to suggest a relationship between occupational identity, greater financial resources, and access to occupations. Participants in Study 2 who did resume occupational roles were receiving income from substantial insurance settlements. It is plausible having a higher source of income created more opportunities to engage in occupations.

Therefore, both Study 1 and Study 2 results help to answer the mixed methods research question, "How do shifts in occupational identity occur from the perspective of persons with brain injuries?" Study 1 and 2 suggest occupational identity re-develops in a process underscored by self-reflection of abilities and that remaining cognisant to and enhancing contextual factors (for example providing low cost, easily accessible occupations for brain injury survivors) can play a key role in the re-development of occupational identity.

Laliberte Rudman and Dennhardt (2008) and Phelan and Kinsella (2009) called for an evolution of occupational identity as a construct by further exploration of the impact of social, cultural, and contextual factors. The integration of the knowledge gained from the grounded theory approach and the quasi-experimental study responded to this call from Laliberte Rudman and Dennhardt and Phelan and Kinsella and revealed the importance of exploring contextual

factors such as financial resources as they indirectly impacted the re-development of occupational identity after a brain injury for the participants in this study.

7.3.3 Competence in Occupations

During the interviews in Study 1 several participants spoke about the enjoyment and satisfaction they gained through participation in new occupations following their brain injury. The occupations were vastly different from occupations engaged in prior to their brain injury and possibly because of approval from others or the self-reflection of their ability the participants gained a positive acceptance of their ability to conduct post-injury occupations and gained a level of competence in these occupations. These participants also expressed a sense of their vision for the future and their occupational roles, suggesting the re-building of a positive occupational identity followed the development of competence in new occupations.

The analysis from Study 2 further supports the relationship between the development of competence and maintaining a greater sense of occupational identity. Higher scores on the occupational competence scale were positively related to higher scores on the occupational identity scale. Therefore, the data supports the finding that developing competence in new occupations following a brain injury is related to occupational identity.

Based on the results of Study 1 and Study 2 the mixed methods approach was an appropriate choice to gain an understanding of the process underscoring a shift in occupational identity after a brain injury. The mixed methods approach also helped gain an understanding of the underlying relationships that can constrain or enhance the re-development of an occupational identity. The following section discusses the limitations of the current studies and suggests directions for future research, as well as, the usefulness of the mixed methods approach within the current dissertation.

7.4 Limitations and Future Research

The current research added to the knowledge base of occupational identity development and brain injuries. There were however two limitations: the omission of an exploration into the influence of culture and gender on occupational identity re-development and implementing and evaluating the potential for changes to rehabilitation programs. Addressing these limitations in future studies may expand the knowledge base on occupational identity. For example, the current mixed methods study attempted to explore the contextual factors that can constrain or promote the development of an occupational identity after a brain injury. Although, this study did uncover several of these relationships that impact upon occupational identity development the role of other contextual factors such as cultural influences or the role of gender on occupational identity were not explored. Further research which examines the role of external contextual factors such as these may elaborate more on how shifts in occupational identity may be unique depending on cultural traditions and can evolve occupational identity as a construct.

Study 2 (Chapter 6) was a quasi-experimental study examining the difference between those who returned to work to those who did not return to work on the occupational identity scale. The potential for changes to rehabilitation programs was briefly discussed however this knowledge will need to be applied to real world settings to further the efficacy of interventions that focus on occupational identity. Future research could explore the potential to advance rehabilitation programs by focusing on ways to support occupational identity re-development and evaluate the effectiveness of interventions or programs.

Finally, both Study 1 and Study 2 were conducted with a sample of brain injury survivors. Therefore, the findings pertaining to the process underscoring the re-development of occupational identity may only be applicable to brain injury survivors. To provide a more

comprehensive picture of shifts in occupational identity more research with a variety of populations is warranted.

7.5 Mixed Methods in the Current Dissertation

To explore whether the mixed methods approach was an appropriate choice of methods in the current dissertation an approach suggested by Creswell and Plano Clark (2007) was used. Creswell and Plano Clark suggested exploring the suitability of the overall methodology utilized is an important step in a research study and suggested a series of questions to discuss the validity of the methods underscoring the research. Responses to some of the questions offered by Creswell and Plano Clark are below to explore the suitability of using a mixed methods approach in the current dissertation.

1. *Is the study a mixed methods study?*

Study 1 utilized a grounded theory approach and reviewed the data using the qualitative analysis approach described by Corbin and Strauss (2008). The second study, Study 2, was based on an ex-post-facto quasi-experimental design and applied quantitative data analysis techniques to examine the data. Therefore, according to the Creswell and Plano Clark (2011) this study had both qualitative and quantitative elements and met the criteria for a mixed methods study.

2. *Does the study include advanced methods features consistent with a type of mixed-methods design?*

The advanced methods that indicated the type of mixed methods design (Creswell & Plano Clark, 2007) was articulated in Chapter 3. Three descriptive paragraphs were written describing the type of mixed methods and how the qualitative and quantitative data were to be

collected. A corresponding diagram was also given to further describe the specific methods used within the mixed methods approach.

3. *Does the study show rigorous mixed methods research?*

According to Creswell and Plano Clark (2007) to demonstrate rigour in mixed methods there must be a logical sequence from one study phase to the next. Each study for the current dissertation was designed to flow logically from one stage to the next. To begin the studies there was an overall review of the background literature pertinent to all aspects of the mixed methods study. A review of the necessary literature helped the author gain an awareness of what perspective was necessary to further evolve occupational identity after a brain injury. It was upon assessing this literature that the two research questions were formulated and the methodology to explore each question was chosen.

Following this exploration of occupational identity the next phase was to review the results and integrate the results, which was demonstrated in the preceding sections. The chapters and articles of this dissertation were written to reflect this sequence of steps beginning with an introduction of the literature, a review of the methods, and reports from each of the individual studies. This final chapter represents the last phase and described an integration of the results of the studies and situated the results within the current literature.

Creswell and Plano Clark (2007) further identified key areas to define the concept of rigour in mixed methods. The key areas include such pieces as demonstrating recognition that the philosophical worldview influences the study design and outcome and ensuring that the interpretations offered for the results are a suitable fit given the findings. The current research paradigm stance, a pragmatic approach, was described in Chapter 3. The author identified the implications of such a worldview approach and noted the role of values and bias as inherent in

qualitative research. Finally, a concerted effort was made to suggest how the findings of the mixed methods study added to the growing knowledge base of occupational identity and provided an original exploration of the process underscoring occupational identity re-development after a brain injury.

7.6 Summary and Conclusions

The current dissertation began with three overall aims: to expand the ontology of occupational identity, to explore the potential of using research methods with brain injury survivors, and to explicate the relationships underpinning a shift in occupational identity and the influence of re-engaging in work on occupational identity. To accomplish these research goals this dissertation utilized two studies and review of an assessment measure to explore how shifts in occupational identity occur for brain injury survivors. Through this exploration several new relationships emerged regarding concepts about the re-development of an occupational identity. Based on data collected throughout the research process occupational identity re-develops after a brain injury following the self-reflection of abilities, grappling with the negative label, and disconnecting from one society to another (that of a society with other brain injury survivors). Along the process of re-development there are several relationships that can inhibit or promote occupational identity development and these include: greater financial resources, the availability of occupations that can build competence, and support from loved ones.

To explore the potential of research tools with brain injury survivors a participatory approach was utilized with a group of brain injury survivors. Although the approach had some limitations the overall gain from the inclusive review approach was valuable input of the assessment measure by survivors along with promoting inclusivity in research.

Overall this mixed methods study sought to contribute to the knowledge base exploring shifts in occupational identity. The current chapter summarized the contributions of the studies that explored shifts in occupational identity from the perspective of brain injury survivors, as well as, describe the collaboration of two different types of data for the common goal of articulating the relationships that underpin this process.

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social settings. *Qualitative Health Research,* 8, 665-681.

Phelan, S., & Kinsella, A. (2009). Occupational identity: Engaging socio-cultural perspectives. *Journal of Occupational Science,* 16 (2), 85-91.

Shaheed Soeker, M. (2011). Occupational adaptation: A return to work perspective of persons with mild to moderate brain injury in South Africa. *Journal of Occupational Science,* 18 (1), 81-91.

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Whiteford, G. (2000). Occupational deprivation: Global challenge in the new millennium. *British Journal of Occupational Therapy,* 63 (5), 200-204.

APPENDIX A: Ethics Approval

Research Western

Use of Human Participants - Ethics Approval Notice

Principal Investigator: Dr. Lynn Shaw
Review Number: 18596S
Review Level: Full Board
Approved Local Adult Participants: 25
Approved Local Minor Participants: 0
Protocol Title: Examining the shift in occupational identity upon returning to work after a brain injury
Department & Institution: Occupational Therapy,University of Western Ontario
Sponsor: Dominion General Life Insurance Company of Canada Grant

Ethics Approval Date: January 12, 2012 **Expiry Date:** August 31, 2014

Documents Reviewed & Approved & Documents Received for Information:

Document Name	Comments	Version Date
UWO Protocol		
Letter of Information & Consent		

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

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

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

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

Ethics Officer to Contact for Further Information

✓ Grace Kelly (grace.kelly@uwo.ca)	Janice Sutherland (jsutherl@uwo.ca)

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

The **University *of* Western Ontario**
Office of Research Ethics
Support Services Building Room 5150 • London, Ontario • CANADA - N6G 1G9
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Research Western

Use of Human Participants - Ethics Approval Notice

Principal Investigator: Dr. Lynn Shaw
Review Number: 18596S
Review Level: Delegated
Approved Local Adult Participants: 25
Approved Local Minor Participants: 0
Protocol Title: Examining the shift in occupational identity upon returning to work after a brain injury
Department & Institution: Health Sciences\Occupational Therapy, University of Western Ontario
Sponsor: Dominion General Life Insurance Company of Canada Grant

Ethics Approval Date: March 06, 2012 **Expiry Date:** August 31, 2014

Documents Reviewed & Approved & Documents Received for Information:

Document Name	Comments	Version Date
Revised Western University Protocol	The centre where the study is taking place has done a review on the study and has indicated that it should be made clear that if the participant denotes any feelings of anger or hostility, it is not necessary to continue the interview.	

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

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

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

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Ethics Officer to Contact for Further Information

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APPENDIX B: Letter of Information and Informed Consent

Letter of Information and Consent

"Examining the Shift in Occupational Identity upon Returning to Work after a Brain Injury"

Introduction and background

We would like to invite you to participate in a research study entitled: "Examining the change in occupational identity upon returning to work after a brain injury". This study is part of Mikelle Bryson-Campbell's doctoral dissertation research and is supervised by Drs. Lynn Shaw (Chair), Jeff Holmes and James O'Brien.

This research project is divided into two studies. The first study, called Study 1, will explore factors underscoring the process of change in occupational identity. Study 1 will also adapt a questionnaire called the Occupational Performance and History Interview-II (OPHI-II) so that it can be easily utilized by brain injury survivors. The OPHI-II measures occupational identity, occupational competence, and environmental factors. The questionnaire asks questions about past occupations, goals, role expectations, and different environmental settings. I am seeking 9 adult brain injury survivors to participate in Study 1.

The second study, called Study 2, is to compare those who have returned to work or a volunteer placement to those who have not returned to work or a volunteer placement. I am seeking 16 additional participants to take part in Study 2.

What does participation in this study involve?

We ask that you read this letter of information and consent and if you agree to participate please sign on the last page. You may keep a copy of this letter of information and consent. By signing this document you are not waving any legal rights.

_____

Please initial here indicating you have read the above page

For Study 1 you will be asked to set up two interviews with me taking place at either the center or a location of your choice. In the first interview you will be asked to complete a 5 minute demographic questionnaire so I can report on Study 1 sample. You will also be asked to take part in an interview lasting approximately 45 minutes answering several questions regarding your role as a worker before and after your injury. The interview will be recorded with a tape recorder and the dialogue from the interview will be typed into a computer document. You will be given a questionnaire called the OPHI-II, to review (not complete, instead review the content) at home. You are asked to think about its length, wording, ease of use, and additional questions that may help me to understand the shift in identity that occurs upon returning to work after a brain injury. During a second interview you will be asked to complete the OPHI-II with the researcher and discuss its content.

If participating in Study 2 instead of Study 1 you will be asked to set up two interviews with me taking place at the center or a location of your choice. In the first interview you will be asked to complete a 5 minute demographic questionnaire, so I can report on the study sample. You will also be asked to complete the adapted OPHI-II which requires 45 minutes to complete and looks at occupational roles, occupational behaviours, and your occupational environment.

You may choose not to answer any of the questions in Study 1 or Study 2. I also encourage you to share this letter of information with other brain injury survivors you may know and give them my contact information if they are interested in participating in this study.

Who can be included in this study?

1) Participants must be a brain injury survivor of any gender, age 19 or over.
2) Participants must be able to read and write in English.

_____

Please initial here indicating you have read the above page

Are there associated benefits or risks with participating in this study?

There are no direct benefits to the participants. There may be indirect benefits to participants in that they are helping to adapt a questionnaire that assesses occupational identity and competence and other brain injury survivors may benefit from using this tool. Participants will also be expanding the knowledge base on occupational identity which may help other brain injury survivors set occupational goals.

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your future involvement with the center.

There is a risk to participation in the study, it may evoke some feelings of anger or hostility or embarrassment, for instance due to difficulties in understanding some of the questions. In the event such feelings arising during the study the interviewer will provide you with support and you will have the option to complete the interview later or to discontinue the interview.

Confidentiality and informed consent

All of the information collected by the researcher will remain confidential. If the results of the study are published, your name will not be used and no information that discloses your identity will be released or published without your explicit consent to the disclosure. Given the size of the location where participants are being recruited and the familiarity of participants with one another, there is the possibility that information given during the interview (such as quotations) may make research participants identifiable to others in the center.

Only the researchers directly involved with this study will have access to any information that would reveal your identity. The one exception is where the representatives of the University of Western Ontario Non Medical Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

_____

Please initial here indicating you have read the above page

Data storage and security measures are in place: Any identifying information will be kept in a locked filing cabinet in a locked research laboratory, in the School of Occupational Therapy at the University of Western Ontario. Any identifying information will be maintained in a separate and secure location. Any electronic data or files will be password protected and or stored in password protected computers. The identifying information collected will not be retained and information from this study will be destroyed upon completion of the study through a professional shredding company

If you have any questions about the science or care associated with this project, please do not hesitate to contact the student researcher. If you have any questions about your rights as a research participant or the conduct of the study you may contact the Office of Research Ethics at the University of Western Ontario.

Letter of Information and Consent

"Examining the Shift in Occupational Identity upon Returning to Work after a Brain Injury"

I have read the Letter of Information and consent document, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

_____

Participant Name

_____

Signature

_____

Date

_____

Power of Attorney (if applicable) Name

_____

Signature

_____

Date

Person Obtaining Consent

_____

Print Name

_____

Signature

_____

Date

APPENDIX C: Demographic Questionnaire

Please indicate your response to the questions below by circling the correct response or indicating your answer on the line;

1. Current age _____
2. Gender _____
3. What year did your injury occur _____
4. Was the severity of your injury described as being:
    a. Mild (GCS score of 13 or greater)
    b. Moderate (GCS score between 9 and 13)
    c. Severe (GCS score of 8 or less)
    d. Unknown
5. Marital status at the time of injury
    a. Married/Common Law
    b. Single
    c. Divorced/Separated
    d. Widowed
6. Type of rehabilitation received (circle all that apply)
    a. In patient hospital rehabilitation
    b. Out-patient hospital rehabilitation
    c. Residential rehabilitation program
    d. Non residential rehabilitation program
    e. Community rehabilitation program (speech, physiotherapy, occupational therapy outside a hospital setting)
    f. Other
7. Before your injury were you:
    a. Working part-time (less than 15 hours per week)
    b. Working full-time (15 or more hours per week)
    c. Not working
    d. Attending school full or part time
    e. Volunteering part-time (less than 15 hours per week)
    f. Volunteering full-time (15 or more hours per week)
8. Highest level of education completed
    a. Elementary school
    b. High school
    c. College or university
    d. Other

9. Current marital status
    a. Married/Common Law
    b. Single
    c. Divorced/Separated
    d. Widowed

10. Financial situation at the time of injury
    a. Employment income
    b. Government social assistance
    c. Family financial support
    d. Other

11. How would you describe the level of support you received from family and/or friends at the time of your injury?
    a. Very supportive
    b. Somewhat supportive
    c. Not supportive
    d. Not applicable

12. Are you currently:
    a. Working part-time (less than 15 hours per week)
    b. Working full-time (15 or more hours per week)
    c. Not working
    d. Attending school full or part time
    e. Volunteering part-time (less than 15 hours per week)
    f. Volunteering full-time (15 or more hours per week)

13. When did you return to work after the injury?
    a. Within 6 months after injury
    b. Between 6 months and a year after injury
    c. Between one and two years after injury
    d. More than 2 years after injury

14. Current financial support
    a. Ontario Disability Support Pension
    b. Employment income
    c. Government social assistance
    d. Family financial support
    e. Other

15. How would you describe the current level of support you receive from family and/or friends?
    a. Very supportive
    b. Somewhat supportive
    c. Not supportive
    d. Not applicable

APPENDIX D: Study 1 Semi-Structured Interview

1. Can you tell me about the jobs (paid or volunteering) you had prior to your injury? What was it about the job you liked? Can you give an example(s)?

2. What was it about the job you did not like? Can you give me an example(s)?

3. Take one the jobs you did, and tell me about the hardest thing you ever had to do and how you handled the challenge?

4. How would you describe yourself as a worker prior to your injury?
   If I met you in a social situation and I approached you and asked, "What do you do?" What would you have told me about what you did?

5. How did it happen that you became a _____ (insert descriptor participant uses above) worker?
   What lead up to choosing this job or role?
   What did you do in your daily life that might have helped you to become this type of worker?

6. Think of someone who knew you really well (boss, friend, parent). How would they describe you as a worker? Can you give me an example of why they would describe you in such a way? What things did you do that helped them see you as a _____ (insert descriptor here) worker?

7. How did you become interested in _____ (worker role)? What are the things that you know helped you become a _____?

8. Can you tell me what you valued the most or what you thought was the most important thing (s) to you about being a _____ worker?

9. Is there anything else you might want to tell me about being a _____worker prior to your injury?

10. Tell me what happened after your injury that lead to you working in your current job? What contributed to you working in this role? What were some of the challenges you faced and how did you meet or overcome some of these challenges? What helped along the way i.e. rehabilitation professionals, a work re-entry program? What did you do? What did others do? What was the thing or things that you feel really supported or helped you to find employment or to return to work after your injury?

11. How would you describe yourself as a worker now?
    If I met you today in a social situation and asked, "What do you do?" What would you tell me you do?

12. Think of someone who knows you really well (boss, friend, parent). How would they describe you as a worker? Can you give me an example of why they would describe you in such a way? What things do you do that help them see you as a _____ (insert descriptor here) worker?

13. How did you become interested in _____ (worker role)? What happened after your injury that you think contributed to or helped you become a _____?

14. Can you tell me what you value the most or what you think is the most important thing (s) to you about being a _____ worker? Has this view point changed since your injury?

15. Is there anything else you might want to tell me about being a _____worker since your injury?

16. Looking back since your injury and all that has happened what things, if any, would you do differently to return to employment or to find the job that you really want to do and believe that you can do?

17. If you could give advice to someone with a brain injury to tell them what it is could help them return to work, what things would you like to say to them?

Curriculum Vitae
Mikelle Bryson-Campbell

Post Secondary Education

Doctor of Philosophy, Health and Rehabilitation Sciences (2009-2013)
Western University
London, Ontario Canada

Master of Arts, Human Development (2003-2006)
Laurentian University
Sudbury, Ontario Canada

Bachelor of Science, Biology/Psychology (2002-2003)
Cape Breton University
Sydney, Nova Scotia Canada

Bachelor of Arts, Psychology (1998-2002)
Cape Breton University
Sydney, Nova Scotia Canada

Scholarships, Fellowships, and Awards

Name (date)	Value
Fellowship at Ivey International Center for Health Innovation (2013-Present)	$50 000 (annually)
Faculty of Health Sciences Research Award (2011, 2012)	$500.00, $500.00
Health and Rehabilitation Sciences Research Award (2010, 2012)	$400.00, $400.00
Holy Angels High School Student Bursary for Leadership (1998)	$500.00
Public Speaking Award Multicultural Association Nova Scotia (1998)	$500.00

Academic Work Experience

Research Assistant to Dr Lynn Shaw (2010-2012)
Western University
London, Ontario Canada
Research Project: An international exploration of work transitions and the development of a system to review professional articles on employment transitions.

Research Assistant to Dr Janice Polgar (2010-2012)

Western University
London, Ontario Canada
Research Project: Examined seniors and driving and how their use of technology impacts upon driving safety.

Statistics Lab Instructor, Department of Psychology (2003-2005)
Laurentian University, Sudbury Ontario

Research Assistant to Dr Peter Macintyre (2003-2004)
Cape Breton University
Sydney, Nova Scotia Canada
Research Project: Examined rates of smoking, employment, core values, and peace and security issues in a small community in Cape Breton.

General Research Assistant to Department of Psychology (2003-2004)
Cape Breton University
Sydney, Nova Scotia Canada
Research Projects: A series of smaller projects in the areas of health (sleep, sleep disorders, addictions)

Publications

Bryson-Campbell, M., Shaw, L., O'Brien, J., Holmes, J., and Magalhaes, L. (2013). A Scoping Review on Occupational and Self Identity after a Brain Injury. *Work* 44, 57-67.

Ravenek, M., Bryson-Campbell, M., Shaw, L., & Hughes, I. (2010). Perspectives on prevention, assessment, and rehabilitation of low back pain in WORK. *Work* 35, 269-282.

Podium Presentations

Shaw, L., Prodinger, B., Bryson-Campbell, M., Engelbrecht, M., Hajwani, Z., Voumvakis, M., (May 5-7, 2012). International perspectives on the use of interdisciplinarity in the study of work transitions and disparities: Are we there yet? CSOS Conference. University of Alberta. Edmonton, AB.

Bryson-Campbell, M. (March 21, 2012). Examining Occupational Identity Upon Returning to Work After A Brain Injury. International Information Exchange Seminar. University of Western. London, Ontario

Bryson-Campbell, M. & Shaw, L. (June 5, 2011). Defining Identity: Examining Occupational Identity after a Brain Injury. CAOT Conference. Saskatoon, SK.

Bryson-Campbell, M. & Shaw, L. (June 2010). Identity after a brain injury. Annual Provincial ABI Conference. Toronto, ON

Bryson-Campbell, M. (October 2010). Selecting statistics in quantitative studies. Guest Lecturer University of Western Ontario. London, ON.

Lokko, C., Bryson-Campbell, M., & Woods, N. (November 2006). From 24/7 to community independence: protection, reorientation, choice, risk, and independence. Toronto ABI Conference. Toronto, On

Bryson-Campbell, M. (December 2006). Fact and fiction of Acquired Brain Injuries. Wuhan University, China.

Bryson-Campbell, M. (June 2005). Examining the factors that predict compliance to continuous positive airway pressure treatment. Canadian Psychological Association Conference Montreal

Bryson, M & MacIntyre, P. (May 2003) Smoking and chronic health conditions. Cape Breton University Student Undergraduate Research Forum; Cape Breton, NS.

Bryson, M. (April 2002). Examining the effect of sleep extension of performance of cognitive tasks. 26th annual Undergraduate Honors Psychology Conference; Cape Breton, NS

Bryson, M. & MacIntyre, P. (May 2002). Tobacco use and health consequences. Cape Breton University Health Conference; Cape Breton, NS.

Poster Presentations

Snowdon, A., Pisterzi, L., Comrie, R., Schnarr, K., Bryson-Campbell, M., and Mittmann, N. (2013). Assessing caregiver workload for persons with Alzheimer's Disease. North American Primary Care Research Group Conference, Ottawa, ON.

Shaw, L., Bryson-Campbell, M., Drefs, S., Prodinger, B., Hopper, T., & Polgar, J., (2012). Development of a checklist to assist older drivers to evaluate vehicle technology. Auto21 Conference, Montreal, QC.

Bryson-Campbell, M., Ravenek, M., Shaw, L., & Hughes, I. (2010). Examining the contributions from around the world on prevention, assessment, and rehabilitation of low back pain: A Review of WORK. The University of Western Ontario Health and Rehabilitation Sciences Graduate Research Forum, London, ON.

Reviewer

Guest Reviewer for the Journal of Work, Special Edition on Hearing and Work, May 2012

Abstract reviewer Canadian Society of Occupational Scientist Conference, November 2011

Guest Reviewer for the Journal of Work, March 16 2011

Guest reviewer for the Journal of Work, Special Edition on Work Transitions in Chile, November 25, 2010

Professional Memberships

Member of Canadian Society of Occupational Scientists