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The Development and Initial Validation of a Multidimensional Scale of Fairness

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THE DEVELOPMENT AND INITIAL VALIDATION OF A MULTIDIMENSIONAL SCALE OF FAIRNESS

By

Johnathan Harrington Duff

A DISSEYATION

Submitted to the Faculty of the University of Miami in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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THE DEVELOPMENT AND INITIAL VALIDATION OF A MULTIDIMENSIONAL SCALE OF FAIRNESS

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Investigations in a variety of disciplines have identified associations between fair treatment and human health and well-being. However, the lack of a valid and practical instrument for assessing individual experiences of fair treatment has limited researchers’ ability to study this construct. The purpose of this study was to develop and establish the preliminary validity of a scale measuring personal experiences of fairness across various ecological levels. The two phases of this study were scale development and scale validation. Scale development included the generation of items, item revision, and analysis of content validity. A review of existing literature and qualitative data derived from focus group discussions informed the initial pool of items. Cognitive interviews and expert input aided in analysis of content validity. Confirmatory factor analyses were used to evaluate the performance of items and underlying factor structure of the scale after the administration of the pool of items to a sample of 460 participants. Results of the first phase supported the conceptualization of fairness along an ecological spectrum. Results from the second phase revealed a bifactor model with one general fairness factor and four Interpersonal, Occupational, Community, and Societal ecological level factors. The final 12-item scale demonstrated good reliability. Results of this study produced an instrument able to measure individual experiences of fairness across four ecological levels.
For Mom and Dad
Acknowledgments

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Chapter 1: Introduction

The issue of fairness represents one of the most universal aspects of the human experience (Sun, 2013). Justice and fairness concern all facets of human endeavors, from complex social structures to interpersonal exchanges; at every level of human enterprise the fair treatment of people plays a role (Corning, 2011). French philosopher Proudhon in *Of Justice in the Revolution and the Church* claimed “justice governs the world” from human nature to the economy and politics, stating it “is most primitive in the human soul, most fundamental in society” (as cited in Solomon, 1990, p. 4). Sun (2013) referred to fairness as “the most essential rule in social engagement,” observing that no other construct has molded human societies, shaped relationships, or directed the course of civilization as much as fairness (p. 17). Perhaps unlike any other human ethic, fairness represents the most universal value (Sun, 2013; Zhu, Keller, Gummerum, & Takezawa, 2010). Fairness provides an underlying framework for every interaction and influences all forms of human functioning (Baron, 2012; Greene, 2013).

Given the ubiquity of fairness, humans have long pondered the roles of justice and fairness in communal societies (Johnston, 2011). From ancient Greek philosophers to modern revolutionaries, politicians, and scientists, fairness has captivated human discourse for millennia. Most religions, philosophical discussions, and intellectual pursuits have sought to understand what it means to live in a fair society (Frankena, 1962). From Confucius in the East, to the Bible and Talmud or Plato and Aristotle in the West, humans have sought to identify characteristics of justice and have prized fairness in their recommendations for human behavior (Johnston, 2011; Sun, 2013). Although these concepts are as primeval as *homo sapiens* themselves, only recently has intellectual
discourse attempted to empirically capture the role of fairness in the human experience (Jost & Kay, 2014).

In both academic language and the vernacular, justice and fairness are often discussed in very general terms (Prilleltensky, 2012). The creation of universal definitions of justice and fairness has remained challenging; philosophers and social thinkers have offered various interpretations of these concepts (Bentham, 1789/1970; Boucher & Kelly, 1998; Hobbes, 1928; Hume, 2010; Kant, 1991; Marx, 1875). Although more current theoretical considerations of justice range from morality (Sandel, 1998) and impartiality (Sen, 2009) to issues of deservingness (Miller, 1999) or individual empowerment (Campbell, 2010), social justice most commonly refers to the fair and equitable allocation of burdens and privileges in society (Prilleltensky, 2012). In recent decades, academics and social scientists have made some efforts to both connect and distinguish the concepts of justice and fairness. Rawls (1958, 1985) was one of the first philosophers to unite the two terms explicitly, arguing that justice represented a social contract requiring fair conditions. Fairness, in this sense, provides the foundation for justice (Sun, 2013).

Although many scholars use the two words interchangeably, fairness and justice have distinct but overlapping meanings. Justice is primarily associated with the distribution of resources and refers exclusively to sociopolitical affairs; fairness represents a broader concept that influences all aspects of human functioning, from the societal to the interpersonal to the psychological (Corning, 2011; Miller, 1999; Wilson, 2012). Fairness may be considered the practice of justice. Whereas justice and fairness
refer to an ideal mode of interactions between people and communities, the former is the theoretical rationale for this mode and the latter is the actual practice of this ideal.

Corning (2011) provided a useful definition of fairness:

Fairness means taking into account the needs, interests, and rights of all parties. The question in every situation is whether or not there was a fair dealing and equity both in the process – how everyone was treated – and the distribution of benefits and costs for everyone concerned. (p. 16)

Fairness permeates all aspects of the human experience, not solely the larger sociopolitical level where discussions of justice are frequently found (Corning, 2011; Miller, 1999; Sun, 2013). Corning’s definition incorporates the two main distinguishing types of fairness, namely the outcomes of a situation and the processes used to determine these outcomes.

Consideration of fairness in this broader, more expansive light allows for a critical examination at the ways fairness manifests itself in the human experience and how people make sense of it in their lives. For the purposes of this study, fairness is the extent to which processes and outcomes accord individuals and groups their legitimate due. The term *due* indicates what individuals come to believe is fair in their interactions with others and in the distribution of goods, opportunities, and responsibilities in their surrounding environments (Goldman & Cropanzano, 2015; Prilleltensky, 2012). Unlike philosophical scholarship, which is concerned with the rational underpinnings of fair processes and outcomes (Solomon, 1990), the focus of this study was on the multifaceted phenomenological experience of fairness for individuals. Thus, the study does not explore the fairness of organizations, policies, or societies, but rather of an individual’s lived experience of fair treatment in its varied and diverse manifestations in daily life.
Fairness and the Human Experience

Fairness is not confined to the sociopolitical realm like traditional approaches to justice, but rather begins with our most intimate personal relationships. The concept of fairness represents one of the most influential drivers of human behavior, on both macro and micro levels (Greene, 2013; Sun, 2013). Fairness shapes human families and communities and influences virtually every legislative or regulatory decision in society (Corning, 2011). In fact, the more scientists probe topics of fairness, the more they realize how much a sense of fairness influences individual behavior (Corning, 2011; Lerner, 2003; Montada, 2002; Rai & Fiske, 2011; Sun, 2013).

Research in a variety of scientific disciplines such as anthropology, cognitive neuroscience, economics, sociology, and psychology has discovered the innate and powerful presence of fairness in human nature (Brosnan, 2013; Corning, 2011). Social scientists, for instance, in some of the first scientific explorations of fairness, discovered that all individuals frequently view situations through a fairness lens (Heider, 1958; Lerner, 1974). Subsequent investigations in various disciplines strongly suggest that a preference for fairness is deeply ingrained in human DNA (Brosnan, 2013; Brosnan & de Waal, 2003; Skarlicki, Hoegg, Aquino, & Nadisic, 2013).

All human beings seek to make sense of their environment and organize their lives in the context of what is fair (Lerner, 1980; Tyler, Boeckmann, Smith, & Huo, 1997). Sun (2013) referred to this tendency as the “fairness instinct” and stated that it is likely “the most important rule” that governs daily interactions with partners, friends, coworkers, and neighbors (p. 22). In short, fairness matters to people, and it therefore
becomes necessary to understand the ways in which it affects the human experience (Tyler et al., 1997).

One of the more important findings in recent decades is the discovery of fairness not only as a driver of human behavior but also as a critical component of personal well-being. Research emerging particularly from the fields of sociology, psychology, management, and the organizational sciences has unveiled several significant associations between fair treatment and human health and wellness (Caldwell & Vera, 2010; Cornelius & Wallace, 2010; Krawczyk, 2009; Prilleltensky, 2012; Whitman Caleo, Carpenter, Horner, & Bernerth, 2012). Beginning in the mid-20th century, this ongoing line of research revealed that a lack of fairness in work environments influences several aspects of individual health (Elovainio et al., 2003; Kivimaki et al., 2004; Marmot, Rose, Shipley, & Hamilton, 1978; Robbins, Ford, & Tetrick, 2012; Schmitt & Dorfel, 1999).

Most significantly for the field of psychology, researchers have uncovered a close link between individual perceptions of fairness and several emotional, cognitive, and behavioral outcomes. Judgments about the fairness or unfairness of an individual’s experience seem to significantly influence subjective thoughts, feelings, and behaviors, in addition to affecting objective markers of well-being such as physical health (De Vogli Ferrie, Chandola, Kivimäki, & Marmot, 2007; Schaafsma, 2013; Seeman Stein Merkin, Karlamangla, Koretz, & Seeman, 2014). It appears evident that a portion of human functioning and well-being is determined by how fairly people believe they have been treated. Promotion of health and well-being on both individual and population levels, therefore, necessitates a better understanding of the ways in which individuals’ perceptions of fairness shape their thoughts, feelings, and behaviors. Counseling
psychology has a rich history in linking issues of justice and fairness to individual experiences (Fouad, Gerstein, & Toporek, 2006; Toporek, Gerstein, Fouad, Roysircar, & Israel, 2010; Vera & Speight, 2003) and an important role to play in addressing individual, interpersonal, and community well-being (Buki, 2014; Prilleltensky & Nelson, 2013).

**Measuring Fairness**

In order to examine justice and fairness in a scientific manner, modern social scientists have sought to create ways of measuring these constructs. Over a dozen scales have been created attempting to capture beliefs about various aspects of justice and fairness (Colquitt, 2001; Furnham 1998, 2003; Furnham & Procter, 1992; Greenberg, 1990; Lucas, Zhdanova, & Alexander, 2011; Moorman, 1991). Although several research groups have attempted to develop and validate multidimensional measures of justice and fairness, several limitations exist. These include substandard methods, poor psychometric properties, and limited utility which have resulted in the absence of a theoretically sound, valid, and practical instrument for assessing individual experiences of fairness across ecological levels (Adler, 2006; Colquitt, 2001; Furnham, 2003; De Vogli et al., 2007; Lind & Tyler, 1988; O’Connor, Morrison, & Morrison, 1996).

Researchers have noted that previous attempts to measure fairness contain a number of weaknesses (Colquitt, 2001; Lind & Tyler, 1988). The majority of measures used in justice and fairness research have had either poor psychometric properties, contained a single item, been tailored to a single domain of life, or comprised direct assessments with little generalizability and poor predictive value (Colquitt, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Greenberg, 1990; Hellman, Muilenberg-
Trevino, & Worley, 2008; Lind & Tyler, 1988). Furnham (2003) noted that over half of the published studies employing the most common instrument, the Belief in a Just World Scale (Rubin & Peplau, 1975), have used this measure uncritically. Additionally, psychometric evaluations of this tool have revealed limitations surrounding construct validity, dimensionality, and reliability of the scale. In light of these shortcomings, researchers have called for the development of a new and improved measure that includes multiple domains of fairness and greater attention to personal experiences (Furnham, 1998, 2003; Lipkus, 1991; Lipkus, Dalbert, & Siegler, 1996; O’Connor et al., 1996). The creation of a scale designed to capture experiences of fair treatment is consistent with the rich tradition of using scale development to advance social justice in the field of counseling psychology (Brewster & Moradi, 2010; Dawis, 1987; Elmore, 1965; Schwing, Wong, & Fann, 2013; Swanson, 2012; Wei, Alvarez, Ku, Russell, & Bonett, 2010).

Present Study

In light of the limitations of existing measures of fairness, the purpose of this study was to develop and establish the preliminary validity of a scale measuring personal experiences of fairness in several life domains in a general adult population. Specifically, the current study posed the following questions: (a) How do adults represented in focus groups experience and report fairness and lack of fairness? (b) What are important domains of fairness emerging from focus group data? (c) What items adequately capture the various ecological domains of fairness in an individual’s life? (d) What are the psychometric properties, including reliability and validity, of a scale designed to measure personal experiences of fairness in multiple ecological domains?
The scale development process utilized a two-phase exploratory mixed-methods design and included the use of focus group discussions, individual interviews, and expert reviews to inform the generation and revision of items (Creswell & Plano Clark, 2011; Creswell, Plano Clark, Gutmann, & Hanson, 2003, DeVellis, 2012). Quantitative data collected through the administration of the scale assisted in establishment of the psychometric properties and supported further scale refinement. Chapter 2 presents a literature review of fairness and its influence on important facets of human functioning. Chapter 3 describes the dissertation’s methods, including theoretical framework and design. Chapters 4 and 5 present results from the two respective phases of the study and Chapter 6 includes the general discussion.
Chapter 2: Literature Review

Origins of Fairness

Questions about justice and fairness have existed for centuries as humans have contemplated how they should treat one another and how resources should be distributed among groups. Sun (2013) explained that “most, if not all, societies – ancient or modern, tribal or industrial – have some notion concerning equality and fairness in economic, social, and political status” (p. 17). In fact, some variation of the Golden Rule, the ethic of reciprocity and perhaps the most common fairness edict, has existed in almost every society, religion, or philosophical teaching (Keefe, 2009). Although many of the first documented writings on these topics did not always use the specific terms justice or fairness, these ideas have existed throughout the course of human history and have influenced how issues of justice and fairness are considered today (Johnston, 2011; Miller, 1999).

For the first 1,500 years of recorded history, human beings’ ideas about fairness were based heavily on the notion of reciprocity, outlined in ancient texts spanning from the Babylonian Code of Hammurabi to Biblical accounts of lex talionis (Johnston, 2011). The course of fairness eventually shifted from the retribution-focused ideas of ancient Mesopotamians, Israelites, and Greeks, which emphasized vengeance, toward more systemic ideas of justice emerging from Greek philosophers (Johnston, 2011). Plato’s Republic and Aristotle’s Politics and Book V of Nichomachean Ethics, for example, represented pivotal works that made fairness a virtue, a fundamental characteristic of a good society and necessary for social cohesion (Boucher & Kelly, 1998). Justice at this time, based mainly on Aristotle’s works, emphasized merit, with little concern for
marginalized groups until Acquinas and later Enlightenment thinkers such as Locke, Hume, Smith, More, and Rousseau advocated for justice as a right entitled to every individual in society (Boucher & Kelly, 1998; Johnston, 2011).

Based on this shift, beginning around the 18th century, beliefs about justice centered around two main precepts, one surrounding the idea of utilitarianism and the other promoting deontological beliefs. Associated mostly with Bentham (1789/1970), utilitarianism included the belief that “it is the greatest happiness of the greatest number that is the measure of right and wrong” (Johnston, 2011, p. 132). In contrast, the deontological approach, attributed primarily to Kant (1797/1991), noted that the right (morally or ethically) presupposes the good, embracing the assumption that all human beings are of equal worth. The deontological doctrine objected to morality based on happiness because happiness can vary from person to person (Johnston, 2011). This transition from a concentration on retribution or merit toward a focus on the rights of individuals paved the way for further debates on fairness in subsequent centuries (Johnston, 2011; Miller, 1999).

Based on the writings of Spencer (1898) and Marx (1848, 1875), two major principles of social justice rose to prominence. These were the principle of desert and the principle of need (Johnston, 2011). In his Critique of the Gotha Programme, Marx (1875/1966) claimed that the distribution of goods should be “from each according to their ability, to each according to their needs” (Johnston, 2011, p. 184). Marx heralded need as a necessary component to fairness, a precept that continues to shape contemporary ideas of justice and fairness (Jost & Kay, 2014). Following Kant, Rawls
argued that justice must exist as a right for all, and that a fair society should perpetually consider the position of the most disadvantaged.

The ubiquity of fairness in the history of human discourse clearly illustrates its importance to the human experience. The subject of fairness matters to people and societies, and therefore requires a thorough exploration (Jost & Kay, 2014; Tyler et al., 1997). The evolution of justice theories and the legacy of debates, however, have led to some confusion regarding how these topics should be organized.

**Justice and Fairness**

Justice and fairness include broad and expansive ideas that have caused many social theorists to devote considerable effort to defining them in objective terms (Tyler et al., 1997). Although some disagreement in defining these concepts still remains, contemporary approaches have identified certain essential elements. Primary among these are the ecological nature, inherent multidimensionality, and fundamental assumption that matters of fairness include the treatment of people (Boucher & Kelly, 1998; Campbell, 2010; Jost & Kay, 2010; Miller, 1999; Solomon & Murphy, 2000).

Current conceptualizations of justice and fairness include two major components: (a) the distribution of goods and rights, and (b) the processes used to determine this dissemination. These elements concern the two major types, known as *distributive justice* and *procedural justice*, respectively (Leventhal, 1980; Miller, 1999; Törnblom & Vermunt, 2007). Distributive justice pertains to the fair and equitable allocation of burdens and privileges as well as rights and responsibilities in society. As Prilleltensky (2013) described this type, it is “the fair and equitable distribution of resources, pains and gains, benefits and obligations” (p. 150). Procedural justice, in contrast, refers to the
processes used to decide these outcomes. This includes decision-making rules and policies used to determine allocation of goods and rights (Jost & Kay, 2010; Tyler et al., 1997). Two important questions were posed by Jost and Kay (2014) defining the two types: “What is to be considered a truly fair dispersion of benefits and burdens and why?” and “What does it mean to treat others with dignity and respect?” (p. 4). The challenge of contemporary social science researchers is to answer these questions in the context of the human experience.

Despite an acknowledgement of these two distinct types, most references to social justice include only one specific type of justice, distributive justice, which has historically dominated much of the theoretical discourse (Miller, 1999; Prilleltensky, 2012). However, several researchers have illustrated that concerns about fairness pertain not only to the allocation of resources but also to the methods by which decisions are made and to the manner in which people are treated (Folger, 1977; Leventhal, 1976, 1980; Leventhal, Karuza, & Fry, 1980; Lind & Tyler, 1988; Thibaut & Walker, 1975; Tyler et al., 1997). Recently, procedural justice has been theorized to include subtypes such as informational justice, which involves communicative aspects of interactions such as honesty; and interpersonal justice, which heralds respectful treatment (Bies, 2005; Colquitt, 2001; Greenberg, 1993).

Despite recent attention to interpersonal interactions, justice has still largely remained interpreted on the ideological level, emphasizing the apportionment of rights and resources on larger, societal scales (Miller, 1999). Some researchers have applied the terms macrojustice to topics surrounding the fairness of outcomes in society and microjustice to the fairness of rewards pertaining directly to individuals (Brickman,
Folger, Goode, & Schul, 1978). Even with this important distinction, the dominant emphasis of justice conversations has remained at the macrojustice level (Miller, 1999). Jost and Kay (2014) stated that “social justice, defined in this way, is a property of social systems” (p. 3). Similarly, Frankena (1962) defined social justice as “a predicate of societies” in which the concern surrounds “justice and injustice writ large,” rather than the application or relevance of justice to individuals (p. 1).

Although justice may be appropriately situated on this abstract level, fairness represents a concept that influences all levels of human existence. Fairness is as personal as it is philosophical. Therefore, conceptualizing fairness in a more localized and personal way proves useful in distinguishing it from the concept of justice.

Historically, notions of justice have often emphasized distributive and procedural fairness on the communal and organizational levels, whereas the personal and interpersonal aspects of fairness have received little attention (Sun, 2013). Due to this lack of attention, justice and fairness have often been viewed interchangeably and largely approached in an ideological manner. The importance of fairness for individuals in their everyday lives has been largely overlooked (Prilleltensky, 2013). Sun (2013) described this deficiency as the “common confusion between justice as abstract ideology and fairness as concrete perception” (p. 24). Similarly, Solomon (1990) lamented, “we have over-intellectualized our feelings about justice, with the result that our feelings have become as confused as our theories, if indeed they have not been eclipsed by them” (p. 3).

Therefore, despite many theories discussing what it means to live in a fair society, arguably the most important concern of fairness—how it affects each person—has been
largely neglected. Even when assessed on the individual level, justice and fairness have been measured as global or intellectual constructs rather than values having powerful personal meaning. Corning (2011) argued that, regardless of where fairness is experienced, such as at institutional or societal levels, it remains a deeply personal matter.

Like justice, fairness can be divided into two distinct types: (a) distributive fairness, which includes the outcomes of events, and (b) procedural fairness, which involves the processes used to determine those outcomes. These two subtypes of fairness represent the what and the how of every situation, event, relationship, or exchange (Prilleltensky, 2012). Referred to here as the substantive types of fairness, these two types closely parallel the subtypes of justice.

Fairness is distinguished from justice, however, in its relational and inherently personal nature (Corning, 2011; Wilson, 2012). At its heart, fairness is about the treatment of people: their conduct with one another, between groups, and throughout societies. In this sense, fair treatment exists on multiple levels (Furnham & Procter, 1992; Grollman, 2013). Following Bronfenbrenner’s (1979) ecological systems framework and the existing literature on justice and fairness, fairness can be conceptualized along an ecological spectrum existing within specific contexts (Furnham & Procter, 1989; Grollman, 2013). Fairness, in this sense, is a multidimensional construct.

Specifically, fairness exists within several ecological levels relating to an individual’s environment. These levels include the interpersonal (Colquitt, 2001; Corning, 2011; Greenberg, 1993; Wilson, 2012), occupational (Elovainio, Kivimäki, & Helkama, 2001; Fujishiro & Heaney, 2007; Greenberg, 1990), community (Dalton, Hill, Thomas, & Kloos, 2013; Prilleltensky, 2012), and sociopolitical levels (Furnham &
Procter, 1992; Krieger, 2012). These levels describe the locations of fair treatment. For instance, an exchange between two individuals would take place on the interpersonal level, whereas the fairness of large-scale policies would exist on the sociopolitical level (Krieger, 2012; Prilleltensky, 2012). Each situation, relationship, or event can be classified within a substantive type of fairness and along an ecological level (Figure 1).

**Substantive Types**

<table>
<thead>
<tr>
<th>Ecological Level</th>
<th>Distributive</th>
<th>Procedural</th>
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<tbody>
<tr>
<td>Microsystem</td>
<td></td>
<td></td>
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<tr>
<td>Interpersonal</td>
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<tr>
<td>Occupational</td>
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<tr>
<td>Exosystem</td>
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<tr>
<td>Community</td>
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<td>Macrosystem</td>
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<td>Sociopolitical</td>
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</tbody>
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*Figure 1. Substantive types and ecological levels of fairness*

In addition, fairness can take many forms (Grollman, 2013). The underlying motive for fair or unfair treatment may be informational, cultural, developmental, or retributive, among others (Colquitt, 2001; Greenberg, 1990; Miller, 1999; Prilleltensky, 2012; Törnblom & Vermunt, 2007). These forms of fairness describe the situations in which fair treatment occurs and the reasons, motives, or categories that characterize the treatment. Because the motives behind fair or unfair treatment are often difficult to define, however, identifying these reasons may not be necessary in understanding how unfair treatment affects individuals (Grollman, 2013; Pascoe & Richman, 2009; Williams et al., 2012). Therefore, as depicted in Figure 1, the essential components of fairness, for
the purposes of the current study, exist in the substantive types (the *what* and *how*) and the ecological levels (the *where*).

An important consideration in understanding fairness is that personal perceptions of fair treatment matter to individual functioning, and deciphering what is fair or unfair is a localized and personal process (Adler & Stewart, 2010; Chae et al., 2008; Corning, 2011; Kaiser & Major, 2006; Pascoe & Richman, 2009; Sun, 2013). The nature of fairness beliefs is likely complex. Because it is possible to have different perceptions about fairness in different domains, it is important to treat these dimensions as distinct within the general fairness framework (Colquitt, 2001; Furnham, 1998). For instance, some individuals may perceive they are treated fairly in their close interpersonal relationships, but not within their work environment (Bies, 2005; Furnham, 1998; Greenberg, 1993). Because most of the empirical work examining fairness has focused on fairness in the workplace, there remains a need to expand the context of fairness to other domains and ecological levels to better understand its effects on human functioning (De Vogli et al., 2007).

**Fairness Research**

Recent research in a variety of disciplines has begun to reinforce the notion of fairness as important to individuals, uncovering its profound personal, biological and genetic roots (Sun, 2013). Recent studies in biology, anthropology, economics, sociology, and psychology have produced a clearer picture of the ways in which personal persuasions of fairness manifest themselves. Research driven by economics for example, has used the Ultimatum Game (Camerer, 2003), Cooperation Game (Fehr & Gächter,
2002), or Prisoner’s Dilemma (Axelrod, 1980) to highlight how universally perceptions of fairness and unfairness influence decision making.

A seminal study in which researchers discovered that monkeys reject unequal pay also supported the conclusion that fairness is deeply ingrained in human biological and evolutionary makeup (Brosnan & de Waal, 2003). Evolutionary scientists hypothesized that this fairness instinct developed through competition within social groups, as individuals fought to secure an equitable distribution of resources to promote survival (Bekoff, 2001). Additionally, this predilection toward fairness also originated from the need for cooperation in communal living to enhance the survival of entire groups (Boehm, 1999; Greene, 2014). A key deduction from such research included the recognition that an individual sense of fairness, as a critical result of natural selection, is a localized process, always operating in reference to peers and the immediate environment (Brosnan, 2014; Sun, 2013). Rooted in this evolutionary understanding, the maturation of modern day fairness has consisted of a complex interplay between nature and nurture; the innate sense of fair treatment along with philosophical ideas on deservedness, equality, and merit (Corning, 2011; Deutsch, 1975).

Most of the early research on fairness existed within the fields of organizational science and management, but questions about the ways people navigate fairness have been guided primarily by psychology. Perceptions of fairness and moral judgments in various forms have interested psychologists for decades, although the discovery that people are strongly affected by their assessments of what is fair in their dealings with others is relatively new (Elovainio, Kivimäki, & Vahtera, 2002; Furnham & Procter, 1989; Jost & Kay, 2014; Sharp, 1898; Tyler et al., 1997). Tyler et al. (1997) explained
that “the *psychological* study of social justice involves efforts at understanding the causes and consequences of subjective justice judgments” in addition to the influence these judgments have on cognitions, emotions, and behaviors (p. 5).

Within psychology the emphasis on justice has originated largely from social psychology (Jost & Kay, 2010, 2014) and counseling psychology (Fouad, Gerstein, & Toporek, 2006; Goodman et al., 2004; Toporek, Gerstein, Fouad, Roysircar, & Israel, 2010). Research in social psychology, for instance, represented some of the first studies examining what people mean by fairness and how it influences their thoughts, feelings, and behaviors (Jost & Kay, 2010; Tyler et al., 1997). Additionally, counseling psychology has included social justice as a foundational tenet of its field; it has dedicated significant attention to incorporating issues of justice into research, training and practice (Caldwell & Vera, 2010; Douce, 2004; Fouad et al., 2004; Koch & Juntunen, 2014; Speight & Vera, 2004; Vera & Speight, 2003).

The first iterations of psychological research on justice and fairness emerged during the latter half of the 20th century, after World War II vividly illustrated both the devastating impact of social injustice and the human capacity to overcome it (Jost & Kay, 2010). The theory of relative deprivation, one of the first formulated theories of fairness, emerged from research on the United States military when Stouffer, Suchman, DeVinney, Star, and Williams (1949) discovered that soldiers based their satisfaction of personal promotion on where they stood in comparison to peers of similar rank. Researchers concluded that a person’s appraisal of a situation as either fair or unfair depended heavily upon social comparison processes, rather than solely on outcomes (Davies, 1962; Festinger, 1954; Gurr, 1970; Stouffer et al., 1949). This research revealed that
individuals, rather than determining fairness based on an absolute standard, typically employ a comparative process, contrasting their own situation with that of others. Researchers hypothesized that feelings of fairness and unfairness in the distribution of outcomes depend on comparisons between what people have and what they feel they deserve. This finding led researchers to attend to personal and interpersonal processes in understanding fairness (Tyler et al., 1997).

Subsequent research stemming from the concept of relative deprivation sought to understand when people do or do not perceive unfairness (Jost & Kay, 2010; Walker & Smith, 2002). The paramount discovery that people inherently evaluate the fairness of their own outcomes by comparing them with the outcomes of others shifted the locus of fairness from global ideology to social and psychological processes (Crosby, 1976; Folger, 1987; Lipkus, Dalbert, & Siegler, 1996; Mark & Folger, 1984). The emotional and behavioral responses observed from interpersonal comparisons generated further speculation about the ways in which individuals react to, and respond to, perceived unfairness (Eibner, Sturm, & Gresnez, 2004; Tyler et al., 1997).

Related to relative deprivation, the emergence of equity theory dealt with questions of fairness and relativity in the allocation of resources (Adams, 1965; Crosby, 1976; Walster, Walster, & Berscheid, 1978). This line of research began in the 1960s in response to concerns about fair pay and opportunities for promotion in work environments (Adams, 1965). Equity theory posited that the evaluation of personal resources is linked not to objective outcome levels, but to outcomes received relative to inputs (Tyler et al., 1997).
Equity theory research advanced two important findings. First, studies provided evidence that individuals use comparison to others to judge the fairness of outcomes and processes; and second, that people dislike being rewarded in a disproportionately favorable manner (overbenefited) as much as being underbenefited (Adams, 1963, 1965; Homans, 1974; Jost & Kay, 2010). Equity theory highlighted the distress humans experience in observing any inequity and the subsequent emotional responses such as anger and guilt (Hegtvedt, 1990; Homans, 1974; Jost, Waksal, & Tyler, 2008; Schmitt, Behner, Montada, Müller, & Müller-Fohrbrodt, 2000).

Research on equity theory uncovered the ways in which humans respond to unfairness both behaviorally and emotionally. Findings suggested that perceptions of injustice elicit so much distress that individuals will make considerable attempts to restore equity (Walster, Bersheid, & Walster, 1973). Researchers hypothesized that people attempt restoration in one of two ways, either objectively restoring equity by adjusting inputs or outputs, or psychologically by rationalizing or reframing the link between inputs and outputs to make the situation seem equitable (Hatfield & Sprecher, 1984; Jost & Kay, 2010). In this regard, researchers found evidence of a justice motive, which demonstrated people’s willingness to sacrifice their own welfare to ensure fair treatment of others (Jost & Kay, 2010; Lerner, 1977, 1980, 2003; Miller, 1977; Monroe, 2004; Montada, 2002; Tyler, 1994; Tyler & Smith, 1998).

Preliminary findings from research on early justice theories such as equity theory and relative deprivation indicated that individuals inherently approach situations with a fairness lens. Moreover, their evaluations surrounding the fairness of outcomes had significant psychological consequences (Lerner, 1974, 1980). If individuals decide that
the ratio of inputs to outputs in a given case is disproportionate, or if comparisons to others and expectations of deservedness are unequal, psychological distress is theorized to ensue (Greenberg, 1984; Walster et al., 1973).

Lerner (1965) conducted several studies investigating how individuals perceived fair or unfair situations, as well as their responses to witnessing or experiencing injustice. His subsequent Just World hypothesis (Lerner, 1980) demonstrated that unfairness caused significant psychological distress for people. They would often actively work to restore equity in a situation, either objectively through reparations or subjectively through psychological reconstrual to deny or minimize an unfair event (Furnham & Procter, 1989; Jost & Kay, 2010; Reichle & Schmitt, 2002). Lerner’s research (1977, 1980, 2003) revealed that the desire to maintain fairness can be so persuasive that people may blame victims of unfair events for their fate or even derogate themselves for their own misfortune. The results of Lerner’s (1977, 1980, 2003) studies confirmed the conclusions of previous research that fairness matters to individuals, so much so that it powerfully affects individual behavior and emotional well-being (Olson & Hafer, 2001; Walster & Walster, 1975).

**Fairness and Well-Being**

Research drawing from theories that examined an individual’s relationship with fairness, such as equity theory and the Just World Belief (Adams, 1963; Lerner, 1980; Leventhal, 1980), elucidated how deeply humans care about fairness. Researchers identified several indelible effects of perceptions of fairness on personal well-being. Studies showed that judgments about what is fair or deserved are not only “at the heart of people’s feelings, attitudes, and behaviors in their interactions with others” (Tyler et al.,
1997, p. 6), but also undeniably affect their physical and psychological health (Lipkus et al., 1996).

Beginning with the Whitehall studies in Britain in the 1960s (Marmot et al., 1978), researchers unveiled several significant associations between fair treatment and human health and well-being. Results from organizational development literature revealed that unfairness in workplace settings led to several health problems (De Vogli et al., 2007; Elovainio, Kivimäki, Steen, & Vahtera, 2004; Kivimäki et al., 2004; Lawson, Noblet, & Rodwell, 2009). Research indicated that a lack of fairness in work environments was linked with low self-rated health (Elovainio, Kivimäki, & Vahtera, 2002), higher psychosomatic complaints (Schmitt & Dorfel, 1999), and higher rates of coronary heart disease (De Vogli et al, 2007; Fujishiro & Heaney 2009; Kivimäki et al., 2005; Marmot et al., 1978), diabetes (Reid et al., 1974), sleeping problems (Elovainio et al., 2009), and psychiatric morbidity (Elovainio, Kivimäki, Vahtera, Keltikangas-Järvinen, & Virtanen, 2003). Findings showed that not only do people inherently approach situations with a fairness lens, but that their evaluations of these situations have definitive consequences for personal well-being. Connecting such findings with relative deprivation and equity theory, Marmot (2004) labeled this the “status syndrome” and hypothesized that perceptions of lower rank or relative inequality to others produced biological health risks.

The mechanisms behind the relationship between unfairness and individual health are still not well understood. Recent research, however, has begun to uncover possible psychobiological pathways to explain the effects of unfair treatment on physical functioning (Adler, 2009; Wilkinson, 1999). Most of the explanations include “the stress
“process” (Pearlin, Menaghan, Lieberman, & Mullan, 1981, p. 337) which posits that distressing events, experiences or conditions, such as pervasive inequality or unfair treatment trigger a heightened biological stress response, deplete important physical and psychological resources, and compromise an individual’s ability to cope (Adler & Stewart, 2010; Pearl, 1999; Pearl, Shieman, Fazio, & Meersman, 2005; Segerstrom & Miller, 2004; Selye, 1956; Thoits, 2010).

Studies have shown that, relative to biological responses, inequity and unfairness elevate the stress hormone cortisol and that continuously heightened levels have physiological consequences, known as “allostatic load” (McEwen, 1998, p. 33), which often result in adverse physical health consequences (Adler & Stewart, 2010; Epel et al., 2004; Ferrie, Shipley, Stansfield, & Marmot, 2002; Seeman et al., 2014). An important finding was that the burden of unfairness on health is mediated by psychological processes (Adler, 2009; Adler & Stewart, 2010; Adler et al., 1994; Folkman, 2011; Lazarus & Folkman, 1984; Thoits, 2010). Cognitive interpretations of unfair experiences are believed to increase the stress response, which in turn leads to lower well-being and poorer psychological and physical health (Dunkel-Schetter et al., 2013; Epel et al., 2004; Lazarus & Folkman, 1984; Thoits, 2010).

The psychological distress caused by perceived unfairness can take many forms. Studies have linked perceptions of fairness with numerous psychological outcomes, such as subjective well-being (Sutton & Douglas, 2005), general psychological stress (Tomaka & Blascovich, 1994), depression (Hafer & Olson, 1993; Walker & Mann, 1987), low self-esteem (Dalbert, 1999; Koper, Van Knippenberg, Bouhuijs, Vermunt, & Wilke, 1993), feelings of anger (Dalbert, 2002; Montada, 1994; Shaver, Schwartz, Kirson, &
and increased envy (Smith, Parrott, Ozer, & Moniz, 1994). Perceptions of justice and fairness have been associated with health behaviors as well, including substance use, eating habits, and a sedentary lifestyle (Lucas, Alexander, Firestone, & LeBreton, 2008). Studies on interpersonal relationships have also implicated a lack of fairness as influential to several physical and psychological problems (Hirigoyen, 2000; Iwaniec, Larkin, & McSherry, 2007; Jantz & McMurray, 2003; Jory & Anderson, 1999; Kelly, Warner, Trahan, & Miscavage, 2009; Olson, DeFrain, & Skogrand, 2008).

In contrast, fair treatment has proved instrumental in promoting positive interpersonal relationships and enhancing emotional and physical well-being of intimate partners and families (Buettner, 2010; Cacioppo, Reis, & Zautra, 2011; Cohen, 2004; Gottman, Gottman, & Atkins, 2011; Tyler & Belliveau, 1995). The belief that one is treated fairly is associated with a number of positive outcomes. These include higher positive affect (Dalbert, 1998), optimism (Littrell & Beck, 1999), effective coping with stress (Tomaka & Blascovich, 1994), better sleep (Jensen, Dehlin, Hagberg, Samuelsson, & Svensson, 1994), lower levels of depression (Ritter, Benson, & Snyder, 1990), and less loneliness (Jones, Freemon, & Goswick, 1981; Sutton & Douglas, 2005).

Research identifying the effects of unfair treatment on health and well-being has also emerged from the body of literature focused on discrimination. The underlying or overt causes of fair or unfair treatment are often based on group identification (Pascoe & Richman, 2009; Pearl, 1999; Thoits, 2010). Similar to studies examining perceptions of fairness, researchers have identified discrimination, meaning differential treatment based on social group membership, as a significant psychological stressor (Grollman, 2013; Pascoe & Richman, 2009; Thoits, 2010). Researchers have found correlates between
poorer mental and physical health outcomes and a number of factors related to
discrimination. These include race and ethnicity (Carter et al., 2016; Chae et al., 2008;
Harris et al., 2006; Huynh & Fuligni, 2010; Liang, Alvarez, Juang, & Liang, 2007; Perry,
Harp, & Oser, 2013; Priest et al., 2013; Wei et al., 2010; Williams et al., 2012), gender
(Brown, Bigler, & Chu, 2010; Gilbert, 1992; Goswami & Gupta, 2012; Schmitt,
Branscombe, Kobrynowicz, & Owen, 2002; Schmitt, Branscombe, & Postmes, 2003),
sexual orientation (Brewster & Moradi, 2010; Feinstein, Goldfried, & Davila, 2012;
Hatzenbeuhler, 2009), ability (Li & Moore, 1998; Paludi, 2012; Paludi, DeSouza, &
Dodd, 2011), socioeconomic status (Caputo, 2003; Carson, 1992; Fuller-Rowell, Evans,
& Ong, 2012; Krumboltz, 1992; Simons, Groffen, & Bosma, 2013), and physical
appearance and obesity (Carr & Friedman, 2005; Concepcion, 2008). In fact, research
findings over the past two decades have overwhelmingly documented the negative health
effects of discrimination (Fuller-Rowell, Evans, & Ong, 2012; Paradies, 2006; Pascoe &
Richman, 2009; Schafer & Ferraro, 2011; Williams & Mohammed, 2009).

Although discrimination and unfairness represent similar concepts, recent
research has identified distinctions between these two constructs (Grollman, 2013;
Pascoe & Richman, 2009). Previous literature has described discrimination as a subtype
of unfair treatment (Brown, 2001; Krieger, 2012; Prilleltensky, 2012; Thoits, 2010).
Whereas discrimination was perceived to consist of acute experiences of differential
treatment based on specific membership or attributes, unfairness encompasses a broader
range of experiences not limited to treatment explicitly based on personal characteristics
(Grollman, 2013; Thoits, 2010). Scales measuring these constructs, therefore, may not
capture the same experiences from responders (Brown, 2001; Grollman, 2013; Pascoe &
Richman, 2009). Chae et al. (2008) used two instruments measuring perceived discrimination and generic experiences of unfairness to assess the effects of differential treatment on health behaviors in Asian Americans. The researchers found only a modest correlation ($r = .43$) between discrimination and unfairness: more than half (51%) of the participants reported experiencing some unfair treatment not related to discrimination.

Other research has supported the finding that differential treatment phrased as unfairness, rather than explicit references to discrimination, is more inclusive and yields higher self-reported estimates (Grollman, 2013; Krieger, 2012; Shariff-Marco et al., 2012). Grollman (2013) demonstrated that language using terms like “unfair treatment” compared to “discrimination” captured more experiences of differential treatment from all demographic groups, including more privileged groups such as White men and non-obese people (p. 89).

The majority of research on discrimination concentrates on race and ethnicity and excludes other aspects of marginalization and the intersectionality of multiple forms of unfair treatment (Andersen & Collins, 2007; Collins, 2008; Crenshaw, 2005; Rosenfield, 2012; Schwing et al., 2013). It can be difficult for responders to identify the motives behind perceived unfair experiences. Therefore, researchers’ use of terms related to fairness is more inclusive and more effectively captures personal perceptions of fair treatment (Hirsch & Cha, 2008; Reskin, 2012; Williams & Mohammed, 2009).

According to the stress process model, differential treatment is theorized to induce stress which increases levels of psychological and physical health problems, regardless of the reasons underlying the unfair experiences (Adler, 2009; Adler & Stewart, 2010; Grollman, 2013; Krieger, 2012; Pearlin, 1999). Therefore, in addition to the difficulty of
capturing differential treatment accurately, the motives behind it may not be important, or even relevant, in assessment of the impact of unfairness on health outcomes (Brown, 2001; Kessler, Mickelson, & Williams, 1999). To more accurately understand the relationship between perceptions of differential treatment and health, researchers have called for replacement of the language of discrimination with the more inclusive language of unfairness (Williams & Mohammed, 2009; Williams, Yu, Jackson, & Anderson, 1997).

The body of research conducted on fairness and its impact on personal well-being has confirmed that perceptions and experiences of fairness strongly shape the ways people feel and behave and has substantial effects on individual health (Graham, 2009; Marmot, 2004; Prilleltensky, 2012; Tyler et al., 1997). One of the most important findings is that *perceptions* of unfair treatment, as opposed to the *objective* condition of the treatment, appear most important for many health outcomes (Adler, 2006; Adler & Stewart, 2010; Kaiser & Major, 2006; Marmot & Wilkinson, 2001; Pascoe & Richman, 2009; Williams et al., 2012). Given the importance of perceptions of fairness on many aspects of human functioning, an accurate and scientific assessment of individual perceptions remains an important endeavor for researchers aspiring to further understand the impact of fairness on the human experience. However, at present a comprehensive and psychometrically sound instrument to capture perceptions of fairness in individuals does not currently exist.

**Fairness Measures**

Research has demonstrated an incontrovertible association between fairness and personal health and well-being. However, little effort has been made to develop
appropriate measurement tools to capture individual perceptions of fair treatment. The majority of studies examining fairness have used instruments possessing theoretical and psychometric weaknesses or single-item measures tailored to a particular, solitary experiment with little generalizability and no psychometric validation (De Vogli et al., 2007; Furnham, 1998; Furnham & Procter, 1989; Lipkus, 1991).

Rubin and Peplau (1975) developed the first scale to measure individual perceptions of justice, the Belief in a Just World Scale (Just World Scale), which sought to capture “an attitudinal continuum extending between two poles of total acceptance and total rejection of the notion that the world is a just place” (p. 66). This scale requires respondents to indicate how much they agree or disagree with 20 items on a 6-point continuum. Half the items describe a fair world in which good deeds are rewarded and the other half refer to an unjust world in which good deeds are less likely to be rewarded than bad deeds (Furnham & Procter, 1992). The conception of Rubin and Peplau’s Just World Scale facilitated research on fairness on the individual level. The scale provided a measure that could more directly link the way people react to events in their environment and their personal ideas of fairness (Furnham, 1998). The creation of an instrument designed to capture notions of fairness led to subsequent widespread usage and Rubin and Peplau’s (1975) tool represents the most commonly used scale for measuring beliefs about justice in the literature (Furnham, 1998). However, results from studies using the Just World Scale revealed several limitations for using the scale to capture personal perceptions of fairness.

Researchers have criticized the appropriateness, utility, and psychometric properties of the Just World Scale (Furnham, 1998). Little evidence exists of test-retest
reliability, and studies validating the instrument have largely ignored essential aspects such as construct or predictive validity (Furnham & Procter, 1989). Although the scale purports to measure a single construct—the belief that the world is just—multiple factor analytic studies have actually suggested that beliefs about justice and fairness may be multidimensional (Ambrosio & Sheehan, 1990; Fink & Wilkins, 1976; Furnham & Procter, 1989; Hyland & Dann, 1987; Lipkus, 1991; Whatley, 1993). Lipkus (1991) commented on the need for an updated instrument: “in sum, several factor analytic studies suggest that Rubin and Peplau’s (1975) Just World Scale should be revised” (p. 1171).

In the assessment of personal perceptions of fair treatment, the Just World Scale may be limited in its theoretical scope as well. Several researchers have questioned whether the instrument more likely measures the belief in a just world as a stable personality trait (Furnham, 1998). Critiques indicated that the scale likely overlooks personal perceptions and the motivational construct originally described by the Belief in a Just World theory in favor of global beliefs about the existence of justice in the world in general (Hafer & Begue, 2005; Jost & Kay, 2010; Lerner, 1977, 1980). T

The scale measures a global response to each item, and it remains unclear whether an individual responds to items in the Just World Scale pertaining to the self, other people, or a combination of both (Lipkus, 1991). For example, the scale includes items such as “By and large, people deserve what they get” and “Basically, the world is a just place” (Rubin & Peplau, 1975, p. 69). Lerner (1980) suggested the scale possesses unsuitable items and taps a naïve view of social reality. Lerner thus recommended a revision of the scale to adequately assess an individual’s perceptions of fairness in the
world (Furnham & Procter, 1989). Despite wide use of the Just World Scale, critics agree that the measure may not represent the most appropriate tool to assess an individual’s experiences of the world as a fair place (Lipkus et al., 1996).

Surprisingly, few attempts have been made to improve upon the Just World Scale or develop alternative instruments. Consequently, limitations in measuring fairness remain (Furnham, 1998; Furnham & Procter, 1992). Dalbert, Montada, and Schmitt (1987) created a German version of Rubin and Peplau’s Just World Scale in combination with a Specific Beliefs in a Just World Scale (Schmitt et al., 2008), which has been used in research and validated in English (Furnham, 1995). However, Furnham (1998) stated that this first measure was “not without its problems” and that “there remains serious doubt concerning the construct validity of the measure” (p. 153). Lipkus (1991) created a shorter 7-item Global Belief in a Just World Scale and found that this instrument measured a unidimensional construct. The instrument had improved internal consistency in the assessment of the general belief that people get what they deserve and deserve what they get. Similarly to Rubin and Peplau’s (1975) scale, this measure captures global beliefs about the world in general rather than personal experiences of fairness pertinent to individual well-being.

Significant debates concerning the dimensionality of fairness beliefs exist in the measurement literature. Most researchers recognize that an individual may have different perceptions about fair treatment depending on the domain and scope of the topic. Although psychometrically improved, Lipkus’s (1991) unidimensional Global Belief in a Just World Scale intentionally overlooks several content areas. This scale assesses only a broad notion of the presence of justice in the world, rather than personal perspectives or
experiences of fair treatment in several life domains. To address this limitation, Furnham and Procter (1992) attempted to create a Multidimensional Just World Scale on the assumption that people can have different just world beliefs about one domain but not others. The researchers divided fairness into three spheres: personal, interpersonal, and sociopolitical (Furnham, 1998; Furnham & Procter, 1989). This scale attempted to address the dimensionality of fairness beliefs. However, the scale demonstrated low internal consistency, particularly within subscales, and weak inter-item correlations (Lipkus, 1991). Additionally, although the interpersonal and sociopolitical factors were evident, no clear factor pertaining to the personal domain materialized, demonstrating a need to develop an instrument that better captures personal perceptions of fairness.

Differentiation of personal beliefs about fairness for self-versus-others remains essential to an understanding of the associations between fairness and individual health and well-being (Furnham & Procter, 1989). None of the previously used scales measured how people believe they are actually treated, arguably the most essential characteristic relating fairness to individual well-being (Adler, 2011, 2006; Adler & Stewart, 2010). Lipkus et al. (1996) made an initial attempt to separate just world beliefs for self and others by making slight adjustments to Rubin and Peplau’s (1975) Just World Scale. However the authors could not find two distinct constructs in the new measure.

Researchers have recognized the importance of differentiating beliefs about fairness for self and others (Begue & Bastounis, 2003; Lucas, Zhdanova, Wendorf, & Alexander, 2013; Sutton & Douglas, 2005). Nevertheless, only one attempt has been made to develop an independent scale measuring personal beliefs in a just world (Dalbert, 1999). Based on the general just world scale of Dalbert et al. (1987), Dalbert (1999)
created the Personal Belief in a Just World Scale. This measure remains unpublished and largely unexamined for its psychometric properties, although results of its initial use support the notion that personal and general belief in a just world should be differentiated (Dalbert, 1999).

The absence of an accessible instrument to measure personal beliefs about fairness has resulted in the predominance of global assessments of fairness in previous research (Lipkus & Siegler, 1993). Thus, confusion remains whether prior empirical findings on fairness and well-being are primarily attributable to participants responding to these measures as though the world was fair for themselves, for others, or in general. This ambiguity suggests that accurate relationships between fairness and specific outcomes may not be adequately evaluated (Lipkus, Dalbert, & Siegler, 1996).

An additional concern with the majority of measures used to assess beliefs about fairness relates to their dependence on the Belief in a Just World theory (Lerner, 1965; Lerner & Miller, 1978). The Belief in a Just World theory is a distinctly cognitive interpretation of injustice and a paradigm that has been criticized for tending to blame the victim (Berry, 2007; Furnham, 2003; Heider, 1958; Leventhal, 1980). Additionally, measures based solely on the Belief in a Just World theory inherently assess beliefs about the existence of fairness in the world in general, rather than personal perceptions of fair treatment that may play a more influential role in individual well-being. Results from most of the studies using Just World Belief-based measures have indicated that the belief in a just world represents a stable “belief system,” constant over time and consistent across situations (Furnham, 1998, p. 142). Some researchers have described the belief in a just world as a “judgment norm” (Alves & Correia, 2010, p. 222) or “positive illusion”
(Hafer & Begue, 2005, p. 129) that serves more as a strategy to preserve these beliefs than an actual representation of the beliefs themselves.

Furthermore, these psychometric measures have tended to treat the Belief in a Just World as an individual difference variable, using it as a stable trait with few studies investigating how and why it develops (Furnham, 1998). Lerner (1980) therefore referred to these self-report measures as “peek-a-scopes” that do little to illuminate the victimization process or explain the etiology, development, or change in these beliefs (p. 139). Lerner (1980) further suggested that scales such as the Belief in a Just World Scale might be better viewed as an index of various styles people employ to maintain beliefs that the world is fair rather than the degree to which people believe in a just world (Furnham & Procter, 1989).

Scales that measure the Belief in a Just World, therefore, do not necessarily assess qualities important to the etiology of those beliefs, such as one’s experiences with fair treatment. Measuring fairness either as an attribution style or stable personality dimension does little to inform the ways in which experiences of fairness affect individuals. Thus far, the only options for measuring fairness scientifically have been limited to solitary items tailored to specific research studies or instruments based on the Just World Belief theory not designed to capture the perceptions of personal treatment (Elovainio et al., 2002; Konoxsky, Folger, & Cropanzano, 1987; LaTour, 1978; Siegrist, Connor, & Keller, 2012; Sullivan et al., 2008; Zemore, Karriker-Jaffe, Keithly, & Mulia, 2011).

The limitations of existing instruments for measuring justice necessitate an updated and psychometrically improved instrument to capture personal experiences of
fairness. Indeed, several justice researchers have called for the creation of a tool that more accurately captures personal experiences of fair treatment, rather than the general existence of justice in the world (Furnham & Procter, 1989; Hafer & Olson, 1993; Lerner & Miller, 1978). Current instruments that actually measure strategies to preserve just world beliefs or assess global beliefs appear to confound important and subtle distinctions that may have implications for psychological well-being and behavior (Lipkus et al., 1996). Additionally, the existing evidence for the multidimensionality of fairness suggests people may feel that the world is fair in one domain of life but not in another (Lipkus, 1991). Several researchers, therefore, have confirmed the need for a more inclusive, multidimensional instrument to capture the relationship between perceptions of fair treatment in multiple life domains and personal health and well-being (Adler, 2006; De Vogli et al., 2007; Prilleltensky, 2013).

Thus, to adequately investigate the ways in which perceptions of fairness affect individuals, a new multidimensional and psychometrically sound measure is necessary. Corning (2011) asserted that “our experience of fairness has both a ‘cognitive’ element and an ‘affective’ element;” he suggested it is critical to capture “perceptions, attitudes, and emotions about fairness” in order to better understand the role it plays in the human experience (p. 17). Emphasizing the need to investigate the ways in which perceptions of fairness affect individuals, Tyler et al., (1997) insisted that “it is important to pay attention to people’s subjective judgments about what is just or fair” (p. 4). This is a task that has yet to be undertaken in an inclusive and robust scientific manner. In fact, Prilleltensky (2013) argued that psychologists in particular must examine in depth the interaction between various domains of well-being and diverse types of fairness, because
this association is important and has not been comprehensively explored. Creation of a multidimensional scale of fairness that attends to the subjective experiences of individuals will allow the field of psychology to better assess, understand, and explain the manner in which fairness influences personal well-being (De Vogli et al., 2007). The next step, therefore, is the creation of such a measure, the purpose of the current study.

In summary, in order to understand the relationship between fairness and outcomes related to well-being, the development of a new instrument to capture perceptions of fairness is necessary. Previous research has uncovered a distinct link between fair treatment and health and wellness (Caldwell & Vera, 2010; Cornelius & Wallace, 2010; Krawczyk, 2009; Prilleltensky, 2012; Whitman et al., 2012). However, previous tools to measure fairness have proven inadequate in capturing personal perceptions of fair treatment (Colquitt, 2001; Furnham, 2003; O’Connor et al., 1996). Most of the studies examining fairness have used the Belief in a Just World Scale (Rubin & Peplau, 1975), which assesses attitudes about the world as a fair place in general, rather than the personal experiences of fair or unfair treatment important to personal well-being. Additionally, measures based on the Belief in a Just World theory have approached fairness as unidimensional, although recent research has clearly demonstrated that fairness should be assessed in multiple domains (De Volgi et al., 2007; Furnham, 1998; Furnham & Procter, 1992). The poor psychometric properties of most instruments of fairness, as well as their limited theoretical scope, suggest the need for the creation of a more scientifically sound, multidimensional measure of perceived fairness, the purpose of the present study.
Chapter 3: Method

Purpose of the Study and Overview of Research Approach

The purpose of this study was to develop and establish preliminary validity of a scale measuring personal experiences of fairness in a general adult population. The goals of this study included contributing to the current definition of fairness found in the literature and identification of domains of fair or unfair treatment in individuals’ lives. The process of scale development included the use of focus group discussions, individual interviews, and expert reviews to inform the generation and revision of items. Scale validation used quantitative data collected through administration of the items to establish the psychometric properties and support further scale refinement.

This study consisted of two phases: scale development and scale validation (Table 1). Scale development consisted of the generation of items, item revision, and analysis of content validity through cognitive interviews and expert analyses. Multiple sources were utilized to create the initial item pool including (a) analysis of existing literature on justice and fairness and (b) focus group discussions with a diverse sample of adult community members to understand their lived experiences of fairness.

The process of item revision and analysis of content validity included individual cognitive interviews to refine items for content, clarity, and wording, as well as evaluation of items by a panel of experts (Campón & Carter, 2015; DeVellis, 2012; Lasch et al., 2010; NIH, 2012; Willis, 2005). The process of initial psychometric validation employed confirmatory factor analyses after administering the measure to a large sample to verify constructs and define the underlying structure of the instrument. Reliability was established using coefficient omega (McDonald, 1999; Reise, 2012).
### Table 1

**Methodological Overview of the Development and Preliminary Validation of a Multidimensional Scale of Fairness**

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<tbody>
<tr>
<td><strong>Item Development</strong></td>
<td><strong>Instrument Validation</strong></td>
</tr>
<tr>
<td>▪ Focus group discussions conducted with a diverse sample of 24 adults surrounding their understanding and experiences of fairness (Krueger &amp; Casey, 2000; Morgan, 1997)</td>
<td>▪ Scale composed of 96 items administered to a diverse sample of 460 adults via Qualtrics online survey software for preliminary evaluation of psychometric properties and construct validity</td>
</tr>
<tr>
<td>▪ Data from focus groups analyzed using qualitative content analysis identified two main dimensions and seven subdimensions of fairness (Hsieh &amp; Shannon, 2005; Neuendorf, 2002)</td>
<td>▪ Confirmatory factor analyses used to evaluate construct validity and verify the factor structure of the measure. A bifactor model with one fairness factor and four ecological subfactors was retained</td>
</tr>
<tr>
<td>▪ Based on these seven domains, an initial pool of items aimed to measure individual experiences of fairness created</td>
<td>▪ Individual items examined and removed based on psychometric properties. Three items for each of the four subscales were retained for a final 12-item measure</td>
</tr>
<tr>
<td>▪ Four cognitive interviews were conducted with individual participants to clarify understanding and interpretation of initial 128 items, improve clarity, and identify ambiguous items (Willis, 2005). Feedback used to revise items and create an initial pool for the scale</td>
<td>▪ Internal reliability of the scale assessed using coefficient omega (McDonald, 1999; Reise, 2012)</td>
</tr>
<tr>
<td>▪ Initial pool of 112 items submitted to a panel of four experts in the fields of fairness and test construction for review and analysis of content validity (DeVellis, 2012)</td>
<td></td>
</tr>
</tbody>
</table>
The scale development and validation process employed a two phase sequential mixed-methods design (Creswell & Plano Clark, 2011; Creswell, Plano Clark, Gutmann, & Hanson, 2003). A mixed-method design in scale development has distinct advantages, particularly for a scale that seeks to capture the lived experiences of fairness (Warthe, 2012). Researchers recommend the use of multiple qualitative and quantitative methodologies for scale development because these methodologies allow for triangulation of the findings and incorporate the strengths of each approach to enhance the fidelity of the results (Creswell & Plano Clark, 2011; Creswell et al., 2003; Sisirak, 2011). In an exploratory sequential mixed methods design, collection and analysis of qualitative data occurs in the first phase, with the results informing a subsequent quantitative phase designed to test the findings (Creswell & Plano Clark, 2011). Creswell and Plano Clark (2011) recommended an exploratory sequential design for phenomenon exploration, variable identification, and particularly instrument development.

The specific steps of scale development and validation in this study followed the guidelines for survey development presented by DeVellis (2012). The primary elements include: (a) clear determination of what is to be measured, (b) generation of an item pool, (c) determination of the format for measurement, (d) review of the initial item pool by experts, (e) consideration of the inclusion of validation items, (f) administration of the items to a development sample, (g) evaluation of the items, and (h) optimization of scale length. Additional recommendations from other sources regarding phases of development (Benson & Clark, 1982) and instrument validity (Clark & Watson, 1995) were incorporated as well.
Problem Statement and Research Questions

A review of the existing literature on justice and fairness revealed several deficiencies. These included a lack of operational definitions of fairness, one-dimensional or single-item measures of justice and fairness, instruments with poor psychometric properties, and few scales designed to capture personal experiences of fairness (Colquitt, 2001; Colquitt et al., 2001; Furnham, 1998, 2003; Greenberg, 1990; Hellman et al., 2008; Lind & Tyler, 1988; Lipkus, 1991; Lipkus et al., 1996; O’Connor et al., 1996). In this study, the researcher aimed to contribute to the literature through the development of a multidimensional scale of fairness designed to measure individual perceptions about personal experiences of fair or unfair treatment. Specifically, the research questions were as follows:

1. What are some experiences of fair and unfair treatment reported by a sample of diverse adults in focus groups?
2. What are the important domains of fairness emerging from focus group data?
3. What items adequately capture the various ecological domains of fairness in an individual’s life?
4. What are the psychometric properties, including reliability and validity, of a scale designed to measure personal experiences of fairness in several ecological domains?

Study Design

Phase I Procedure

Phase I of this study included item generation, analysis of content validity, and item revision. This phase utilized a qualitative methodology to develop an initial item
pool and refine items for content validity, clarity, and relevance. This process involved three stages: (a) item generation through focus group discussions, (b) refinement of items through individual cognitive interviews, and (c) analysis of content validity using a panel of experts.

With recognition that most of the current measures of justice and fairness have emerged from a solitary theory (Colquitt et al., 2001; Hellman et al., 2008), few scales, if any, have materialized through grounded approaches based on individuals’ understandings, explanations, and perceptions of fairness. Mikula, Petri, and Tanzer (1990) suggested that for a richer, fuller understanding of individuals’ perceptions of fairness, open-ended qualitative methods are necessary. The use of qualitative methods such as focus group discussions may shift the conversation on fairness from the theoretical to the personal (Mallinckrodt, Miles, & Recabarren, 2016; Whittaker & Worthington, 2016). The goal of the current study was to understand how individuals make sense of fairness in their personal experiences and to identify the domains of fairness in their everyday lives.

**Focus group discussions.** Morgan (1997) argued that focus group discussions represent a useful tool in the understanding of participants’ interpretations of a particular topic. Focus group discussions also help identify important dimensions of a phenomenon and can assist in item construction for scales. The strengths of focus groups include minimal cost, efficiency, access to a variety of perspectives in a short amount of time (Kamberelis & Dimitriadis, 2008; Warthe, 2012), and the potential for the generation of group “synergy” (Morgan, 1997, p.13).
Compared to individual interviews, focus groups explore group characteristics and dynamics, capture collective lived experience, and highlight the social construction of meaning for a particular topic or phenomenon (Kamberelis & Dimitriadis, 2008). In this study, focus group discussions were used to explore participants’ personal and group experiences of fairness, to identify emerging domains of fairness in their lives, and to inform item development. The focus group discussions probed interpretations of fairness in areas of life important to participants following an interview guide (see Appendix A).

In general, recommendations provided by Krueger and Casey (2000) for development of discussion questions and the conduct of focus groups were followed. Six audio taped focus group discussions lasting between 60 and 90 minutes were conducted, each with between two and seven participants. Five of the discussions were conducted on the University of Miami campus, and one took place at a nearby community organization. Field notes, including key themes for item generation and quotations from participants, were taken by the facilitator during each discussion (Tuckett, 2005; Tuckett & Stewart, 2004). At the completion of each focus group discussion, the facilitator and cofacilitator debriefed about the conversation, compared notes, and identified preliminary themes. Each audio tape was then transcribed with Verbal Ink Transcription Services.

**Focus group format.** The aim of this study was to develop a global instrument to assess experiences of fairness in several domains. One of the challenges to development of an instrument aimed for use with a general population is ensuring adequate representation from diverse populations and maintaining homogeneity of the focus group discussions (Krueger & Casey, 2000). Krueger and Casey (2000) recommended allowing for sufficient variation among participants in each focus group to allow for expression of
contrasting opinions. As the researchers explained, the challenge of organizing a focus group lies in striving for a balance between incorporation of enough variation within the group to obtain contrast, yet not so much variation that participants are inhibited. Krueger and Casey (2000) suggested selection of a characteristic, such as age, gender, or occupation, by which to organize focus groups in order to ensure some homogeneity of the group.

Knodel (1993) stated that focus group discussions are defined by characteristics that differentiate groups from one another (break characteristics), as well as characteristics common to all groups (control characteristics; p. 39). The most commonly used background variables are sex/gender, race, age, and socioeconomic status (Morgan, 1997). For example, the World Health Organization (WHOQOL; Skevington, Mac Arthur, & Somerset, 1997) developed an international multidimensional measure of Quality of Life intended for use with a diverse cross-cultural general adult population. The WHOQOL group recruited participants who were heterogeneous in several demographic characteristics, such as education and income level, but partitioned focus groups by age (adults and older adults) and gender (male and female) to achieve some homogeneity (Skevington et al., 1997).

The purpose of the current study was to identify domains of fairness in individuals’ lives in a general population. Similar to investigation of the WHOQOL group, the intent of this study was to develop a global measure that includes multiple domains. Conducting focus group discussions with participants representing every possible background variable was not feasible, nor would that many focus groups contribute substantially more to the research questions.
In this study, the researcher did not intend to compare differences in subgroups, but rather identify domains of fairness universal across all groups. Therefore, break characteristics (Knodel, 1993) were included to organize groups with the sole purpose of achieving adequate comfort for participants to discuss the topic. Purposive sampling was used to achieve a diverse sample regarding age, gender, ethnicity, ability, religion, socioeconomic status, and education level.

It was not expected that focus group participants would “represent” their neighborhood, race, gender, or culture (Krueger & Casey, 2000, p. 72). However, regardless of background, it was expected that domains of fairness would emerge across life experiences. Differences in the content of participants’ fair experiences may exist; however, the domains in which these experiences exist were hypothesized to be universal. The goal of the focus group discussions was to allow for a diversity of opinions while ensuring that participants could contribute to the discussion and were comfortable saying it in front of one another (Morgan, 1997).

Morgan (1997) explained that different genders often interact differently in focus group discussions. Additionally, it is common that older and younger participants may have difficulties communicating because experiences are filtered through different generational perspectives. In this study, similar to the WHOQOL (Skevington et al., 1997) group study, to maintain some homogeneity while balancing diversity in attitudes and experiences, five of the groups were segmented by age (adults and older adults) and gender (male and female; Krueger & Casey, 2000). Age and gender, therefore, represented the break characteristics used in this study (Knodel, 1993). The groups were organized based on these characteristics to create comfort for participants to discuss their
attitudes openly. With this method of organization, the researcher aimed to achieve
diversity of participants’ opinions and parsimony of the number of groups for practical
and theoretical considerations.

Knodel (1993) noted that focus group discussions are designed to be flexible and
that the precise characteristics of the population, as well as the number of groups, can be
decided in a stepwise fashion if necessary. Additionally, if saturation is not achieved
from the first focus group discussions as determined by the researchers, an additional
group can be used to ensure adequate saturation of the data (Krueger & Casey, 2000).
Through recruitment in the current study, it was determined that several interested
participants would have difficulty attending a focus group located on the university
campus. Therefore a sixth, mixed-gender focus group discussion was conducted at a
nearby community organization to reduce logistical difficulties created by hosting the
groups on campus.

**Inclusion criteria.** Three criteria were established for participation in Phase I of
this study. Eligible participants had to be male and female adults over the age of 18 who
resided in the United States at the time of participation. They also had to be able to speak
and understand the English language.

**Protection of human participants.** Permission to conduct the research was
granted by University of Miami’s Institutional Review Board (IRB; see Appendix B for
approval letter). All participants signed a document of informed consent before the focus
group discussions (see Appendix C for informed consent document).

**Recruitment.** Recruitment took place in several locations in Miami, Florida.
Recruitment emails were sent to local community-based organizations and distributed
across their email listservs. Recruitment centers were targeted based on their capacity to recruit participants who represented diverse demographic criteria in accordance with the purposive sampling strategy of this study. For example, to promote diversity regarding ethnicity, community organizations that represented neighborhoods composed predominantly of Blacks, Whites, or Latina/o groups were contacted. Agencies with a history of past collaboration with university-based research were also contacted.

When interested individuals responded, they were asked if they would like to participate in a research study examining fairness in which they would be asked to share their thoughts on the topic of fairness as well as experiences of fair and unfair treatment (See Appendix D for recruitment materials). Potential participants were informed that their participation would take approximately two hours of their time and that they would be reimbursed with a $25 gift card for participating.

**Participants.** A total of six focus group discussions were held between April and June 2015 with the principal investigator of the study and several trained research assistants. The purpose of the discussions was to identify emergent domains of fairness in people’s lives and record language used by participants to inform items for scale development. A convenience sample of 24 community-dwelling adults in six focus groups was used. Focus group participants were diverse in regards to age, ethnicity, educational level, and religious affiliation. Most focus group members were female (62.5%) and the mean age was 42 years (SD = 14.86). Demographic characteristics of the focus group participants are presented in Table 2. Analysis of the focus groups included data derived from transcripts of each group, field notes, and focus group debriefings between facilitators.
Table 2

Demographic Characteristics of Focus Group Participants

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>N=24 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9 (37.5)</td>
</tr>
<tr>
<td>Female</td>
<td>15 (62.5)</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>4 (16.7)</td>
</tr>
<tr>
<td>Black/African American</td>
<td>11 (45.8)</td>
</tr>
<tr>
<td>Hispanic/Latino(a)</td>
<td>5 (20.1)</td>
</tr>
<tr>
<td>Asian</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>High school or equivalent</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Some college</td>
<td>10 (41.7)</td>
</tr>
<tr>
<td>College graduate (4 year)</td>
<td>7 (29.2)</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>5 (20.1)</td>
</tr>
<tr>
<td>Doctoral/professional degree</td>
<td>0</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>11 (45.8)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Married</td>
<td>3 (12.5)</td>
</tr>
<tr>
<td>Divorced</td>
<td>5 (20.1)</td>
</tr>
<tr>
<td>Separated</td>
<td>1 (4.2)</td>
</tr>
<tr>
<td>Widowed</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
</tr>
<tr>
<td>Full time</td>
<td>11 (45.8)</td>
</tr>
<tr>
<td>Part time</td>
<td>7 (29.2)</td>
</tr>
<tr>
<td>Retired</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4 (16.7)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>12 (50)</td>
</tr>
<tr>
<td>Jewish</td>
<td>3 (12.5)</td>
</tr>
<tr>
<td>Muslim</td>
<td>0</td>
</tr>
<tr>
<td>Other affiliation</td>
<td>6 (25)</td>
</tr>
<tr>
<td>Unaffiliated</td>
<td>3 (12.5)</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td></td>
</tr>
<tr>
<td>Straight/heterosexual</td>
<td>23 (95.8)</td>
</tr>
<tr>
<td>Lesbian, gay, or homosexual</td>
<td>0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1 (4.2)</td>
</tr>
<tr>
<td>Disability</td>
<td></td>
</tr>
<tr>
<td>Vision/hearing/speech</td>
<td>0</td>
</tr>
<tr>
<td>Wheelchair/cane/walker</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td>Intellectual disability</td>
<td>0</td>
</tr>
<tr>
<td>Other mental/emotional condition</td>
<td>1 (4.2)</td>
</tr>
<tr>
<td>None</td>
<td>21 (87.5)</td>
</tr>
</tbody>
</table>
**Item construction and refinement.** Construction of items for the fairness measure used in this study followed DeVellis’s (2012) recommendations for generating an item pool, which included guidance on selecting items that reflect the scale’s purpose, number of items, phrasing of items, and the characteristics of “good” and “bad” items (p. 81). Items were informed by the literature review and the comments made by focus group participants and were designed by the researcher to include domains previously underrepresented in the justice and fairness literature. Based on the literature review and emergent themes from the focus group discussions, the item format was selected, and a pool of scale items was created. The second stage of Phase I included revision of the preliminary pool of items based on individual cognitive interviews.

**Cognitive interviews.** This stage of scale development included individual cognitive interviews used to revise the scale and reduce response error by identification of items that were unclear or misunderstood by respondents (Wingo, 2010). Specifically, the researcher conducted cognitive interviews with individual participants to: (a) understand how responders perceived and interpreted the content of the scale, and (b) to clarify understanding and interpretation of items. Rooted in cognitive theory (Jobe & Hermann, 2014; Tourangeau & Rasinski, 1988; Willis, 2005), cognitive interviews represent a highly recommended and popular technique for editing items during instrument development (NIH, 2012; Willis, 2005).

The process followed Willis’s (2005) guide for conducting cognitive interviewing and included the *think aloud* method. In this method, participants were asked to voice their thoughts while responding to each item. The researcher also used *verbal probing*, in which the interviewer asked for other specific information related to individual items,
terminology, and participant responses (Vreeman et al., 2014; Willis, 2005; Willis & Miller, 2011).

A cognitive interview guide was developed based on Willis’s (2005) recommendations and existing cognitive interview protocols found in the literature (Hernandez-Garbanzo, 2011; Sisirak, 2011). The cognitive interview guide is included in Appendix E. Cognitive interviews took place in a private office on campus or at a community organization and lasted approximately 1 hour. Field notes were taken by the interviewer. Upon conclusion of the cognitive interviews, items in the pool were revised or deleted and an item set of 112 items was selected for use with the expert panel was selected.

Participants. The participant composition, recruitment, and consenting processes for the cognitive interviews were comparable to those used in the first stage of Phase I. Purposive sampling was used to include participants diverse with regard to gender, race/ethnicity, education level, income level, and socioeconomic status.

Four cognitive interviews were conducted. Participants included one single Black male, age 60 with a high school education who made less than $20,000 annually; one widowed Latina female, age 56, with a college degree who made less than $10,000 annually; one married White male, age 28, with a graduate degree who earned between $75,000-100,000 annually; and one single Latina female, age 27, with a college degree who earned between $50,000-75,000 annually. Participants were given a $25 gift card each for participating.

Analysis of content validity. The final stage of Phase I included revision of the questionnaire and analysis of content validity. First described by Cronbach (1971),
content validity is assessed by answers to the question: “To what extent do the items on the test (instrument) adequately sample from the intended universe of content?” (Gable & Wolf, 1993, p. 96). Content validity, therefore, pertains to how adequately the set of items addresses the content domain of interest (Benson & Clark, 1982). According to Benson and Clark (1982), “an instrument is considered to be content valid when the items adequately reflect the process and content dimensions of the specified objective of the instrument as determined by expert opinion” (p. 793). Therefore, in accordance with these recommendations and those of DeVellis (2012), this study utilized a panel of experts with backgrounds in the fields of fairness or test construction to assess initial content validity of the instrument (Benson & Clark, 1982; DeVellis, 2012).

Davis (1992) recommended using a minimum of two reviewers who are content experts and at least one person knowledgeable about instrument construction. Individuals were identified through the literature and informal professional networks and recruited based on their self-expressed interest in the topics of fairness and justice, professional experience, and research interests and publications (DeVellis, 2012; O’Connor Thomas, 2012). DeVellis (2012) did not specify a number of experts for inclusion on expert panels. However, previous studies utilizing a similar methodology suggested that at total of 4-5 experts represents an adequate number (Hernandez-Garbanzo, 2011; O’Connor Thomas, 2012; Sisirak, 2011; Willis, 2005; Wingo, 2010).

Recruitment emails were distributed to 12 professionals. Four participants responded and were sent the draft of items for review (see Appendix F for complete expert panel survey). The expert panel was composed of three males and one female. Two members were from the United States and two were from outside the United States.
The panel was asked to: (a) examine each item for clarity, (b) assess the relevance of each item for the proposed domain of fairness, (c) provide any comments or suggestions on the items, and (d) contribute any additional feedback on the measure. Comments or suggestions made by the panel contributed to item refinement, including revision and deletion of existing items and generation of new items as appropriate. Based on their feedback, items were revised or deleted to promote clarity or improve the relevance of the items to experiences of fairness.

Phase II Procedure

Scale validation. Phase II of this study included evaluation of the items and analysis of construct validity. After revision of the instrument based on results of the cognitive interviews and expert feedback, a final item set was administered to a pilot sample for initial validation. The researcher used the quantitative data collected in this phase of the study for evaluation of the psychometric properties of the scale, including reliability and construct validity.

Gable and Wolf (1993) explained that construct validity addresses the following question: “To what extent do certain explanatory concepts (constructs) explain covariation in the responses to the items on the instrument?” (p. 101). Construct validity also refers to the psychometric properties of the test. These properties include internal consistency reliabilities and raw score distributions (Cronbach & Meehl, 1955; Gable & Wolf, 1993).

Inclusion criteria. Four criteria were established for participation in this phase. Eligible participants had to be adults over the age of 18 who resided in the United States
at the time of participation. They had to be able to read English and have had access to a computer with Internet connection to complete the online survey.

**Protection of human participants.** Permission to conduct this phase of the research was granted by University of Miami’s Institutional Review Board (IRB).

**Recruitment.** Recruitment took place with the Qualtrics (2015) online survey software system. Qualtrics allows the researcher to recruit a large and diverse sample. Given that Qualtrics allows for the recruitment of a nationally representative sample through their panel of participants, this option was employed to ensure representation from multiple demographic groups. Therefore, purposive sampling to generate a sample that reflected United States demographics in age, gender, ethnicity, and socioeconomic status was used. Qualtrics online survey software distributed the survey battery to research panel members who have voluntarily enrolled to participate in online surveys. Informed consent was included in the online questionnaire.

**Participants.** Participants in this phase were comprised of a large sample of adults recruited with Qualtrics online survey software. DeVellis (2012) recommended a ratio of 5 to 10 participants per item, up to approximately 300 participants. A sample of 460 participants was used for the validation phase. Participants were diverse in regards to age, ethnicity, education level, and religious affiliation. Complete demographic characteristics of the validation sample are included in Table 3.
### Table 3

**Demographic Characteristics of Validation Sample**

<table>
<thead>
<tr>
<th>Background Characteristics</th>
<th>Mean (SD)</th>
<th>N=460 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>44.37 (16.30)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>230 (50)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>229 (49.8)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1 (.2)</td>
<td></td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>321 (69.8)</td>
<td></td>
</tr>
<tr>
<td>Black/African American</td>
<td>62 (13.5)</td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino(a)</td>
<td>41 (9.1)</td>
<td></td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>27 (5.9)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8 (1.7)</td>
<td></td>
</tr>
<tr>
<td><strong>Born in the U.S.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>433 (94.1)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>27 (5.9)</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school or less</td>
<td>14 (3.0)</td>
<td></td>
</tr>
<tr>
<td>High school/GED</td>
<td>149 (32.4)</td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>156 (33.9)</td>
<td></td>
</tr>
<tr>
<td>4-year college degree</td>
<td>83 (18.0)</td>
<td></td>
</tr>
<tr>
<td>Graduate school degree</td>
<td>52 (11.3)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6 (1.3)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single, never married</td>
<td>134 (29.1)</td>
<td></td>
</tr>
<tr>
<td>Living with partner</td>
<td>41 (8.9)</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>220 (47.8)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>41 (8.9)</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>5 (1.1)</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>19 (4.1)</td>
<td></td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management, professional, &amp; related</td>
<td>81 (17.6)</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>22 (4.8)</td>
<td></td>
</tr>
<tr>
<td>Sales &amp; office</td>
<td>35 (7.6)</td>
<td></td>
</tr>
<tr>
<td>Farming, fishing, &amp; forestry</td>
<td>2 (4)</td>
<td></td>
</tr>
<tr>
<td>Construction, extraction, &amp; maintenance</td>
<td>28 (6.1)</td>
<td></td>
</tr>
<tr>
<td>Production, transportation, material moving</td>
<td>7 (1.5)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>285 (62.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below $15,000</td>
<td>73 (15.9)</td>
<td></td>
</tr>
<tr>
<td>$15,000-24,999</td>
<td>62 (13.5)</td>
<td></td>
</tr>
<tr>
<td>$25,000-34,999</td>
<td>59 (12.8)</td>
<td></td>
</tr>
<tr>
<td>$35,000-49,999</td>
<td>72 (15.7)</td>
<td></td>
</tr>
<tr>
<td>$50,000-74,999</td>
<td>98 (21.3)</td>
<td></td>
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<tr>
<td>$75,000-99,999</td>
<td>52 (11.3)</td>
<td></td>
</tr>
<tr>
<td>Over $100,000</td>
<td>44 (9.6)</td>
<td></td>
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<tr>
<td><strong>Religion</strong></td>
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</table>
Measures. A questionnaire created by the researcher was used to collect basic demographic information such as age, gender, ethnicity, marital status, religion, ability, sexual orientation, level of educational attainment, employment status, and household income (see Appendix G for complete demographics questionnaire). The pool of 96 items informed by the data in Phase I and intended to measure personal experiences of fairness in several domains was also administered (see Appendix H for full list of items). A complete list of data collection procedures for both phases of the study is included in Table 4.

Table 4

Data Collection Procedures

<table>
<thead>
<tr>
<th>Format</th>
<th>Date Period</th>
<th>Instruments</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus group discussions</td>
<td>4/21/15-5/21/15</td>
<td>Focus Group Discussion Guide</td>
<td>24</td>
</tr>
<tr>
<td>Cognitive interviews</td>
<td>6/10/15</td>
<td>Fairness scale (128 items)</td>
<td>4</td>
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<tr>
<td>Expert panel review</td>
<td>9/18/15-10/6/15</td>
<td>Fairness scale (112 items)</td>
<td>4</td>
</tr>
<tr>
<td>Validation sample</td>
<td>12/1/15-1/25/16</td>
<td>Fairness scale (96 items)</td>
<td>460</td>
</tr>
</tbody>
</table>
Analysis

**Phase I: Focus Group Discussions.** Focus group discussions were analyzed using qualitative content analysis (QCA). Qualitative content analysis is a popular technique for analyzing qualitative text data and has a long history of use in the social sciences (Barcus, 1959; Granaheim & Lundman, 2004; Hsieh & Shannon, 2005; Rosengren, 1981; Shreier, 2012). The objective of QCA is to provide knowledge and understanding of a phenomenon under study through attention to meaning, intentions, consequences, and context of data (Downe-Wamboldt, 1992). Qualitative content analysis deals with responses to research questions exploring personal or social meanings (Schreier, 2012). Specifically, QCA is a method for “the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes of patterns” (Hsieh & Shannon, 2005, p. 1278). A central concept of QCA is that many words in a text can be classified into smaller content categories for greater understanding (Neuendorf, 2011; Weber, 1985).

The main strength of qualitative content analysis is its support or extension of existing theory. Often, the goal of QCA is “to validate or extend conceptually a theoretical framework or theory” such as the one described in Figure 1 (Hsieh & Shannon, 2005, p. 1281). In this way, QCA is focused on summarizing the data rather than novel interpretation of the data or creation of theory (Schreier, 2012).

The process for content classification using QCA followed recommendations by Shreier (2012) and Weber (1985). These recommendations included: (a) defining the recording unit, (b) defining the categories, (c) testing coding on a sample text, (d) revising coding rules, (e) coding all the text, and (f) assessing reliability or accuracy.
Through this content classification process, the researcher sought to identify substantive types fairness and ecological levels of fair treatment. Classification categories were predicated on theoretical considerations, such as the hypothesized conceptualization of fairness portrayed in Figure 1 (Weber, 1985). Content classification involved analysis of the focus group transcripts to identify predetermined codes and then reviewing the data for new or emerging categories or subcategories (Hsieh & Shannon, 2005; Schreier, 2012). Because text units (i.e., participant statements) may have contained both a type of fairness and an ecological level, multiple classifications were accepted (Weber, 1985).

The most essential step in QCA is creating a coding frame. A coding frame consists of main categories, or dimensions, and a number of subcategories within each dimension. Creation of a coding frame in qualitative content analysis can be concept-driven, data-driven, or both (Schreier, 2012). With these approaches, the researcher can either draw upon theories and concepts known before examination of the material, i.e., work in a concept-driven way. Alternatively, the researcher may examine the material itself, i.e. work in a data-driven way (Schreier, 2012, p. 60). Both methods may also be used in tandem (Früh, 2007).

In concept-driven coding, categories and codes for analysis are influenced by existing theory or previous research. In data-driven coding, codes are generated through the data. Most QCA involves some combination of both, with the exact combination decided by the researcher according to the research question and needs of the study (Schreier, 2012). In this study, building of the coding frame included both concept-driven and data-driven coding (Neuendorf, 2002; Schreier, 2012). A coding frame, with all
variables fully explained and codes defined, was created for content classification (see Appendix I for full coding frame).

The first step in creating a coding frame is specifying the main categories, or dimensions (Schreier, 2012). Following the literature review and study hypotheses, the researcher determined that the two main categories involved in understanding people’s lived experiences of fairness are type of fairness and ecological level. Next, the subcategories of each main dimension were specified (Früh, 2007; Hosti, 1969; Schreier, 2012). For type of fairness, the subcategories were distributive fairness and procedural fairness. For ecological level, the subcategories were initially defined as interpersonal, occupational, community, and sociopolitical. Within the coding frame, each category and subcategory was defined with the existing literature and data generated from the focus group discussions (Boyatzis, 1998). The next steps were to determine whether the qualitative data provided support for these domains and to identify further categories through data-driven analysis.

The following steps in QCA included: (a) division of the material into units of coding, (b) testing the coding frame through a pilot phase, (c) revising and expanding the coding frame, and (d) coding all the material using the revised version of the coding frame (Schreier, 2012). Here, the units of coding included each individual focus group discussion.

Transcripts of each discussion were uploaded to Atlas.ti (Friese, 2013) qualitative data analysis research software (version 7) for subsequent analysis. In the pilot phase, the first focus group discussion was reviewed and relevant comments in the discussion were classified as instances of categories of the coding frame (Schreier, 2012). When a new
subcategory emerged, the coding frame was expanded to capture this information. Development of the coding frame was thus an iterative process. Each subsequent focus group transcript was coded by the researcher assigning segments of the material to the categories of the coding frame (Schreier, 2012). After each discussion was analyzed, the coding frame was revised and expanded to reflect the data gathered.

Several strategies were used to promote reliability and validity in the content classification, such as the use of an additional coder and repeated coding by the same coder (Weber, 1985). For example, the primary researcher recoded the data 10-14 days after the initial coding was completed. The material was also reviewed by a more senior researcher with expertise in the topic of fairness. The two coders discussed their impressions and adjusted the coding frame to achieve consistency in the coding.

**Phase II: Instrument Validation.** After a pool of items was created, revised, and administered to the pilot sample, statistical analyses were used to evaluate the structure of the instrument and the performance of individual items (McKenna, 2001). Specifically, the researcher’s examination of factor loadings and model specification informed decisions regarding item retention and exclusion. Information about the reliability and factor structure of the items was also obtained (Lehavot, King, & Simoni, 2011).

To evaluate the psychometric properties and assess construct validity of the instrument, the researcher conducted a factor analysis using the quantitative response data from the pilot sample (Thurstone, 1931). Factor analysis is a generic name given to a class of multivariate statistical methods whose primary purpose is to define the underlying structure in a data matrix with the intent of reducing and simplifying the data.
According to Gable and Wolf (1993), “factor analysis is a method of identifying or verifying, within a given set of items, subsets of those items which are clustered together by shared variation to form constructs or factors” (p.105). If meaningful covariation exists between constructs, the clustering of items in the hypothesized subscales on the instrument is supported (Ackerman, 2002). In confirmatory factor analysis (CFA), the factors are compared with the empirically developed domains established during the content validation phase to determine if the hypothesized theoretical model fits the data well.

Confirmatory factor analysis helps determine how many individual items measure one construct and whether the included constructs in the model are appropriate. The functions of confirmatory factor analysis include confirmation of the number of latent variables underlying a set of items, condensation of information if necessary, and identification of items that are performing better or worse (DeVellis, 2012). Confirmatory factor analysis is particularly helpful in using a small amount of material to capture complex concepts in scale development and it has played an important role in scale development in counseling psychology (Carter et al., 2016; Tinsley & Tinsley, 1987).

Confirmatory factor analysis was used by the researcher in this study to test the hypothesized model, verify the underlying factor structure of the instrument and analyze the association between items. Evaluation of the items included examination of correlations, variance, and the underlying structure of the scale. Coefficient omega was used to measure the internal consistency of the scale. Descriptive statistical analyses at the item level were also conducted including frequency distributions, means, standard deviations, and item intercorrelations.
Chapter 4: Phase I Results

The purpose of this study was to develop and establish initial validity of a scale measuring individual experiences of fairness. This study consisted of two phases: scale development and scale validation. This chapter presents the results of the first phase of the study: scale development. Scale development included the generation of items, item revision, and analysis of content validity. The initial pool of items was generated through a review of existing literature on justice and fairness and focus group discussions surrounding experiences of fairness. The process of item revision utilized individual cognitive interviews to refine items for content, clarity, and wording (NIH, 2012; Willis, 2005). Analysis of content validity included evaluation of items by a panel of experts (DeVellis, 2012). The results are presented in the order of these stages.

Item Generation

The initial pool of items was developed from two sources. These included a thorough review of existing literature and qualitative data derived from focus group discussions with adults regarding lived experiences of fairness. The focus group discussions are summarized next.

Focus Group Discussions

Six focus group discussions were held with a diverse sample of 24 community-dwelling adults. Participants were asked open-ended questions about: (a) situations in which they were treated fairly or unfairly, (b) characteristics of fair or unfair treatment, (c) areas of their lives in which fairness occurred, and (d) important people involved in whether they were treated fairly. Focus group discussions were analyzed with qualitative content analysis to identify how people understand, organize, and discuss fairness in their

**Results.** Results supported two main dimensions of fairness and several subtypes within each dimension. Dimensions of fairness included substantive type and ecological level. Overall, results from focus group analysis contributed to the generation of six survey subscales derived from eight subcategories identified in the focus group data. Two substantive types (distributive and procedural) were preserved as *Distributive* and *Procedural* subscales for the instrument. Six subcategories within ecological level (interpersonal, occupational, community, institutional, sociopolitical, and sociocultural) contributed to the formation of four ecological subscales for the instrument (*Interpersonal, Occupational, Community, and Societal*).

**Substantive type.** The substantive types captured the two main aspects of fairness, namely, the outcomes and the processes used to determine those outcomes. Consistent with previous theory and literature, analysis of focus group data supported two categories of substantive type: distributive and procedural fairness. Distributive fairness described the fairness of outcomes, and procedural fairness characterized the fairness of interactions, processes, or procedures used to determine those outcomes.

*Distributive fairness.* Participants used terms consistent with the theory and literature on distributive fairness (Deutsch, 1975; Miller, 1999; Törnbloom & Vermunt, 2007). They used words and phrases such as “outcomes,” “consequences,” “output,” “rewards,” and “the fair distribution of resources” to describe the importance of results in determinations of fairness. It was evident from participants’ responses that the distribution of outcomes represented an important component of fairness. For instance,
one participant described fairness as “trying to equally distribute resources” and another characterized fairness as “doling out the same resources or the same time allotment.”

In summarizing the emphasis participants placed on results, one participant noted “We're talking about fairness being defined by what the outcome is.” Participants identified various forms of outcomes, ranging from tangible goods to access to services. One individual stated, “The way I'd decide fair and unfair would be through material gain.” Others used terms such as “resources,” “basic needs,” and “access” in addition to specific outcomes such as education and job promotions to describe valued outcomes. Interestingly, examples of distributive fairness differed across levels of proximity to the individual. Participants affirmed common notions of distributive justice in the literature as the distribution of goods across society but described distributive fairness in different terms in their closest relationships. Regarding family and friends in particular, participants conceptualized outcomes more in terms of time, attention, and duties and less in terms of tangible goods.

_Procedural fairness._ In addition to identifying outcomes as vital to fairness, participants also named processes as essential to fair treatment. The manner in which procedures are enacted and the nature of interpersonal interactions clearly mattered to group members. One participant described the importance of process as “how that outcome happens.” Participants frequently noted the importance of rules and decision-making procedures as vital for fairness. They used terms such as “rules and regulations,” “decisions,” and “being treated fairly” as descriptors for the procedural side of fairness. One participant stated, “I think when I view fairness, I kind of block it into a sense of rules.”
Characteristics of procedural fairness included “honesty,” “choice,” “transparency,” “openness,” and “consistency.” One individual illustrated these characteristics by stating “Yeah, fairness, I think it's a complicated thing, but the way I look at it, when something is fair where you have a set of rules, a set of rules that are—I'll use the word consistent.” Another added: “When I first think of fairness, I think of consistency, meaning that you treat everybody the same way.”

One important theme included participation. Focus group members frequently identified the capacity to participate in the process as important for fairness. One participant described a situation as fair “because I had the platform to be able to voice my opinion and my concerns, verbally as well as in writing, and there was a process.” Another cited a similar example, stating, “I felt that they treated me fair. I was able to voice my concerns.” Consistency in rules and an ability to participate in the process highlighted the emphasis participants placed on procedural fairness.

The quality of interactions also emerged as an important attribute of fairness. Participants spoke about interactions with other people and emphasized the nature of these interactions for evaluating fairness. One individual said “I think there's a direct correlation with politeness and fairness.” The manner in which people perceive themselves to be treated, regardless of outcomes, clearly mattered in determining fairness. One participant summarized the emphasis on quality of treatment in procedural fairness:

When people feel like they were mistreated or treated poorly, or treated not valued, or just dismissed, people will tend to look at it as an unfair process or unfair deal. But if you treat people with respect, and you explain things, and you're open with your communication, typically people may not like the answer, people may not like that they didn't get the job, or they may not like the money
that you've got, but it would be like – okay, I don't have to like it. I was treated fairly; they were open with me.

Participants explicitly emphasized the process in defining fairness. Consistency in rules, options to participate, and the nature of interpersonal interactions were all highlighted as important characteristics of fair treatment. In discussing characteristics of fairness, participants differentiated processes from outcomes but clearly labeled both as significant to their conceptualization of fairness.

**Ecological level.** The ecological levels describe the location of fair treatment within the strata of an individual’s environment. Fair treatment occurs along an ecological spectrum, ranging from individuals’ closest relationships to the society in which they live. Analysis of focus group data revealed six subcategories of ecological level in which people experienced fairness in their lives. These subcategories included the interpersonal, occupational, community, institutional, sociopolitical, and sociocultural domains. A seventh miscellaneous category, consistent with the QCA coding model, encompassed additional comments in this dimension.

Participants definitively identified the ecological nature of fairness in their lives. One participant stated “So like your boss, your family; I feel like all of those have sets of rules. And then you look even further out, and you get to society, and society has a set of rules again.” Participants described how fairness occurs in various places in their lives, with each place representing a different level of proximity to that individual. One participant summarized the ecological nature of fairness: “I think to some degree, everybody experiences some type of fair or unfair treatment in every area of your life, ranging from a macro level all the way down to the individual level.” Focus group members identified specific places in their lives in which fairness occurs and named
people most important to their experiences of fair treatment. These data further specified the six ecological subcategories listed below.

*Interpersonal.* The interpersonal subcategory incorporated the people and relationships in an individual’s immediate environment. This subcategory involved the closest, most important relationships with other individuals. Typically, the relationships included an individual’s current family unit, significant other, or closest friends. Participants cited these individuals and relationships as fundamental to their experiences of fairness. They used the terms “family,” “relationships,” “marriage,” “friends,” and “peers” in describing the most important people influencing fairness in their lives.

For example, when asked what people were involved in their experiences of fairness, one participant reported: “I do think your family is the first—naturally, that's the first person or type of person you experience the idea of fairness with, whether it's siblings or it's cousins or it's whatever the family dynamic is.” Participants noted that an individual’s closest relationships usually include family and romantic partners. One participant specified: “At home, with your family . . . there could be some unfairness. If you're married, or you're in a relationship.”

Most of participants’ emphasis on interpersonal relationships surrounded family and romantic partners. However, some participants also mentioned their circle of friends, as illustrated by the observation: “and then there's also other peers.” In summarizing why family and close relationships were important to experiencing fairness, one participant said: “It would be more important for me if I wasn't being treated fairly at home because I know that every day, I have to come back to this place.” Focus group participants clearly
recognized the people closest to them as instrumental to their experience of fairness and highlighted these relationships as critical to an overall sense of fairness in their lives.

*Occupational.* The occupational subcategory comprised work- or school-related activities within an individual’s immediate environment. Participants frequently mentioned their primary occupation as an area in which fairness was important to them. For instance, one participant stated, “I guess a good source, for example, would always be work.” Another participant who was still a student added “Academically, I feel like I get treated very, very fair.”

Participants used the terms “work,” “employment,” “supervisors,” and “coworkers” to describe the people and places in the occupational subcategory. Those most noted included both specific people, such as supervisors and coworkers, and the policies and procedures related to their primary occupation. In providing an example, one participant said “I've seen it in the workplace quite a bit . . . either during the hiring process or working for a company, things like salary. You'll see salary disparity or responsibilities. You could see some unfairness in the way that dynamic works.”

Participants placed a value on fairness in the workplace because of its extent in their lives. In summarizing this idea, one member said, “It's more important to me also in the workplace because in the workplace and school, those are the two social institutions where I spend most of my time.” Similar to the interpersonal subcategory, participants emphasized the importance of fairness at work because of the substantial role the occupational setting played in their everyday lives.

*Community.* The community subcategory consisted of people outside the individual’s immediate circle but those with whom the person commonly interacted
directly. For example, one participant declared “I think every person that you deal with on a daily basis sets the standard for what is fair or unfair.” Focus group members commonly mentioned interactions with other people in their daily lives as relevant to their sense of fairness. Another participant added that “anybody you come in contact can create an unfair situation . . . . I think it's just interactions with other people.”

As part of their fairness experiences, participants mentioned specific individuals within their community, such as neighbors and other residents, with whom they interacted with on a regular basis. One participant described her experience with fairness in this category through an example:

Just every day maybe standing in line at a grocery store… I definitely feel like every day at the bank or any sort of interaction I have with people in general, I definitely feel that it's mostly fair if not always fair.

In addition to fellow citizens, the community subcategory consisted of people in specific roles. In classifying these roles, one person mentioned, “It could be anyone on your daily experience. Like community, society, neighbors, people in school, teachers, even doctors.” Participants explicitly identified those with formal roles, such as law enforcement officers and healthcare providers, as important to their sense of fairness in their communities. Several participants described members of law enforcement as key figures in their experiences of fairness in the community. They used terms such as “the police,” “cops,” and “from the law enforcement system” to describe how individuals in these positions affected their own sense of fairness. Other participants mentioned probation officers and airport security personnel.

Several participants, in fact, used encounters with law enforcement officers as examples that highlighted experiences of fair or unfair treatment in their communities.
One participant explicitly stated, “My unfairness is a result of some unfair treatment from law enforcement.” Several participants also mentioned encounters with healthcare providers such as physicians or hospital staff in their communities. One participant highlighted the importance of fairness by appealing for it “in a hospital where you want every patient treated fairly.” In contrast to the concepts of systems, such as law enforcement or healthcare, participants pointed out that an important feature of the community subcategory included direct interaction with another person. The community subcategory thus consisted of direct interactions with other people, whether their roles in the community were formal and informal.

Institutional. The institutional subcategory included specific organizations, institutions, agencies, or local systems outside of individuals’ immediate circles but which directly affected them. Participants in the focus groups described government agencies, community organizations, other formal institutions, and local systems such as schools or the courts as important to their experiences of fairness. They used terms like “city officials,” “the school system,” “elected officials,” “judges,” and “a homeowners association” to depict the people and organizations in the institutional subcategory. One participant described this category through an example: “Speaking of more of like an institutional fairness discussion, one example I could give is I think that how fairly education is distributed to children at a young age really impacts them for the rest of their lives.”

Compared to the community subcategory which focused on individuals, the institutional subcategory described systems and organizations that directly affected individuals on a local level. Relationships with these organizations included direct
interactions, but such interactions did not appear necessary for participants to recognize
the effect of local institutions on their experiences of fairness. Several focus group
members illustrated this through examples from the judicial system. One participant
stated:

The most unfair thing that I've seen is the law system with judges . . . how they
treat juveniles in courts, how they treat people that are Latin, Blacks, people that
have no money to pay an attorney, they don't want to listen to them.

In identifying the judicial system as an important institution, others used terms
such as “the legal world” and the “courts.” Another added: “To me, judges are very
unfair, a lot of them.” Participants articulated how these institutions affected not only
themselves but also others in their community. One participant spoke about how
institutional unfairness affected his entire neighborhood stating:

Every single thing that happens in this neighborhood, that the neighborhood is
lacking is because of the people in power, elected, from the mayor to the
commissioner to the state rep, is [sic] not being fair to a particular neighborhood.

These comments indicate that focus group members were sensitive to the role local
systems played in their individual lives. The institutional subcategory included the first
acknowledgment of abstraction, as participants noted that their experiences of fairness
were often influenced by people and organizations outside their direct contact.

Sociopolitical. In the sociopolitical subcategory, participants described
individuals, institutions, laws, policies, rules, or other social structures that directly
influence individuals’ immediate settings but that exist outside the individual’s
immediate environment. The sociopolitical level included large political bodies, such as
government, and national laws, rules, and policies. Participants typically spoke about
these bodies as existing on a national level. One individual indicated that fairness “starts
with the rights in the country that you live in or how far ahead you can get in the place that you are.”

Within this national context, focus group members noted the role that formal rules play in determining fairness. One participant commented on the importance of rules, declaring, “Unless there is a set of rules behind it coming from a systematic level, then there is no universal fairness, so that's why rules are important because they provide that structure that fairness comes from.” More specifically, participants identified laws as specific types of rules. One person argued, “I think law. I think the common thing is law. We'd all like to see law be fair in that sense. The law definitely should be fair.”

The sociopolitical level encompassed both policies and the people that determine these policies, including “lawmakers,” “the President,” “the rich,” “leaders,” and “whoever is in charge.” One group member described these individuals as people at “the top of the hierarchy.” These people and positions represent the sociopolitical systems that determine rules and policies. In turn, the rules shape the context of fairness for individuals.

One participant summarized the interplay between people, policies, and fairness in the sociopolitical subcategory:

So the person that makes these rules and decides what is fair and unfair is the dominant group, whoever has that power, whether that's social power, whether that's physical power. Whatever type of power it is, whoever has the most of it is the one that has the final say in what's fair and unfair.

This participant and others identified a direct connection between a power hierarchy and the rules that determine fairness. In this way, participants recognized that members of a society are the recipients of fair treatment in the form of rules determined by those in power. The experiences of fairness of society’s members do not require direct interaction
with authorities but are influenced by the cumulative effect of rules determined by those people and institutions at the top of the social hierarchy. Often these mores are enacted through individual and institutions within an individual’s immediate environment. When participants mentioned specific people or institutions in their environments, these were classified under the community and institutional subcategories. When participants discussed the policies, laws, and practices that influenced these individuals and institutions, those comments were organized under the sociopolitical subcategory.

*Sociocultural.* The sociocultural subcategory consisted of the societal and cultural beliefs, norms, traditions, and values that influenced concrete manifestations of fairness in the other subcategories. As participants noted, the sociocultural concepts are often abstract, latent, and difficult to define. When discussing societal beliefs, one participant commented, “It just creates an unfair environment because it's just how society has made us think. It's not about what we control.”

Participants recognized the way societal values directly influence individuals and institutions and related to their experiences of fairness. They particularly noted that cultural values often manifest themselves in the form of identity and labels. In describing how abstract beliefs influence fair treatment, one participant noted, “I think labels in general have an inherent quality as to whether something is fair or unfair and whether the treatment you get is fair depends on a label that you have, and that in itself is unfair.”

Participants emphasized how societal values dictate the role identity plays in fair or unfair treatment. One individual shared:

I would say for myself and those around me, it would become most important to me when the reason that they were treated fairly or unfairly was due to factors that they could not change, meaning gender, sex, race, age, culture, religious
choices. When the reason they were being treated fairly or unfairly was due to those factors, that's when it's most important to me.

Participants acknowledged that fair treatment is often determined by how much an individual’s label is valued in a society. Identity represented one mechanism connecting societal values with individual experiences of fairness.

Focus group members also recognized that these beliefs and norms are inherited, passed down through generations and possess a historical component. One participant commented on this legacy: “I was thinking actually about racial injustice and civil rights, for instance, and institutional unfairness has such lasting impact on generations beyond the onset of unfairness.” The historical component included prior events, experiences, or traditions that influenced current beliefs and practices. Societal beliefs, whether historical or contemporary, significantly affect fairness, and participants cited the importance of societal beliefs and mores in an individual’s experience of fair treatment within society.

**Miscellaneous.** To capture any examples of fairness not included in the other ecological subcategories, a miscellaneous category was created. Shreier (2012) recommended including a miscellaneous category to identify any data not captured by the specified subcategories. A miscellaneous category is important in QCA because it allows for inclusion of information that is relevant to the research question, but not substantial enough to warrant another subcategory. This can be particularly useful for information only mentioned once in the data. These data can still be useful in the understanding and description of a construct. One participant, for instance, mentioned his religious faith as an area in which he believes he experiences fairness:

The only place that you probably have a better chance of fairness is in your religion, or with religion; because at least with religion, you have a relationship
with your god or your gods. And if you have a relationship with your god, you're trusting that that relationship is a fair, honest relationship.

No other participants referred to religion or divinity in their conceptualization of fairness, however, divine fairness may be important to some people’s experience. This participant explicitly referenced his relationship with his god, not a religious organization, members of a congregation of people, or religious leaders. Therefore, his comments were categorized in the miscellaneous category. Relationships with religious organizations or with others in the community in the context of faith-based institutions would be more appropriately classified under the community or institutional subcategories.

Interestingly, several participants mentioned that how they treat themselves influenced their experience of fairness in their lives. One participant stated, “The other part we didn't talk about is the internal piece of fairness. Are you fair to yourself? I've been thinking throughout today about just external fairness. But are you fair to yourself?” Other participants echoed the idea of personal fairness, citing “Being fair with yourself” and asking “Am I being unfair to myself all the time when I look in the mirror?” as components of fair treatment.

Some debate exists in the literature about intrapersonal fairness. Corning (2011) argued that fairness is inherently about relationships with others, and Prilleltensky (2012) stated that people can behave not only unjustly to others but also to themselves. Results from the focus group data suggested that some participants perceived intrapersonal fairness as a factor in their experience of fairness. However, these participants did not designate intrapersonal fairness as an essential component. Therefore, it was not included as a separate ecological subcategory.
In sum, results from the qualitative content analysis of the focus group discussions supported two substantive types of fairness and revealed six ecological level subcategories. The two substantive types of fairness were distributive fairness and procedural fairness. The ecological level included six subcategories: interpersonal, occupational, community, institutional, sociopolitical, and sociocultural. These outcomes affirmed the four hypothesized ecological subcategories and extended them by two subcategories, the institutional and sociocultural subdimensions. Data comprising the miscellaneous subcategory suggested that an intrapersonal level, referring to how fairly people treat themselves, may also be relevant. However, not enough data were uncovered to support this as an independent subcategory.

**Development of Initial Item Pool**

Results from analysis of the focus group discussions were used to generate a large pool of items for the initial draft of the fairness scale. The original research questions were revisited to review the purpose of the instrument during subscale and item generation. The purpose of the instrument was to capture an individual’s lived experience of fair or unfair treatment along several ecological domains. Therefore, subscales were included to assess fairness along this ecological spectrum.

Subscales of the instrument were based on the results derived from the focus group analysis and included two dimensions: substantive type and ecological level. When the researcher determined subscales for the measure, subcategories from focus group analysis were compared to ecological levels included in the governing theories. These were Bronfenbrenner’s (1979) ecological systems model and Prilleltensky’s (2012) ecological model of justice and well-being.
For brevity, clarity, and subscale discrimination, subcategories were mapped on to ecological levels for generation of four subscales for the instrument. The interpersonal and occupational subcategories emerging from the literature and focus group data remained independent for the creation of the *Interpersonal* and *Occupational* subscales. The institutional and community subcategories both included relationships with people and organizations outside the individual’s immediate circle but those with whom the person may interact with directly. Therefore, these subscales were combined to create one *Community* subscale. The Community subscale items included fairness assessments of both individuals and institutions in an individual’s surrounding community.

Similarly, the sociopolitical and sociocultural subcategories both included determinants of fairness located on a broader, societal level. One depicted the rules, systems, or institutions that govern society and the other represented the cultural values that shape those structures. The similarities across these levels suggested their capturing in one subscale. Therefore, the sociopolitical and sociocultural levels were combined to form a *Societal* subscale. This subscale assessed fairness from formal institutions, laws, and policies in addition to the abstract norms, beliefs, and values that underlie these systems.

Lastly, the purpose of the scale was not simply to assign a numerical value on unfair experiences but to capture the phenomenology of fairness or a lack of fairness. Therefore, items were included to capture the *frequency* of fair and unfair experiences and the *perceived impact* that these experiences have on an individual. Theoretically, an individual could have numerous unfair experiences, but not perceive these to be bothersome or upsetting. Items assessing the impact of unfair treatment were separated
into their own subscale. In this seventh subscale, labeled the *Impact* subscale, the researcher sought to assess to what extent experiences of distributive and procedural unfairness distressed the responder.

Seven subscales were initially created for the scale. These subscales included Distributive and Procedural dimensions across the four Interpersonal, Occupational, Community, and Societal ecological levels and one Impact subscale. Each substantive type was conceptualized to take place on each respective ecological level. Fairness on each ecological level, therefore, was comprised of outcomes and the processes used to determine those outcomes. For example, the Occupational subscale contained items that captured outcomes related to their primary occupation (distributive fairness) and items that assessed interactions with people and policies at their workplace (procedural fairness).

Based on data from the focus group discussions, the manifestations of distributive and procedural fairness were different across ecological levels. For instance, procedural fairness within the interpersonal level consisted of interactions with close individuals, such as family members, and procedural fairness on the sociopolitical level included the rules employed to govern society. Distributive items within each ecological level totaled to create the Distributive subscale, and procedural items totaled across all ecological levels to create the Procedural subscale. Distributive and procedural items within each ecological level totaled to form the respective Interpersonal, Occupational, Community, and Societal subscales. These subscales sought to capture the cumulative effects of fair or unfair treatment along the ecological spectrum. A model of the dimensions of the scale is depicted in Figure 2.
Substantive Subscale

Ecological Subscale
- Interpersonal
- Occupational
- Community
- Societal

Impact Subscale

<table>
<thead>
<tr>
<th>Substantive Subscale</th>
<th>Distributive</th>
<th>Procedural</th>
</tr>
</thead>
</table>

Figure 2. Initial subscales of the fairness measure

The items were designed to reflect the scale’s overall purpose and the objectives of the specific subscales (DeVellis, 2012). The items were also designed to be brief, uncomplicated, universal, and comprehensible at a reasonable reading level. Additionally, items were constructed with a view toward generalizability to a large population.

At this point, the format and layout of the questionnaire were determined. All items contained a stem and response options on a 5-point Likert-type scale. Items in the ecological subscales contained a stem asking about frequency of fair and unfair treatment and response options of never, rarely, sometimes, often, and always. Items on the Impact subscale contained a stem that asked how much unfair treatment has affected the responder’s life and response options of not at all, a little, some, quite a bit, and a great deal. Additionally, two items for each ecological level using the Cantril self-anchoring method were included to assess whether subscales could be captured with single items (Cantril, 1965).

Whenever possible, the words and phrasing used by focus group members were retained (Baro et al., 2009; García, 2011). For example, several focus group members described obtaining housing as an area in which fairness was important to them. One
participant remarked, “There should be some type of fairness in being able to obtain housing.” Therefore, one of the items asked how often “you have a fair chance to obtain desirable housing.” Multiple items with similar wording were included across subscales to allow for useful redundancy of the item pool and to eliminate idiosyncrasies of individual items (DeVellis, 2012). A balance of positively worded and negatively worded items was sought in each subscale.

Through this process, 128 initial items across seven subscales were generated. A preliminary readability analysis was conducted via a computer software program. The results indicated that the items were written at approximately the 9th grade level (Flesch-Kincaid Readability Index = 64.6).

**Item Revision and Analysis of Content Validity**

**Cognitive Interviews**

The initial pool of 128 items was piloted with a sample of four individuals for assessment of the wording, clarity, response options, and formatting of the questionnaire. The process of cognitive interviewing included the think aloud and verbal probing methods (Willis, 2005; Willis & Miller, 2011). Participants were asked to voice their thoughts while responding to each item. Other specific information related to individual items, terminology, and participant responses was requested throughout the interview. For example, prompts such as “Can you repeat the question in your own words?” and “What does the term ________ mean to you?” were used to gain clarification on how items were interpreted by responders. Responses and observations were recorded by the interviewer in hand-written notes by the interviewer.
Upon completion of the cognitive interviews, the researcher and assistants reviewed the notes and observations from each interview. Particular attention was paid to problematic items in which participants noted difficulties understanding the questions, misinterpreted terms, or commented on the difficulty of items. Results from the cognitive interviews led to refinements in item wording, ordering, and inclusion.

In addition, participants’ comments about specific vocabulary prompted changes in the terms used (García, 2011). For example, the item “evenly split the duties in the household” became “evenly split the duties in the relationship” because one participant noted that not all responders live with family or significant others. Other items were simplified. The item “split the responsibilities so that they are equal,” for instance, was changed to “split the responsibilities equally.” Other items deemed unclear were removed.

Lastly, significant changes were made to the items intended to measure the impact of unfair treatment. It was determined that the more important factor in assessing experiences of fairness was the frequency of fair and unfair experiences. Therefore, items assessing impact were reduced. Each ecological level then contained a single item assessing the impact of a lack of distributive and procedural fairness in responders’ lives. Division of frequency and impact was modeled closely on other instruments assessing both of these dimensions, such as the Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2001) or classes of racism scales (Carter et al., 2016). Examples of items across the subscales are included in Table 5 (the complete list of items can be found in Appendix F). Results from the cognitive interviews led to the removal of 16 items in total, for a pool of 112 items.
Panel of Experts

As described earlier, four experts in the fields of social justice and scale development were recruited to review the item pool for establishment of validity, particularly content validity, of the scale (DeVellis, 2012). Experts were selected based on their expertise and willingness to participate. The panel was provided information about the purpose of the study, a brief description of the underlying theory informing scale development, and a clear definition of the construct of fairness.

The pool of 112 items was distributed electronically through an online survey portal and each participant was asked to rate each item on clarity and relevance and provide any comments or suggestions (see Appendix F for full survey). The relevance and clarity questions were based on the literature and studies using similar panel surveys (Davis, 1992; Vaisman, 2011). The relevance item consisted of three options: not relevant, somewhat relevant, and highly relevant. The clarity scale was dichotomous, either yes, the item is clear, or no, the item is not clear, with a prompt to provide a suggested revision. At the end of the survey, participants were invited to contribute any additional feedback on the measure.

Ratings and comments made by panel members were used by the researcher to revise or delete items on the scale as appropriate. Inter-rater agreement with multiple raters was calculated using Fleiss’s (1971) formula for average percentage agreement. The overall mean percentage agreement for the expert panel survey was .7546 (75.46%). When the mean agreement for an item was .50 or below or when multiple panel members rated an item less than highly relevant or identified the item as unclear, that item was revised or removed. If suggestions were made, these were considered for item revision.
For clarity, “at your workplace” was added to response options on the occupational fairness subscale.

Table 5

*Examples of Items Across Subscales*

<table>
<thead>
<tr>
<th>Ecological Level</th>
<th>Substantive Type</th>
<th>Item Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal</td>
<td>Distributive</td>
<td>When it comes to relationships with the people closest to you (family, romantic partner, friends), how often do you feel that you evenly split the duties in your household. When it comes to relationships with the people closest to you (family, romantic partner, friends), how often do you feel that you are treated with dignity and respect.</td>
</tr>
<tr>
<td></td>
<td>Procedural</td>
<td>When it comes to relationships with the people closest to you (family, romantic partner, friends), how often do you feel that you are treated with dignity and respect.</td>
</tr>
<tr>
<td>Occupational</td>
<td>Distributive</td>
<td>When it comes to your main occupation, how often do you feel that you are fairly compensated for your work.</td>
</tr>
<tr>
<td></td>
<td>Procedural</td>
<td>When it comes to your main occupation, how often do you feel that you are treated as an inferior person.</td>
</tr>
<tr>
<td>Community</td>
<td>Distributive</td>
<td>When it comes to your local community, how often do you feel that you have opportunities to obtain a good education. When it comes to your local community, how often do you feel that you are treated respectfully by law enforcement.</td>
</tr>
<tr>
<td></td>
<td>Procedural</td>
<td>When it comes to your local community, how often do you feel that you are treated respectfully by law enforcement.</td>
</tr>
<tr>
<td>Societal</td>
<td>Distributive</td>
<td>When it comes to society at large, how often do you feel that you have opportunities to succeed in this country. When it comes to society at large, how often do you feel that you are treated the same as other people.</td>
</tr>
<tr>
<td></td>
<td>Procedural</td>
<td>When it comes to society at large, how often do you feel that you are treated the same as other people.</td>
</tr>
<tr>
<td>Impact</td>
<td>Distributive</td>
<td>Overall, how much does getting less than your fair share at work affect you. Overall, how much does lack of respect in relationships affect you.</td>
</tr>
<tr>
<td></td>
<td>Procedural</td>
<td>Overall, how much does lack of respect in relationships affect you.</td>
</tr>
</tbody>
</table>

Experiences of fairness in the community were further specified: instructions were changed from “when it comes to your local community . . .” to “when it comes to your experiences in your local community. . .” to prompt responders to answer for themselves and not on behalf of their communities. Additionally, based on the panel’s feedback, all reverse items such as “you are not treated with respect,” were deleted or
reworded to reduce the number of negatively stated response options. Lastly, several raters indicated that responders who believe they are consistently treated fairly may not appropriately respond to the items on the Impact subscale. Therefore, as the researcher considered this recommendation, a *not applicable* answer choice was added to the response options for items on the Impact subscale.

**Summary**

The initial item pool of 128 items was generated through literature review and analysis of focus group discussions. Next, the items were revised based on the individual cognitive interviews and analysis of content validity through an expert panel review. Based on the panel’s feedback, the items were revised, and the resulting pool of 96 items for the fairness measure was determined for further validation.
Chapter 5: Phase II Results

The purpose of this study was to develop and establish preliminary validity of a scale measuring personal experiences of fairness. This study consisted of two phases: scale development and scale validation. This chapter presents the results of the second phase of the study: scale validation. Scale validation included administration of the pool of items to a large sample and evaluation of the psychometric properties of the scale. Confirmatory factor analyses were used to evaluate the performance of items and structure of latent variables. Steps for instrument refinement during the scale validation phase followed recommendations made by DeVellis (2012) and Clark and Watson (1995).

Scale Refinement

Three goals were formulated for the validation phase. They were to (a) confirm the number of factors to retain, (b) gather information about the reliability and factor structure of the items, and (c) inform decisions regarding item retention and exclusion. To accomplish these goals factor loadings and model misspecification were examined (DeVellis, 2012; Lehavot, King, and Simoni, 2011).

Item Analysis

Item distribution. Before the researchers conducted more complex structural analyses, the response distributions of the individual items were examined. Examination was conducted to identify and eliminate items that had highly skewed and unbalanced distributions because these items likely convey little information and may fare poorly in structural analyses.
A sample of 460 participants completed the survey. There were no missing data. Skewness, kurtosis, and variability statistics were computed for all items with SPSS version 22. All items had skewness values between -1.5 and 1.0 (SE = 0.114). Kurtosis values ranged between -1.5 and 1.5 (SE = 0.227). The standard deviation values for all items ranged between .9 and 2.7, with only 3 items having standard deviations less than 1.0. At this stage of scale development, Clark and Watson (1995) recommended liberal guidelines for item retention due to the construct-relevant information these items may provide later in the process. Therefore, no items were discarded based on skewness, kurtosis, or standard deviation.

**Confirmatory Factor Analysis**

Confirmatory factor analysis was used to examine the pattern of relationships of items and hypothesized latent variables (DeVellis, 2012). Specifically, this analysis was employed to verify the factor structure of the measure, evaluate concurrent and discriminant validity, and identify poorly performing items. Confirmatory factor analysis using structural equation modeling is an iterative process that involves specifying a model based on theoretical assumptions, evaluating the model identification, and estimating the model by evaluating model fit and interpreting parameter estimates (Kline, 2011). The intent of this process is to condense information and define the meanings of the included factors (DeVellis, 2012). These analyses also aid in identifying item performance to optimize scale length.

Confirmatory factor analyses were conducted with Mplus (version 7.3; Muthén & Muthén, 2012) with Weighted Least Squared Means and Variance Adjusted Estimation (WLSMV). This method is appropriate for analyzing data in which it is assumed that the
observed ordinal variables stem from a set of underlying continuous latent variables (Beauducel & Herzberg, 2009; Muthén, du Toit, & Spisic, 2010). The factor models were evaluated with several fit indices.

The chi-square statistic tends to be affected by large sample sizes and is frequently significant regardless of fit to the data, therefore several alternative fit indices were also used (Bentler & Bonett, 1980; Byrne, 2013; Lehavot et al., 2011). Hu and Bentler (1999) suggested that a good model fit is determined by a Root Mean Square Error of Approximation (RMSEA) less than .06 and comparative fit indices such as the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) greater than .95. Likewise, Schreiber et al. (2006) indicated that an RMSEA with a confidence interval between .06 and .08 suggests good model fit. For categorical outcomes, such as Likert-scale scores, a weighted root mean square residual (WRMR) less than .90 also works well for determining model fit (Yu, 2002). Although there are no concrete rules in determining model fit, Schreiber et al. (2006) summarized the current customary guidelines, stating, “In general, if the vast majority of fit indices indicate a good fit, there is probably a good fit” (p. 327). Therefore, multiple indices of model fit, model parameter estimates, residuals, and item loadings were used to arrive at the optimal model (Lehavot et al., 2011).

**Model specification.** The goal of model specification and respecification was to simplify the model as much as possible for parsimony and practicality of the instrument. After initial identification and specification of the model, model respecification was undertaken to identify misspecified parameters and create refinements to the scale (Kline, 2011; Rice et al., 2015). Guidelines for eliminating items and respecifying the model
followed recommendations made by DeVellis (2012) and Kline (2011). A full factor model was evaluated, followed by three subsequent revisions. Table 6 presents a summary of the fit indices for the factor models.

Table 6
Summary of Confirmatory Factor Analysis Model Fit Indices

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>df</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA (90% CI)</th>
<th>WRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8644.24</td>
<td>&lt;.001</td>
<td>4464</td>
<td>.919</td>
<td>.915</td>
<td>.047 (.046, .049)</td>
<td>1.602</td>
</tr>
<tr>
<td>2</td>
<td>9037.29</td>
<td>&lt;.001</td>
<td>4457</td>
<td>.911</td>
<td>.907</td>
<td>.049 (.048, .051)</td>
<td>1.601</td>
</tr>
<tr>
<td>3</td>
<td>4457.86</td>
<td>&lt;.001</td>
<td>1323</td>
<td>.919</td>
<td>.913</td>
<td>.072 (.069, .074)</td>
<td>1.725</td>
</tr>
<tr>
<td>4a</td>
<td>92.04</td>
<td>&lt;.001</td>
<td>42</td>
<td>.995</td>
<td>.992</td>
<td>.051 (.037, .065)</td>
<td>0.647</td>
</tr>
<tr>
<td>4b</td>
<td>139.98</td>
<td>&lt;.001</td>
<td>42</td>
<td>.99</td>
<td>.985</td>
<td>.071 (.058, .084)</td>
<td>0.806</td>
</tr>
</tbody>
</table>

Notes. Model 1 = full factor model with 2 large dimensions and 5 small dimensions; Model 2 = bifactor model with 1 fairness factor and 5 small dimensions; Model 3 = reduced bifactor model with 1 fairness factor and 4 small factors; Model 4a = bifactor model with 1 fairness factor, 4 small factors, and 12 items; Model 4b = revised bifactor model with 1 fairness factor, 4 small factors, and 12 items.

Model 1. The original model included seven latent variables representing the seven hypothesized subscales of the instrument. The hypothesized full model is displayed in Figure 3. This model estimated the originally specified *a priori* fairness two-factor model (i.e., one factor assessing a substantive type dimension and one factor assessing ecological level and impact). Latent variables of ecological level and impact were assumed orthogonal with substantive type and correlations were fixed to 0. Correlations between ecological level and impact latent variables were allowed to vary. The factor score variances of each factor were fixed to 1 and all item factor loadings were allowed to vary.
Figure 3. Model 1: Two-factor model

The resulting fit indices suggested promising fit and likely improvement with model respecification. Table 7 displays correlations between the two substantive type latent variables and between the ecological level and impact latent variables.

Table 7

Correlations between the initial hypothesized subscales in Model 1

<table>
<thead>
<tr>
<th>Subscale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distributive</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Procedural</td>
<td>.880</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Interpersonal</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Occupational</td>
<td>0</td>
<td>0</td>
<td>.552</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Community</td>
<td>0</td>
<td>0</td>
<td>.664</td>
<td>.604</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Societal</td>
<td>0</td>
<td>0</td>
<td>.633</td>
<td>.569</td>
<td>.858</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Impact</td>
<td>0</td>
<td>0</td>
<td>.122</td>
<td>.138</td>
<td>.167</td>
<td>.219</td>
<td>-</td>
</tr>
</tbody>
</table>
**Model 2.** The high correlation (.880) between the Procedural and Distributive subscales suggested low discrimination between these two variables. To ensure discriminant validity, estimated correlations between the factors should not be excessively high (i.e., ≈ .90; DeVellis, 2012; Kline, 2011). Therefore, the Procedural and Distributive subscales were consolidated into one single *Fairness* factor. This model was estimated with one large fairness dimension (Fairness) and five small dimensions that included the ecological level and impact variables. The correlation between the single large dimension and small dimensions was fixed to 0. This model achieved similar model fit, indicating that use of one Fairness factor was comparable to the model with use of separate Distributive and Procedural fairness subscales.

**Model 3.** The goal of Model 3 was to reduce the scale by identifying items strongly related to the latent variables (DeVellis, 2012). The Impact subscale had low correlation with the Interpersonal (.122), Occupational (.138), Community (.167), and Societal (.219) subscales despite having been theorized to relate to highly to these variables. Therefore, the Impact subscale and all corresponding items were removed. In evaluation of the items on the ecological level subscales, several items were discovered to unexpectedly load negatively on the factors. It was discovered that when cross-referenced with the item list, most negatively worded items also loaded negatively on the variables even when reverse-coded. The intent of wording items both positively and negatively within the same scale was to avoid acquiescence, or agreement bias (Nunnally, 1978). Negatively worded items possess several disadvantages however, and these items are known to cause psychometric problems (Barnette, 2000; Harasym, Price, Brant, Violato, & Lorscheider, 1992; Hughes, 2009). Because of their poor performance, all negatively
worded items were removed. Additionally, only categorical items using the Likert scale were retained, leading to the removal of items 85-96.

A reduced bifactor model that included one Fairness factor and four ecological level subfactors (Interpersonal, Occupational, Community, Societal) was evaluated. A bifactor model includes a general factor that underlies all items on a measure and one or more group factors that underlie subsets of items (Green & Yang, 2015). The bifactor model is specified so that each item loads on only one group factor and the general and group factors are all orthogonal to each other (Reise, Morizot, & Hays, 2007). The subscale correlations were therefore fixed to 0. Model fit indices again suggested a promising fit but with room for improvement. Single item loadings suggested that several items were good indicators of each subfactor and that pruning items may improve model fit. Individual item loadings for Model 3 are included in Table J1 in Appendix J.

Model 4a. The overall goal of scale revision was to achieve the most parsimonious scale including number of factors and number of items. Kline (2011) suggested that three indicators per factor can be considered sufficient. Therefore, a bifactor model was tested with one Fairness factor and four subfactors with three items included as indicators for each subfactor. Items were selected by their subfactor loading and the top items for each subfactor were included. Model fit indices suggested good model fit. However, one item (item 54) produced an undefined residual. Item 54 was therefore replaced with the next highest loading item until a positive residual was achieved.
Model 4b. Finally, a revised bifactor model was tested with one Fairness factor and four subfactors with three items per subfactor. Items with the top factor loadings were included in each model respecification until all factor loadings and variances were positive. Items 11, 17, and 18 were included on the Interpersonal subscale; Items 27, 40, and 41 were included on the Occupational subscale; Items 46, 50, and 53 were included on the Community subscale; and Items 72, 73, and 78 were included on the Societal subscale. The final model is depicted in Figure 4. Model fit indices indicated that good model fit was achieved. All factor loadings and residual variances were positive. The factor loadings and variances are included in Table 8.
Table 8

*Factor Loadings and Percentages of Variance for Model 4b*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor loading</th>
<th>% of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fairness factor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subfactor 1: Interpersonal</td>
</tr>
<tr>
<td>11</td>
<td>.602</td>
<td>.433</td>
</tr>
<tr>
<td>17</td>
<td>.62</td>
<td>.632</td>
</tr>
<tr>
<td>18</td>
<td>.615</td>
<td>.762</td>
</tr>
<tr>
<td>27</td>
<td>.547</td>
<td>.445</td>
</tr>
<tr>
<td>40</td>
<td>.485</td>
<td>.874</td>
</tr>
<tr>
<td>41</td>
<td>.418</td>
<td>.722</td>
</tr>
<tr>
<td>46</td>
<td>.717</td>
<td>.15</td>
</tr>
<tr>
<td>50</td>
<td>.79</td>
<td>.272</td>
</tr>
<tr>
<td>53</td>
<td>.674</td>
<td>.718</td>
</tr>
<tr>
<td>72</td>
<td>.756</td>
<td>.629</td>
</tr>
<tr>
<td>73</td>
<td>.809</td>
<td>.37</td>
</tr>
<tr>
<td>78</td>
<td>.679</td>
<td>.181</td>
</tr>
</tbody>
</table>

**Reliability.** Reliability was calculated with omega (McDonald, 1999; Reise, 2012). Although Cronbach’s alpha (Cronbach, 1951) is the most common reliability index (Dunn, Baguley, & Brunsden, 2014; Helms, Henze, Sass, & Mifsud, 2006), Reise (2012) suggested that the omega coefficient is a better model-based reliability index when item response data fit a bifactor structure. The reliability of a scale with an underlying bifactor model with group factors is referred to as coefficient omega (ω; Green & Yang, 2015; McDonald, 1999; Reise, 2012). The specific index computed to assess the proportion of variance of the scale scores due to the general factor is referred to as coefficient omega hierarchical (ω_H; Green & Yang, 2015; McDonald, 1999; Reise,
Higher values on $\omega_H$ indicate greater confidence in interpreting the scale scores as due to the general factor (Green & Yang, 2015).

An omega index was also computed for each respective subscale ($\omega_S$). Coefficient omega for the subscales assessed the proportion of variance of the subscale scores due to the group factor (Green & Yang, 2015; Reise, 2012). Omega coefficients are interpreted similarly to coefficient alpha. Reliability indices are reported in Table 9. Reliability estimates revealed good internal consistency of the full scale, single fairness dimension, and each respective subscale (Frost et al., 2007; Green & Yang, 2015).

Table 9

<table>
<thead>
<tr>
<th>Scale Dimension</th>
<th>Coefficient Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full scale ($\omega$)</td>
<td>.959</td>
</tr>
<tr>
<td>Fairness dimension ($\omega_H$)</td>
<td>.816</td>
</tr>
<tr>
<td>Interpersonal subscale ($\omega_S$)</td>
<td>.955</td>
</tr>
<tr>
<td>Occupational subscale ($\omega_S$)</td>
<td>.955</td>
</tr>
<tr>
<td>Community subscale ($\omega_S$)</td>
<td>.953</td>
</tr>
<tr>
<td>Societal subscale ($\omega_S$)</td>
<td>.953</td>
</tr>
</tbody>
</table>

Conclusion

The final instrument included 12 total items with three items for each of the Interpersonal, Occupational, Community, and Societal subscales. The three items for each ecological level are summed for the subscale score and all 12 items are summed to create the single Fairness dimension score. Coincidently, three of the four subscales included items from both of the originally hypothesized Distributive and Procedural subscale item pools indicated that both constructs were captured in the final scale. A readability analysis conducted via a computer software program indicated that the final
scale was written at approximately the 8th grade level (Flesch-Kincaid Readability Index = 66). The final version is displayed in Figure 5.

*Figure 5. Final fairness scale*

<table>
<thead>
<tr>
<th>When it comes to relationships with the people closest to you (i.e., family, romantic partner), how often do you feel that</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. you receive the same amount that you put in</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. you are treated with dignity and respect</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. you are listened to</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When it comes to your main occupation, how often do you feel that</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. you are fairly rewarded for your effort at your workplace</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. you are consulted on important matters</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. you participate in decision making</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When it comes to your experiences in your local community, how often do you feel that</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>46. you have opportunities to obtain a good education</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>50. you have the same amount of privileges as everyone else</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>53. you are able to access good healthcare</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When it comes to your experiences in society at large, how often do you feel that</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>72. you receive your fair share in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>73. you receive the same opportunities as others in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>78. your voice counts in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Chapter 6: Discussion

Evaluations of fairness represent one of the most fundamental aspects of social interactions. All human beings seek to make sense of their environments in the context of what is fair (Lerner, 1980; Tyler et al., 1997). Research studies in a variety of disciplines have identified relationships between fair treatment and human health and well-being (Caldwell & Vera, 2010; Cornelius & Wallace, 2010; Krawczyk, 2009; Prilleltensky, 2012; Whitman et al., 2012). However, the lack of a theoretically sound, valid, and practical instrument for assessing individual experiences of fair treatment along multiple ecological dimensions, has limited the ability to study fairness scientifically (Colquitt, 2001; Furnham, 2003; O’Connor et al., 1996).

The primary purpose of the present study was to develop and establish preliminary validity of a scale measuring personal experiences of fairness. The two phases of this study included scale development and scale validation. As hypothesized, results from the first phase supported two main dimensions of fairness: substantive type and ecological level. Data from focus group discussions informed the generation of a large pool of items along seven subdimensions.

Based on cognitive interviews and input from an expert panel, the pool of items was revised for validation analyses in Phase II. Results from Phase II of the study supported a bifactor model of the scale with a single large fairness dimension and four ecological level subfactors. The final instrument consisted of 12 items with three items comprising each of the Interpersonal, Occupational, Community, and Societal subscales. Several of the findings from the current study support previous research on justice and fairness, and other findings contribute novel additions to the literature.
Phase I

Scale development included the generation of items, item revision, and analysis of content validity. The initial pool of 128 items was developed through a thorough review of existing literature and qualitative data derived from focus group discussions with adults regarding their lived experiences of fairness. Specifically, focus group participants were asked questions about characteristics of fair or unfair treatment and areas of their lives in which fairness occurred.

The first aim of this phase of the study was to better understand how people conceptualize fairness and the qualities of fair and unfair treatment. As hypothesized, individuals in the focus group discussions acknowledged the importance of outcomes and processes in determining fairness. Therefore, responses from participants provided evidence for a substantive dimension of fairness comprised of distributive fairness and procedural fairness. Both distributive and procedural fairness are well documented in the literature (Leventhal, 1976; Miller, 1999; Törnblom & Vermunt, 2007). Participants in this study voiced many of the recognized characteristics of these two types of fairness, such as distributive fairness relating to the allocation of resources (Deutsch, 1975; Miller, 1999) and procedural fairness consisting of opportunities for participation and interpersonal treatment with dignity and respect (Blader & Tyler, 2003; Tyler, 2015).

A second aim of Phase I included identification of the locations of fairness in people’s everyday lives. Results supported the conceptualization of fairness along an ecological spectrum. The four hypothesized interpersonal, occupational, community, and sociopolitical levels were supported and extended. An institutional component was added
to the community level and the sociopolitical subtype was combined with an additional sociocultural subtype to form a single societal level.

Participants not only identified interactions with fellow citizens as important to their perceptions of fairness but also distinguished experiences with formal institutions, such as schools, courts, and hospitals in their communities. Therefore, the community level was expanded to include both fellow citizens and community organizations with which individuals directly interact. Likewise, the hypothesized sociopolitical level was expanded to include a sociocultural component, because participants clearly identified cultural norms, beliefs, and values as important to their sense of fairness in society at large. The resulting interpersonal, occupational, community, and societal ecological levels were included as subscales in the instrument.

Research on justice and fairness to date has existed primarily within independent ecological domains. The fairness literature has recognized three levels of analysis: individual, group, and societal; however, few studies have examined these domains collectively (Tyler, 2015). Results from the current study support previous work identifying fairness within interpersonal relationships (Calton & Cattaneo, 2014; Rettig & Dahl, 1993); organizations, schools, and work environments (Colquitt, Greenberg, & Zapata-Phelan, 2005, Peguero & Bondy, 2015); within the community (Murchison, 1929) including the court (Zetterberg, Sjöström, & Markström, 2014) and healthcare systems (Hearld, Alexander, Bodenschatz, Louis, & O'Hora, 2013); and across societies in general (Miller, 1999). Few studies, however, have examined these levels simultaneously. Prilleltensky (2012) conceptualized fairness along a similar ecological continuum. Other researchers (Li, Cropanzano & Molina, 2015) have also recently called
for a broader approach to studying fairness. The consolidation of these domains in an ecological framework of fairness in this study, therefore, is an original contribution to the literature.

Similarly, only a small number of qualitative or mixed-methods studies exist that examine distributive and procedural fairness (Messick, Blum, Boldizar, & Samuelson, 1985; Mikula et al., 1990; Narcisse & Harcourt, 2008; Rodriguez, 2013; Theotónio & Vala, 1999). Scholars have called for more qualitative studies on the concept of fairness (Taylor, 1999). The mixed-methods approach in the present study provides generalizable findings and simultaneously more deeply explores individual experiences of fairness across several domains. Results from the qualitative phase of the study affirmed that experiences of fairness matter to people. Focus group data revealed that evaluations of fairness are part of people’s daily lives in a number of contexts.

Because the final aim of Phase I was to generate a pool of items to capture these domains of fairness, responses from focus group participants were used to inform wording for items in the hypothesized subscales. Items generated for the current instrument reflected the language of participants and concepts included in previous iterations of fairness instruments (Donovan, Drasgow, & Munson, 1998; Lucas et al., 2011; Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005; Williams et al., 1997). A mixed-methods approach to inform the language and content of a large pool of items, such as that used in the current study, offers improvements to previous measurement methods that rely solely on theory-based scales or single-item instruments.
Phase II

The purpose of Phase II was validation of the scale generated. This phase included administration of the pool of items to a large, nationally representative sample and evaluation of the psychometric properties of the scale. Confirmatory factor analyses were used to evaluate the relationships of items and latent variables. The initial full model included seven latent variables representing the seven hypothesized subscales of the instrument. After initial specification and identification of the model, model respecification was undertaken to refine the scale parameters. A subsequent bifactor model was tested with one fairness factor and four subfactors with three items for each subfactor.

Results from the factor analysis of the initial model revealed a high correlation between the Procedural and Distributive subscales, suggesting low discrimination between these two variables. Although individuals clearly recognized two distinct components of fair situations in Phase I of the study, results from Phase II implied that the distinction between these two types in personal evaluations of fairness may not matter. For example, when focus group participants discussed interpersonal interactions, they often appeared more concerned with the nature of the interaction than the outcomes associated with it. The importance of distributive versus procedural components of fairness, therefore, may be a function of the ecological level.

Indeed, previous literature has identified the central role of procedural justice in interpersonal interactions, for instance (Tyler, 2015). Results from several studies show that in social interactions in particular, people focus less on issues of distributive justice than they do on their own interpersonal treatment (Blader, 2007; Tyler, 2015).
distributive and procedural aspects of fairness may not be equally important across ecological levels. Although these two types remain discrete components of situations, their distinction may not be essential in individuals’ perceptions of fair treatment. More research is necessary to further investigate characteristics of situations in which distributive and procedural aspects of fairness are valued to a greater or lesser extent.

Additionally, the moderate correlations found between ecological level subscales suggest an underlying cause for the shared variance of these factors. One explanation is that individuals distinguish between fair treatment across ecological levels, but these domains are highly related within an individual’s environment. For example, an individual experiencing a lack of fairness in relationships may also have a job or live in a community that lack fairness. Alternatively, the correlation between subscales may suggest that individuals bring a “fairness lens” to situations across all ecological levels. This may suggest a latent “fairness trait” that accounts for some part of the variance of an individual’s score on the instrument. Further studies may continue to investigate possible explanations for the correlation between ecological levels.

**Final Instrument**

Results of this study produced an instrument able to measure individual experiences of fairness across four ecological levels. The goodness of fit indices within the confirmatory factor analyses supported a bifactor model in which a general fairness factor represents the large domain of interest, and four ecological level factors represent narrower ecological subdomains (Green & Yang, 2015). Each of the Interpersonal, Occupational, Community, and Societal subscales was composed of three items. All 12 items summed to create a general Fairness score. The final 12-item scale demonstrated
good reliability, with omega coefficients in the .81 to .96 range (Green & Yang, 2015; Reise, 2012). Model fit indices and factor loadings indicated that the subscales measured four distinct but related constructs. The final set of items included in the scale appeared face valid as well, reflecting findings from previous literature on the importance of equity, participation, and respect (Adams, 1965; Deutsch, 1975; Folger, 1977; Jost & Kay, 2014; Tyler, 2015).

Additionally, items included in the final set contain multiple interpretations of fairness and fair treatment. There is collective agreement in the literature that fairness involves some element of equity, equality, need, or interpersonal treatment, or a combination of these traits (Bekoff, 2001; Bies, 2001; Deutsch, 1975; Folger, Sheppard, & Buttram, 1995; Jost & Kay, 2014; Tyler, 2015). Although various individuals, philosophies, cultures, and political ideologies may have different interpretations on which of these principles should be most heralded, all usually include at least one in their fairness creed. The inclusion of these principles in the final set of items suggests the measure may have broad applicability and reflect a plurality of beliefs about fairness beyond those derived from the data in this study.

**Implications for Research**

The concept of fairness in psychological research has been important since World War II (Jost & Kay, 2010). The scholars of the Whitehall studies in Britain in the 1960s (Marmot et al., 1978) first recognized the importance of fair treatment to health. More recently, there has been an increasing emphasis on the role of fairness in personal well-being (McDonald, Wong, & Gingras, 2012; Prilleltensky, 2013; Wong, 1998). It appears evident that fairness is important to individuals and their subjective and objective well-
being. However, more research is needed to understand the relationship between fairness and wellness and the mechanisms underlying this association.

The instrument to measure experiences of fairness across several ecological dimensions developed in the present study can contribute to future research exploring the intricacies between ecological realms of fairness and domains of well-being. Counseling psychology has a rich history of using scale development (Brewster & Moradi, 2010; Dawis, 1987; Elmore, 1965; Schwing, Wong, & Fann, 2013; Swanson, 2012; Wei, Alvarez, Ku, Russell, & Bonett, 2010) to promote issues of justice and fairness (Fouad, Gerstein, & Toporek, 2006; Toporek, Gerstein, Fouad, Roysircar, & Israel, 2010; Vera & Speight, 2003). The current study contributes to this tradition in counseling psychology through the development of an instrument that can be used in well-being research studies employing a social justice framework.

Results from this study may also contribute to the evolving conceptualization of fairness and justice in the literature. Authors of recent articles have sought to clarify the difference between justice and fairness. For example, Goldman and Cropanzano (2015) argued that the terms are distinct, claiming that justice refers to principles and policies and fairness involves personal evaluations of these rules. To these authors, fairness, then, is a more personal evaluative judgment about whether an action or outcome adheres to an individual’s understanding of justice. Likewise, Wilson (2012) argued that justice involves a third party evaluation and fairness references personal judgments emanating from interactions with others. It is likely a consensus is growing that justice describes adherence to rules and principles and fairness relates to more personal evaluations of
individual experiences. Results from the current study support the notion of fairness as individuals’ perceptions of experiences within their environment.

Additionally, some debate exists regarding types of fairness. Although the distributive and procedural types are well established, Bies (2005) questioned whether a third type, an interactional type, may better capture the nature of interpersonal interactions. The current study supports two substantive types of fairness—distributive and procedural—and interpersonal interactions are conceptualized as procedural fairness on an interpersonal level. An added level of specificity in distinction may function well in workplace settings as Bies (2015) contended; however, current results suggest that substantive types may matter less in general evaluations of fairness.

**Implications for Practice**

The purpose of this study was to develop an instrument that can assess personal experiences of fair treatment in order to examine the association between fairness and well-being. Consistent with the scientist-practitioner-advocate model in counseling psychology, the results of this study should also be used to promote social action (Israel, 2006; Kennedy & Arthur, 2014; Mallinckrodt, Miles, & Levy, 2014). Although not intended to be diagnostic, this instrument could identify individuals, communities, or populations who experience a disproportionate lack of fairness. A tool able to recognize instances of injustice is only as useful as the interventions able to rectify such injustices. The researcher’s hope is that, in line with the counseling psychology ethic of using research to raise critical consciousness and promote social action, this measure will not be used to extract information from marginalized people for the sake of research, but
rather to acknowledge the influence of unfairness on the human experience and determine the people and places most in need of reparation (Smith, Rosenzweig, & Schmidt, 2010).

Limitations

This study had several limitations. The qualitative phase of the study consisted of a convenience sample of 24 participants. Therefore, the qualitative findings may not represent the ideas of the general population. The sample also skewed toward unmarried heterosexual individuals, which may have precluded the ideas of other groups. Particular bias may exist because of regional factors—all participants resided in one particular area of one particular country. It is important to consider that the conceptualization of fairness relied on the qualitative data derived from the first phase of this study and is therefore dependent on the ideas of fairness shared by the particular collection of individuals in this study. The concept of fairness is dynamic and continues to be shaped by the people and collective values of a given time period. The conceptualization of fairness in this particular study represents one interpretation based partially upon the ideas of the individuals who participated.

Focus group participants were not expected to represent the ideas of their demographic subgroups. Thus, a variety of thoughts about fairness that may not have been captured. The focus group methodology was also subject to group dynamics, which may have affected responses if participants did not feel comfortable sharing or if one or more participants dominated the conversation.

A relatively small sample of cognitive interview and expert panel participants also limited the revision process. Convergent validity was less systematized due to sample size. Likewise, only one validation sample was included in this study. Participants were
all residents of the United States, and participation required internet and computer access. These conditions may have excluded a subset of the population such as rural or low-income individuals with limited access to technology.

A limitation of the analyses used in Phases I and II was their confirmatory nature. A confirmatory approach was used in both of the qualitative content analysis and the factor analyses. This approach was rooted in previous research and theory to evaluate data in the current study. A possible bias was inherent in this approach and could contribute to Type I error. Additionally, use of only one validation sample in this study affected the model fit in Phase II. Continued validation of the measure is necessary to examine its properties across multiple samples and with diverse populations. Finally, the relatively high reading level for the survey represents a limitation as it may preclude some individuals from completing the survey accurately and effectively. This may be particularly relevant given that populations most likely to have difficulties with responding may also be those most affected by a lack of fairness.

**Future Directions**

Good scale construction is an iterative process involving several periods of item writing, conceptual and psychometric analyses, and revision of the theoretical model (Clark & Watson, 1995). Future analyses should continue to further establish validity and identify any inadequacies in the current instrument. Given the relatively high correlation between the Community and Societal subscales (.858) in the first model, future iterations of the scale might combine these scales and assess subsequent model fit. Results from these analyses could inform subsequent conceptualizations of the ecological nature of fairness. Additionally, depending on the performance of items in subsequent analyses,
items could be rewritten with independent stems to improve their psychometric properties (McDonald, 1999).

This fairness measure should be compared to other scales measuring similar constructs, such as the Experiences of Discrimination Scale (Williams et al., 1997), to further establish construct or criterion-related validity. Eventually, group norms should be established also. With continued validation, the instrument developed in the present study can be used for future research. This multidimensional measure can examine relationships between fairness and a number of outcomes relevant to social science research. In particular, future studies can examine the association between experiences of fairness in interpersonal, occupational, community, and societal contexts and indices of health and well-being.

The associations between these levels and domains of well-being, such as psychological, physical, and economic well-being, may be of particular interest. For example, a recent research study uncovered a possible link between fair treatment and cardiovascular disease in women (Peterson Matthews, Derby, Bromberger, & Thurston, 2016). Future studies may examine this relationship using the current scale to identify if certain ecological domains of fairness contribute more or less to these health outcomes. Other studies might use the fairness measure to investigate between-group differences on experiences of fairness or evaluate cross-cultural comparisons of fairness (Schäfer Haun, & Tomasello, 2015). Use of an instrument that specifies ecological level may reveal more about which ecological levels contribute significantly to these outcomes.
Conclusion

Fairness is an important element of people’s lives, and it affects aspects of individual, community, and population well-being. Counseling psychologists are uniquely equipped to investigate the relationship between experiences of fairness and well-being, especially in relation to the field’s foundation in social justice and wellness.

This study developed an ecological fairness measure and established the initial validity. The measure was found able to assess individual experiences of fairness across interpersonal, occupational, community, and societal levels. This study is important in its incorporation of an ecological framework into research on fairness. Further, the instrument can measure experiences of fairness along these ecological dimensions scientifically. A better understanding of the effects of fairness on human functioning can better position counseling psychologists to advocate for fair treatment, especially for those most disproportionately affected by a lack of fairness in their lives.
References


Proudhon, P. J. (1868). De la justice dans la révolution et dans l’église (Vol. 3). Lacroix, Verboeckhoven et Cie.


Sun, L. *The fairness instinct: The Robin Hood mentality and our biological nature.* Amherst, NY: Prometheus Books.


APPENDIX A

FOCUS GROUP GUIDE

Script for Focus Group

I. Set up

Arrange furniture for focus group
Set up tape recorder and test it
Set up healthy refreshments
Set out pencils, Informed Consent documents, demographic questionnaires, and nametags
Prepare thank you notes, gift cards, and transportation reimbursement

II. Introduction

Greet and chat with people as they come in
Offer refreshments
Welcome the group and review Informed Consent documents
Encourage participants to complete the demographics questionnaire

Thank you for completing the demographics questionnaire. Please turn those in now.

My name is Johnathan Duff and I am a graduate student here at the University of Miami. My assistant today is [insert name], also a graduate student here at UM. As we discussed on the phone and you have read in the Consent form, we are trying to learn more about fairness. Specifically, I would like to better understand how people view and experience fairness in their lives with the intent to create an instrument that can capture this scientifically.

The information that you provide during this focus group will be helpful in designing the scale. I am going to ask you a few questions dealing with fairness and lack of fairness in your life. There are no right or wrong answers. I’m interested in your honest opinion. We are here to learn from you and really want your thoughts, ideas, and experiences regarding fairness.

Please respect each other’s privacy and do not talk to anyone not in the group about things that are discussed or shared. The tape recorder is here to allow us to tape the conversation so we can listen to it later. Everything you say is strictly confidential and your names will not be used in any report. These tapes will transcribed into writing and will then be erased.

Please try to speak one at a time so that we can all hear what is being said and so that we will be able to follow the conversation on the tape.
III. Discussion

Opening question: tell us your first name and how long you have lived in South Florida.

1. What does fairness mean to you?

2. What does unfairness mean to you?

3. Describe a fair situation.

Definition of fairness:

Fairness means taking into account the needs, interests, and rights of everyone involved in a situation. Fairness has to do with both the outcomes of a situation and the way that people are treated. The question in every situation is whether or not there is fairness in both the process – how everyone was treated – and in the results (Corning, 2011).

Based on this definition, and the ideas you just mentioned, I would like to ask you a few questions about where and when you have experienced fairness or a lack of fairness:

4. Firstly, think of a time in which you were treated fairly. What about this situation made it fair?
   - Was there something about the result of the incident that made it fair?
   - Was there something about the process that made it fair?

5. Now think of a time in which you were treated unfairly. What about this situation made it unfair?
   - Was there something about the result of the incident that made it unfair?
   - Was there something about the process that made it unfair?

6. In what areas of your life do you experience fairness or lack of fairness?
   - In what situations do you commonly experience fairness or lack of fairness?
   - Who are the people involved in whether or not you are treated fairly?

7. How does fairness impact you?
   - What are the results, or consequences, of being treated fairly?
8. Are there certain areas of your life in which fairness, or a lack of fairness, impacts you more than others?

   [If participants do not refer to one or more of the four levels depicted in the theoretical model in Figure 1 (interpersonal, occupational, community, sociopolitical), facilitator will probe about fairness in these domains of life]

9. Of all of the areas of your life that we have talked about in which fairness or a lack of fairness can occur, which one is the most important to you?
   - Have we missed anything?

Other probes:
   - Would you explain further?
   - Would you give me an example of what you mean?
   - Would you say more?
   - Tell us more/say more.
   - Is there anything else?

Summary statement

**IV. Moderating Tips**

*Be attentive to speakers*

*Be purposeful about verbal responses to comments*
   - Make short verbal responses such as “OK” and “Uh huh”
   - Avoid responses that imply judgments about the comments such as “correct” or “excellent”

*Remain aware of nonverbal expressions – use value neutral gestures*
   - Use head nodding, lifting eye brows, gesturing with hands, pointing, or leaning forward/away to connote encouragement but not judgment

*Use 5 second pause to allow for thinking before responses to questions*

*Rephrase or reiterate questions if no response after question*

*Use probes as needed to gather additional information*
APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

- Submission #: 20150227    Issue Date: 3/28/2016

March 27, 2015

Isaac Prilleltensky
312 Merrick Building
Coral Gables, FL 33124
305-284-3505
isaacp@miami.edu

Dear Dr. Isaac Prilleltensky:

On 3/26/2015, the IRB reviewed the following submission:

<table>
<thead>
<tr>
<th>Type of Review: Initial Study</th>
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<tr>
<td>Title of Study: The Development and Initial Validation of a Multidimensional Scale of Fairness</td>
</tr>
<tr>
<td>Investigator: Isaac Prilleltensky</td>
</tr>
<tr>
<td>IRB ID: 20150227</td>
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<tr>
<td>Funding: None</td>
</tr>
<tr>
<td>Documents Reviewed:</td>
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<tr>
<td>Focus Group Script.docx</td>
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<tr>
<td>Demographic Questionnaire.docx</td>
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<td>Informed Consent - FGD.docx</td>
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</tr>
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<td>Email Announcement FGD.docx</td>
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</tbody>
</table>

The IRB approved the study from 3/26/2015 to 3/25/2016 inclusive. Before 3/25/2016 or within 45 days of the approval end date, whichever is earlier, you are to submit a completed Continuing Review to request continuing approval or closure. If continuing review approval is not granted before the expiration date of 3/25/2016 approval of this study expires on that date.

Note to PI: This study is approved for Phase 1 only. A modification is required for review and approval prior to initiation of further study activities.
To document consent, use the consent documents that were approved and stamped by the IRB. Go to the Documents tab to download them.

NOTE: Translations of IRB approved study documents, including informed consent documents, into languages other than English must be submitted to HSRO for approval prior to use.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Should you have any questions, please contact: Vivienne Carrasco, Sr. IRB Regulatory Analyst, (phone: 305-243-6713; email: vcarrasco@med.miami.edu)

Sincerely,

[This is a representation of an electronic record that was signed electronically and this page is the manifestation of the electronic signature]

Amanda Coltes-Rojas, MPH, CIP
Director
Regulatory Affairs & Educational Initiatives
The following information describes the research study in which you are being asked to participate. Please read the information carefully. At the end, you will be asked to sign if you agree to participate.

**Purpose**

We are asking you to participate in a research study about fairness. The purpose of this study is to develop an instrument that captures people’s experiences of fairness and fair treatment.

**Procedures**

Participation in this study involves participating in one focus group discussion on fairness. In a group format, you will be asked to discuss your ideas on fairness as well as experiences of fair and unfair treatment in your life. The purpose of the group discussion is to identify important areas of fairness in people’s lives. The results of this discussion will be used to develop a questionnaire about fairness and fair treatment.

If you decide to participate, you will be asked questions related to your understanding of fairness and experiences you have had involving fair and unfair treatment. The discussion will last between 60 and 90 minutes. The focus groups will be recorded using a digital voice recorder. Following the interview, the tape recordings will be transcribed and will then be erased. No identifying information will be included in the written transcriptions. All information obtained will be used solely for the purposes of this study.

**Risks and Discomforts**

There are no serious risks related to participating in this study. However, it is possible that you may find some questions uncomfortable or distressing. Additionally, some people may experience discomfort speaking in front of a group and/or having their responses recorded.

**Expected benefits**

There may be no personal benefit from your participation in the study, however, your participation in this study may provide valuable information to researchers seeking to understand fairness in people’s lives.
Compensation
You will receive a gift card valuing $20 immediately following the focus group discussion as a result of your participation in this study.

Confidentiality
The information you provide during the course of this study will be confidential. Audiotapes will be kept in a secure location in a research office at the University of Miami. Once audiotapes have been transcribed they will be erased. Any written transcriptions of your responses to questions will not include identifiable information. All results of this study will be reported in a manner that will not identify an individual.

Please be advised that although the researchers will take every precaution to maintain confidentiality of the data, the nature of focus groups prevents the researchers from guaranteeing confidentiality. The researchers would like to remind participants to respect the privacy of your fellow participants and not repeat what is said in the focus group to others.

Right to Withdraw
Your participation in this study is voluntary. You are free to refuse to participate in this study or withdraw your consent at any time during the study.

Questions and Contact Information
If you have any questions regarding this particular study please contact Mr. Johnathan Duff at (978) 273-5165 under the supervision of Dr. Isaac Prilleltensky at (305) 284-3505. If you have questions regarding your rights as a research subject please contact the University of Miami Humans Subjects Research Office at (305) 243-3195.

Participant Agreement
I have read the information in this consent form and agree to participate in this study and be audiotaped during the focus group. I have had the chance to ask any questions I have about this study, and they have been answered for me. I am entitled to a copy of this form after it has been read and signed.

____________________________
Printed Name of Participant

____________________________
Signature of Participant

____________________________
Date

____________________________
Printed Name of Person Obtaining Consent

____________________________
Signature of person obtaining consent

____________________________
Date
Hello,

My name is Johnathan Duff and I am a graduate student at the University of Miami. I am conducting a study on people’s ideas about fairness and their experiences with fair or unfair treatment. I am looking for a few individuals in the community who would be willing to participate in my study.

This study will include participating in one focus group discussion and should take about 90 minutes. Participants will be asked about their ideas on fairness and will be invited to share examples of fair treatment they have experienced in their lives. Participants must speak English fluently. Those who participate will be compensated with a $20 gift card for their time and reimbursed for transportation costs.

Results from the focus group discussions will be used to help create an instrument designed to measure an individuals’ beliefs about fairness in their lives. If you or a member of your community or organization are interested in participating, or if you have any questions, please contact me at j.duff@umiami.edu or (978) 273-5165.

Please see attached flyer for more details.

Thank you.

Sincerely,

Johnathan Duff, M.A.
Email Announcement

Volunteers Wanted for a Research Study:

The Development and Initial Validation of a Multidimensional Scale of Fairness

We are looking for volunteers to participate in a research study about fairness. The purpose of this study is to develop an instrument that captures people’s experiences of fairness and fair treatment. Specifically, I would like to better understand how people view and experience fairness in their lives with the intent to create an instrument that can capture this scientifically.

Who can participate?

Any adult member of the community who is willing to share their thoughts, ideas, and experiences about fairness and fair treatment in their life.

Must be 18 years or older and speak English fluently.

What will you do?

This study includes participating in one focus group discussion on fairness. In a group format, you will be asked to discuss your ideas on fairness as well as experiences of fair and unfair treatment in your life. The focus group will be held on the University of Miami’s campus and will take approximately 1-2 hours of your time. Participants will receive reimbursement for transportation as well as a $20 gift card for participating.

Questions and contact information

If you are interested in participating or would like to learn more about this study please contact Johnathan Duff at (978) 273-5165 or j.duff@umiami.edu
APPENDIX E

COGNITIVE INTERVIEW GUIDE

Cognitive Interview Protocol

I. Set up

Arrange furniture for interview
Set up tape recorder and test it
Provide bottle of water for participant
Set out pencils, Informed Consent documents, and demographic questionnaire
Prepare gift cards, receipt record, and transportation reimbursement

II. Introduction

Welcome the participant and review Informed Consent document
Encourage participant to complete the demographics questionnaire

My name is Johnathan Duff and I am a graduate student here at the University of Miami. As we discussed on the phone and you have read in the Consent form, we are trying to learn more about people’s lived experiences of fairness. Specifically, I am creating an instrument to better capture how people view and experience fairness in their lives.

The information that you provide during this interview will be helpful in refining the scale. I am going to ask you a few questions dealing with fairness and lack of fairness in your life. There are no right or wrong answers. I’m interested in your honest opinion. We are here to learn from you and really want your thoughts, ideas, and experiences regarding fairness.

The tape recorder is here to allow us to tape the conversation so we can listen to it later. Everything you say is strictly confidential and your names will not be used in any report. These tapes will be reviewed and then erased.

III. Instructions

In order to test this new questionnaire, I will ask you to complete these questions, just like a regular survey. However, our goal is to get a better idea of how the questions are working. So I’d like you to think aloud as you answer the questions – just tell me everything you are thinking about as you go about answering them.

At times I’ll stop and ask you more questions about the terms of phrases in the questions and how you came up with your answer. I will also take notes.

Please keep in mind that I really want to hear all of your opinions and reactions. Don’t hesitate to speak up whenever something seems unclear, is hard to answer, or doesn’t seem to apply to you. We will do this for about an hour or until the survey is complete.
Do you have any questions before we start?

V. Warm-up
Before we begin the actual survey, I’d like to ask you a ‘warm-up’ question to introduce you to the think aloud process.

Q: Think about the place where you live, how many windows are there in the house or apartment where you live? As you count the windows, tell me what you are seeing and thinking about.

OK, now let’s turn to the questions that we’re testing.

V. Probing Questions

<table>
<thead>
<tr>
<th>Purpose of Probe</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehension/Interpretation</td>
<td>What does the term ______ mean to you?</td>
</tr>
<tr>
<td>Paraphrasing</td>
<td>Can you repeat the question in your own words?</td>
</tr>
<tr>
<td>Specific Probe</td>
<td>Why did you select ______ as your answer?</td>
</tr>
<tr>
<td>General Probes</td>
<td>How did you arrive at that answer?</td>
</tr>
<tr>
<td></td>
<td>Was that hard or easy to answer?</td>
</tr>
<tr>
<td></td>
<td>I noticed you took a little while to answer that question, what were you thinking about?</td>
</tr>
<tr>
<td></td>
<td>You seem a little unsure, if so can you tell me why?</td>
</tr>
<tr>
<td></td>
<td>What caused you to change your answer?</td>
</tr>
</tbody>
</table>

VI. Interview Tips

*Provide nonverbal reinforcement to let the participant know that you are listening, such as nodding your head, saying ‘hmm mmm,’ and ‘okay’ or ‘I see’*

*Encourage the participant to provide specifics about what s/he is thinking*
APPENDIX F
SURVEY FOR EXPERT PANEL

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Expert Panel Review - Introduction

Thank you for participating in my study developing a multidimensional scale of fairness. The purpose of this study is to develop and establish initial validity for an instrument that captures individuals’ perceptions of fairness in their lives in several domains. You have been identified as having advanced knowledge in the area of fairness, justice, and/or scale development. I would like your feedback regarding the content and format of this instrument. Your input will be used to evaluate the content validity of the scale and to reduce or revise items as appropriate.

For the purposes of this study, “fairness” follows Corning’s (2011) definition:

“Fairness means taking into account the needs, interests, and rights of all parties. The question in every situation is whether or not there was a fair dealing and equity both in the process – how everyone was treated – and the distribution of benefits and costs for everyone concerned.” (p.10)

Based on the first phase of this study, we hypothesize that fairness occurs on multiple ecological levels (interpersonal, occupational, community, societal) in two types (distributive and procedural). Distributive fairness refers to the outcomes of a situation and procedural fairness refers to the processes used to determine these outcomes, with both existing on an ecological continuum. The survey items correspond to one type of fairness and one ecological level. The link below is an online survey with a preliminary pool of items developed from a literature review and several focus groups with a diverse sample of adults.

You will be shown the stem of each item. Responses for participants will be on a 5-point Likert scale measuring either frequency (“never”, “rarely”, “sometimes”, “often”, “always”) or degree (“not at all”, “a little”, “some”, “quite a bit”, “a great deal”). Please review the items and rate each item on its (1) relevance and (2) clarity. Please use the comments section to note any observed problems with the wording of an item or its importance to the scale. Any additional comments or suggestions regarding the items or scale in general would be appreciated as well.

Thank you again for reviewing this instrument. If you have any questions please feel free to contact me at jduff@umiami.edu or (781) 278-5165 or my advisor Dr. Isaac Prilleltensky at isaacp@umiami.edu or (305) 284-3505.

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Consent
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

The Development and Initial Validation of a Multidimensional Scale of Fairness

The following information describes the research study in which you are being asked to participate. Please read the information carefully. At the end, you will be asked to accept if you agree to participate.

Purpose

We are asking you to participate in a research study about fairness. The purpose of this study is to develop an instrument that captures people’s experiences of fairness and fair treatment.

Procedures

Participation in this study involves evaluating items to be included in a multidimensional scale on fairness. Based on the first phase of the study, we hypothesize that fairness occurs on multiple ecological levels (interpersonal, occupational, community, society) in two types (distributive and procedural). The purpose of this process is to improve the content validity of the measure. Your input will be used to revise the survey so that it more accurately captures the construct and is easier to use.

In participating, you will be asked to evaluate the relevance and clarity of each item for the scale across these hypothesized dimensions. You will also be invited to submit comments about each item. Participation will last between 20 and 30 minutes. All information obtained will be used solely for the purposes of this study.

Risks and Discomforts

There are no serious risks related to participating in this study.

Expected Benefits

There may be no personal benefit from your participation in the study, however, your participation may provide valuable information to researchers seeking to develop a measure to assess fairness in people’s lives.

Confidentiality

The information you provide during the course of this study will be confidential. Any comments included in dissemination of results will remain anonymous.

Right to Withdraw

Your participation in this study is voluntary. You are free to refuse to participate in this study or withdraw your consent at any time during the study.

Questions and Contact Information

If you have any questions regarding this particular study please contact Mr. Jonathan Duff at (978) 273-5155 or jduff@umiam.edu under the supervision of Dr. Isaac Pinhelander at (365) 284-5105 or isaarc@umiami.edu. If you have questions regarding your rights as a research subject please contact the University of Miami Human Subjects Research Office at (365) 283-3165.

Participant Agreement

☐ I have read the information in this consent form and agree to participate in this study.
Distributive Fairness - Interpersonal Level

When it comes to relationships with the people closest to you (family, romantic partner, friends), how often do you feel that you:

- Evenly split the duties in the relationship

  [ ] not relevant
  [ ] somewhat relevant
  [ ] highly relevant

  Comments:

- Have about the same amount of things as others

  [ ] not relevant
  [ ] somewhat relevant
  [ ] highly relevant

  Comments:

- Get fewer opportunities to do fun things

  [ ] not relevant
  [ ] somewhat relevant
  [ ] highly relevant

  Comments:
have equal opportunities to do fun things

- Not relevant
- Somewhat relevant
- Highly relevant

Comments:

have equal time to do things that you like

- Not relevant
- Somewhat relevant
- Highly relevant

Comments:

split the responsibilities equally

- Not relevant
- Somewhat relevant
- Highly relevant

Comments:
have similar amounts of money to buy things

- not relevant
- somewhat relevant
- highly relevant

Yes, the item is clear.
No, the item is not clear (add suggestion in comments).

Comments:

give more attention to others than you receive

- not relevant
- somewhat relevant
- highly relevant

Yes, the item is clear.
No, the item is not clear (add suggestion in comments).

Comments:

receive the appreciation that you deserve

- not relevant
- somewhat relevant
- highly relevant

Yes, the item is clear.
No, the item is not clear (add suggestion in comments).

Comments:
put in more effort than others

- not relevant
- somewhat relevant
- highly relevant

Comments:

unfairly go out of your way for others

- not relevant
- somewhat relevant
- highly relevant

Comments:

have the same amount of privileges as others

- not relevant
- somewhat relevant
- highly relevant

Comments:
are able to rely on friends and family for important needs

☐ not relevant  ☐ Yes, the item is clear
☐ somewhat relevant  ☐ No, the item is not clear (add suggestion in comments)
☐ highly relevant

Comments:

receive recognition for your efforts

☐ not relevant  ☐ Yes, the item is clear
☐ somewhat relevant  ☐ No, the item is not clear (add suggestion in comments)
☐ highly relevant

Comments:

get the emotional support that you deserve

☐ not relevant  ☐ Yes, the item is clear
☐ somewhat relevant  ☐ No, the item is not clear (add suggestion in comments)
☐ highly relevant

Comments:
When it comes to relationships with the people closest to you (family, romantic partner, friends), how often do you feel that:

you participate equally in decision making
- not relevant
- somewhat relevant
- highly relevant

Comments:

your opinion matters to them
- not relevant
- somewhat relevant
- highly relevant

Comments:

what you have to say is discounted
- not relevant
- somewhat relevant
- highly relevant

Comments:
you are listened to:

☐ not relevant
☐ somewhat relevant
☐ highly relevant

☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:

you are consulted on important matters

☐ not relevant
☐ somewhat relevant
☐ highly relevant

☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:

you are treated with dignity and respect

☐ not relevant
☐ somewhat relevant
☐ highly relevant

☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:
others are dishonest with you

- not relevant
- somewhat relevant
- highly relevant

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

Comments:

you are treated as an inferior person

- not relevant
- somewhat relevant
- highly relevant

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

Comments:

you are not treated with respect

- not relevant
- somewhat relevant
- highly relevant

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

Comments:
you are invisible

- not relevant
- somewhat relevant
- highly relevant

Comments:

---

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Impact of Fairness - Interpersonal Level

Overall, how much does getting less than your fair share in relationships affect you

- not relevant
- somewhat relevant
- highly relevant

Comments:

---

Overall, how much does lack of respect in relationships affect you

- not relevant
- somewhat relevant
- highly relevant

Comments:
Distributive Fairness - Occupational Level

When it comes to your **main occupation**, how often do you feel that:

**you are fairly compensated for your work**

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Yes, this item is clear  No, this item is not clear (add suggestion in comments box)

**Comments:**

---

**your effort goes unrecognized**

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Yes, this item is clear  No, this item is not clear (add suggestion in comments box)

**Comments:**

---

**you are fairly rewarded for the effort you put in**

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Yes, this item is clear  No, this item is not clear (add suggestion in comments box)

**Comments:**
you receive appreciation for the work you do

- not relevant
- somewhat relevant
- highly relevant

Comments:

the effort you put into work is reflected in your compensation

- not relevant
- somewhat relevant
- highly relevant

Comments:

you are unfairly denied an opportunity to move up

- not relevant
- somewhat relevant
- highly relevant

Comments:
your pay is appropriate for the work you do

☐ not relevant ☐ Yes, this item is clear
☐ somewhat relevant ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are unfairly denied a position

☐ not relevant ☐ Yes, this item is clear
☐ somewhat relevant ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are fairly rewarded for your qualifications

☐ not relevant ☐ Yes, this item is clear
☐ somewhat relevant ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
you do not receive accolades you feel you deserve

☐ not relevant
☐ somewhat relevant
☐ highly relevant
☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Procedural Fairness - Occupational Level

When it comes to your main occupation, how often do you feel that you are treated with respect

☐ not relevant
☐ somewhat relevant
☐ highly relevant
☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:

you are provided with accurate information

☐ not relevant
☐ somewhat relevant
☐ highly relevant
☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:
policies or rules prevent you from making gains

- not relevant
- somewhat relevant
- highly relevant

Comments:

coworkers do not treat you kindly

- not relevant
- somewhat relevant
- highly relevant

Comments:

your supervisor considers your viewpoint

- not relevant
- somewhat relevant
- highly relevant

Comments:
others are honest with you

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are treated in a disrespectful manner

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are consulted on important matters

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
you participate in decision making

- not relevant
- somewhat relevant
- highly relevant

Comments:

you are invisible

- not relevant
- somewhat relevant
- highly relevant

Comments:

you are treated as an inferior person

- not relevant
- somewhat relevant
- highly relevant

Comments:

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Impact of Fairness - Occupational Level
Overall, how much does getting less than your fair share at work affect you

☐ not relevant
☐ somewhat relevant
☐ highly relevant
☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:

---

Overall, how much does getting less than your fair share at work affect you

☐ not relevant
☐ somewhat relevant
☐ highly relevant
☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:

---

**Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review**

**Distributive Fairness - Community Level**

When it comes to your local community, how often do you feel that you:

have opportunities to obtain a good education

☐ not relevant
☐ somewhat relevant
☐ highly relevant
☐ Yes, this item is clear
☐ No, this item is not clear (add suggestion in comments box)

Comments:
<table>
<thead>
<tr>
<th>Question</th>
<th>Relevant Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>are stopped by police without reason</td>
<td>not relevant, somewhat relevant, highly relevant</td>
</tr>
<tr>
<td>have access to adequate parks and recreational spaces</td>
<td>not relevant, somewhat relevant, highly relevant</td>
</tr>
<tr>
<td>are denied access to quality medical services</td>
<td>not relevant, somewhat relevant, highly relevant</td>
</tr>
</tbody>
</table>

Comments:
have a fair chance to obtain desirable housing

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

have the same amount of privileges as others

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

are denied educational opportunities

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
have access to safe and affordable transportation

- not relevant
- somewhat relevant
- highly relevant

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

Comments:

are able to access good healthcare

- not relevant
- somewhat relevant
- highly relevant

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

Comments:

receive good educational opportunities

- not relevant
- somewhat relevant
- highly relevant

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

Comments:
have access to safe and affordable transportation

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

are able to access good healthcare

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

receive good educational opportunities

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review
Procedural Fairness - Community Level
When it comes to your local community, how often do you feel that:

you are treated with courtesy

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you have a say in what happens

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are treated respectfully by law enforcement

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
healthcare providers such as doctors and nurses treat you with dignity

- not relevant
- somewhat relevant
- highly relevant

Comments:

other people treat you with courtesy and respect

- not relevant
- somewhat relevant
- highly relevant

Comments:

you are treated as an inferior person

- not relevant
- somewhat relevant
- highly relevant

Comments:
your side is heard in a court of law
- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:

---

you are treated with less respect than others by the police
- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:

---

other community members value you
- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:
you are treated respectfully by those you interact with

- not relevant  [ ]
- somewhat relevant  [ ]
- highly relevant  [ ]

Comments:

local organizations unfairly deny you resources

- not relevant  [ ]
- somewhat relevant  [ ]
- highly relevant  [ ]

Comments:

neighbors are honest with you

- not relevant  [ ]
- somewhat relevant  [ ]
- highly relevant  [ ]

Comments:
you are treated unfairly by healthcare providers

- not relevant
- somewhat relevant
- highly relevant
- Yes, this item is clear
- No, this item is not clear (add suggestion in comments box)

Comments:

---

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Impact of Fairness - Community Level

Overall, how much does getting less than your fair share in your community affect you

- not relevant
- somewhat relevant
- highly relevant
- Yes, this item is clear
- No, this item is not clear (add suggestion in comments box)

Comments:

---

Overall, how much does lack of respect in your community affect you

- not relevant
- somewhat relevant
- highly relevant
- Yes, this item is clear
- No, this item is not clear (add suggestion in comments box)

Comments:
<table>
<thead>
<tr>
<th>Question</th>
<th>Relevant Options</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distributive Fairness - Societal Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>When it comes to society at large, how often do you feel that:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>you have the same opportunities as everyone else</td>
<td>[ ] not relevant</td>
<td>[ ] Yes, this item is clear</td>
</tr>
<tr>
<td></td>
<td>[ ] somewhat relevant</td>
<td>[ ] No, this item is not clear (add suggestion in comments box)</td>
</tr>
<tr>
<td></td>
<td>[ ] highly relevant</td>
<td></td>
</tr>
<tr>
<td><strong>Comments:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>it is difficult for you to obtain your basic needs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[ ] not relevant</td>
<td>[ ] Yes, this item is clear</td>
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<tr>
<td></td>
<td>[ ] somewhat relevant</td>
<td>[ ] No, this item is not clear (add suggestion in comments box)</td>
</tr>
<tr>
<td></td>
<td>[ ] highly relevant</td>
<td></td>
</tr>
<tr>
<td><strong>Comments:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>you have opportunities to succeed in this country</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>[ ] not relevant</td>
<td>[ ] Yes, this item is clear</td>
</tr>
<tr>
<td></td>
<td>[ ] somewhat relevant</td>
<td>[ ] No, this item is not clear (add suggestion in comments box)</td>
</tr>
<tr>
<td></td>
<td>[ ] highly relevant</td>
<td></td>
</tr>
</tbody>
</table>
you receive less than you deserve

☐ not relevant          ☐ Yes, this item is clear
☐ somewhat relevant    ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

---

the government provides you with enough

☐ not relevant          ☐ Yes, this item is clear
☐ somewhat relevant    ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

---

the laws in society treat you fairly

☐ not relevant          ☐ Yes, this item is clear
☐ somewhat relevant    ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
you receive the same opportunities as others

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments: 

the laws and rules in society are stacked against you

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments: 

you get what you put in

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments: 
you get what you put in

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

the distribution of resources is fair to you

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

the odds of being successful are stacked against you

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review
Procedural Fairness - Societal Level
When it comes to society at large, how often do you feel that:

**society values you as a member**
- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant
- [ ] Yes, this item is clear
- [ ] No, this item is not clear (add suggestion in comments box)

Comments:

**your voice counts**
- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant
- [ ] Yes, this item is clear
- [ ] No, this item is not clear (add suggestion in comments box)

Comments:

**the norms in society are fair to you**
- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant
- [ ] Yes, this item is clear
- [ ] No, this item is not clear (add suggestion in comments box)

Comments:
you are treated with less respect than other members of society

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

the government is unfair to you

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are treated the same as other people

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
the laws in society treat you fairly

- Not relevant
- Somewhat relevant
- Highly relevant

Comments:

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

you are a valued member of society

- Not relevant
- Somewhat relevant
- Highly relevant

Comments:

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)

you are treated equally

- Not relevant
- Somewhat relevant
- Highly relevant

Comments:

Yes, this item is clear
No, this item is not clear (add suggestion in comments box)
you are provided accurate information

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

you are treated fairly by the government

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

the rules in society are unfair to you

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:
your culture is valued

- not relevant
- somewhat relevant
- highly relevant

Comments:

---

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Impact of Fairness - Societal Level

Overall, how much does getting less than your fair share in society at large affect you

- not relevant
- somewhat relevant
- highly relevant

Comments:

Overall, how much does lack of respect in society at large affect you

- not relevant
- somewhat relevant
- highly relevant

Comments:
Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Interpersonal Fairness - Two Item

These two questions pertain to fairness in relationships. The top number ten represents the highest level of fairness you can have in relationships in your life. The number zero represents the lowest level of fairness that you can experience in relationships in your life.

When it comes to fairness in relationships in your life, on which number do you stand now?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments: ____________________________________________________________

- [ ] Yes, this item is clear
- [ ] No, this item is not clear (add suggestion in comments box)

When it comes to fairness in relationships over your entire lifetime, where do you stand?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments: ____________________________________________________________

- [ ] Yes, this item is clear
- [ ] No, this item is not clear (add suggestion in comments box)

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Occupational Fairness - Two Item

These two questions pertain to fairness in the workplace. The top number ten represents the highest level of fairness that you can experience at work. The number zero represents the lowest level of fairness that you can experience at work.
When it comes to fairness in the workplace, on which number do you stand now?

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

When it comes to fairness in the workplace over your entire lifetime, where do you stand?

☐ not relevant  ☐ Yes, this item is clear
☐ somewhat relevant  ☐ No, this item is not clear (add suggestion in comments box)
☐ highly relevant

Comments:

---

**Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review**

**Community Fairness - Two Item**

These two questions pertain to fairness in the community where you live. The top number ten represents the highest level of fairness that you can experience in your community. The number zero represents the lowest level of fairness that you can experience in your community.
When it comes to fairness in your community, on which number do you stand now?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:

When it comes to fairness in your community over your entire lifetime, where do you stand?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Societal Fairness - Two Item

This set of questions pertains to fairness in society at large. The top number ten represents highest level of fairness that you can experience in society at large. The number zero represents the lowest level of fairness that you can experience in society.
When it comes to fairness in society at large, on which number do you stand now?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:

When it comes to fairness in society over your entire lifetime, where do you stand?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant

Comments:

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Intrapersonal Fairness - Single Item

This question pertains to fairness to yourself. The top number ten represents highest level of fairness that you can provide yourself. The number zero represents the lowest level of fairness that you can provide yourself.
When it comes to how fairly you treat yourself on which number do you stand now?

- [ ] not relevant
- [ ] somewhat relevant
- [ ] highly relevant
- [ ] Yes, this item is clear
- [ ] No, this item is not clear (add suggestion in comments box)

Comments:

---

Development and Initial Validation of a Multidimensional Fairness Scale - Expert Panel Review

Additional Comments

Please provide general impressions of the survey as a whole, any additional feedback, comments, or recommendations

Conclusion

Thank you for participating in my study!
APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

2 Screening questions

1. Do you live in the United States?
   - Yes (1)
   - No (0)

2. How old are you?
   - Under 18 (1)
   - 18-25 (2)
   - 26-34 (3)
   - 35-54 (4)
   - 55-64 (5)
   - 65 or over (6)

Demographic Questionnaire

1. What is your gender?
   - Female (1)
   - Male (2)
   - Other (3)

2. How old are you?

3. What is your ethnicity?
   - White (1)
   - African American (2)
   - Hispanic/Latino(a) (3)
   - Asian (4)
   - Native American (5)
   - Pacific Islander (6)
   - Other (7)

4. Were you born in the United States?
   - Yes (1)
   - No (0)
5. Please indicate the highest level of education completed.
   - Grammar School (1)
   - High School or equivalent (2)
   - Vocational/Technical School (2 year) (3)
   - Some College (4)
   - College Graduate (4 year) (5)
   - Master’s Degree (MS) (6)
   - Doctoral Degree (PhD) (7)
   - Professional Degree (MD, JD, etc.) (8)
   - Other (9)

6. What is your current marital status?
   - Single (1)
   - Living with partner (2)
   - Married (3)
   - Divorced (4)
   - Separated (5)
   - Widowed (6)

7. Employment status
   - Full Time (1)
   - Part Time (2)
   - Retired (3)
   - Unemployed (4)

8. Occupation
   - Management & Professional (1)
   - Service (2)
   - Sales & Office (3)
   - Farming, Fishing, & Forestry (4)
   - Construction, Extraction, & Maintenance (5)
   - Production, Transportation, & Material Moving (6)

9. Please indicate your current household income in U.S. dollars
   - Rather not say (1)
   - Under $10,000 (2)
   - $10,000 - $19,999 (3)
   - $20,000 - $29,999 (4)
   - $30,000 - $39,999 (5)
   - $40,000 - $49,999 (6)
   - $50,000 - $74,999 (7)
   - $75,000 - $99,999 (8)
10. Housing Tenure
   - Renter (1)
   - Owner (2)

11. What is your religious affiliation?
   - Christian (1)
   - Jewish (2)
   - Muslim (3)
   - Other affiliation (4)
   - Unaffiliated (5)

12. Please indicate your self-identified sexual orientation.
   - Straight/heterosexual (1)
   - Lesbian, gay, or homosexual (2)
   - Bisexual (3)
   - Something else (4)
   - Don’t know (5)

13. Please indicate if any of the following applies to you:
   - Are blind or have significant difficulty seeing (1)
   - Are deaf or have significant difficulty hearing (2)
   - Have difficulty having your speech understood due to a speech condition (3)
   - Use a wheelchair, cane, crutches, or walker (4)
   - Have an intellectual disability, learning disability, developmental disability, or dementia (5)
   - Have some other mental or emotional condition that seriously interferes with everyday activities (6)
   - None (7)
APPENDIX H

ITEMS INCLUDED IN VALIDATION ANALYSES

<table>
<thead>
<tr>
<th>When it comes to relationships with the people closest to you (i.e., family, romantic partner), how often do you feel that</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. you evenly share work such as household chores or errands</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. you receive the appreciation you deserve</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. you give more attention to others than you receive</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. you split household chores equally</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. you unfairly go out of your way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. you are given your fair share</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. you have the same amount of privileges</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. you are given the time you deserve</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. you are able to rely on others for important needs</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. you receive recognition for your efforts</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. you receive the same amount that you put in</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. you receive less than your fair share</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. you participate equally in decision making</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. you are treated as an inferior person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. your opinion matters to them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. what you say is discounted</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. you are treated with dignity and respect</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. you are listened to</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. you are ignored</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. you are consulted on important matters</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. others are dishonest with you</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. you are treated disrespectfully</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Question</td>
<td>Not at all</td>
<td>A little</td>
<td>Some</td>
<td>A great deal</td>
<td>Not applicable</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------</td>
<td>------</td>
<td>--------------</td>
<td>----------------</td>
</tr>
<tr>
<td>23. Overall, how much has getting less than your fair share in relationships affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. Overall, how much has a lack of respect in relationships affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

When it comes to your main occupation, how often do you feel that

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. you are fairly compensated for your work</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. your effort goes unrecognized</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. you are fairly rewarded for your effort at your workplace</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. you receive appreciation for the work you do</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. the effort you put into work is reflected in your pay</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. you are unfairly denied an opportunity to move up at your workplace</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. your pay is appropriate for the work you do</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. you are unfairly denied a position</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. you are fairly rewarded for your qualifications</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. you are overlooked for recognition you deserve</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

When it comes to your main occupation, how often do you feel that

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<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>35. you are treated with respect</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. you are provided with accurate information</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. your supervisor considers your viewpoint</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. others are honest with you</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. you are treated in a disrespectful manner</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. you are consulted on important matters</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. you participate in decision making</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. you are ignored</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. you are treated as an inferior person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>44. Overall, how much has getting less than your fair share at work affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### When it comes to your experiences in your local community, how often do you feel that

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>46. you have opportunities to obtain a good education</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>47. you are stopped by police without reason</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>48. you have difficulty accessing quality medical services</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>49. you have a fair chance to obtain desirable housing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>50. you have the same amount of privileges as everyone else</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>51. you have difficulty accessing a good education</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>52. you have access to safe and affordable transportation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>53. you are able to access good healthcare</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>54. you receive good educational opportunities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### When it comes to your experiences in your local community, how often do you feel that

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>55. you are treated with courtesy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>56. you have a say in what happens</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>57. you are treated respectfully by law enforcement</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>58. healthcare providers such as doctors and nurses treat you with dignity</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>59. other people treat you with courtesy and respect</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>60. you are treated as an inferior person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>61. other community members value you</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>62. you are treated respectfully by those you interact with</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>63. neighbors are honest with you</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>64. you are treated unfairly by healthcare providers</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### When it comes to your experiences in society at large, how often do you feel that

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all</th>
<th>A little</th>
<th>Some</th>
<th>A great deal</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>65. Overall, how much has getting less than your fair share in your community affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>66. Overall, how much has a lack of respect in your community affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Question</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
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</tr>
<tr>
<td>67. you have the same opportunities as everyone else in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>68. it is difficulty for you to obtain your basic needs in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>69. you have opportunities to succeed in this country</td>
<td>0</td>
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</tr>
<tr>
<td>70. you receive less than you deserve</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>71. the government provides you with enough</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>72. you receive your fair share in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>73. you receive the same opportunities as others in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>74. you have enough to get by in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>75. you get what you put in</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>76. the odds of being successful in society are stacked against you</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tbody>
</table>

*When it comes to your experiences in society at large, how often do you feel that*

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>77. society values you as a member</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>78. your voice counts in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>79. you are treated with less respect than other members of society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>80. the laws in society treat you fairly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>81. you are treated the same as other people in society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>82. you are a valued member of society</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>83. you are treated equally</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>84. you are treated fairly by the government</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>85. the rules in society are unfair to you</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all</th>
<th>A little</th>
<th>Some</th>
<th>A great deal</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>86. Overall, how much has getting less than your fair share in society affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>87. Overall, how much has a lack of respect in society affected your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
These two questions pertain to fairness in relationships. The top number ten represents the highest level of fairness you can have in important relationships in your life. The number zero represents the lowest level of fairness that you can experience in relationships in your life. When it comes to fairness in important relationships in your life, **on which number do you stand now?**

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

When it comes to fairness in important relationships **over your entire lifetime, where do you stand?**

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

These two questions pertain to fairness in the workplace. The top number ten represents the highest level of fairness that you can experience at work. The number zero represents the lowest level of fairness that you can experience at work. When it comes to fairness in the workplace, **on which number do you stand now?**

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
When it comes to fairness in the workplace *over your entire lifetime, where do you stand?*

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

These two questions pertains to fairness in the community where you live. The top number ten represents highest level of fairness that you can experience in your community. The number zero represents the lowest level of fairness that you can experience in your community. When it comes to fairness in your community, *on which number do you stand now?*

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

When it comes to fairness in the community *over your entire lifetime, where do you stand?*

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0
This set of questions pertains to fairness in society at large. The top number ten represents highest level of fairness that you can experience in society at large. The number zero represents the lowest level of fairness that you can experience in society. When it comes to fairness in society at large, on which number do you stand now?

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

On which number did you stand over your entire lifetime?

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

This question pertains to fairness to yourself. The top number ten represents highest level of fairness that you can provide yourself. The number zero represents the lowest level of fairness that you can provide yourself. When it comes to how fairly you treat yourself, on which number do you stand now?

- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0
APPENDIX I

QUALITATIVE CONTENT ANALYSIS CODING FRAME

CODING FRAME

Research questions:
(a) How do adults represented in focus groups experience and report fairness and lack of fairness?
(b) What are important domains of fairness emerging from focus group data?

Dimensions and subcategories:

Category Definitions

I. Substantive types

i. Distributive (the what): the outcomes of events or situations

ii. Procedural (the how): the interactions, processes, or procedures used to determine those outcomes
   • Interactional: the quality of interpersonal treatment during enactment of procedures

iii. Miscellaneous: not specified above

II. Ecological level (the where)

Microsystem: the immediate setting containing that person in which that person engages in particular activities in particular roles (e.g., home, school, workplace)

i. Interpersonal: the immediate environment that includes particular activities in particular roles

ii. Occupational: the immediate environment that includes work or school related activities

Exosystem: an extension of the microsystem that includes other social structures, both formal and informal, that influence the immediate settings in which that person is found (e.g., neighborhood, forms of government, media/communication, transportation, informal social networks)

iii. Community: People outside of the person’s immediate circle (microsystem) but whom the person may directly interact with
iv. **Institutional:** Specific organizations, institutions, agencies, or local systems outside of the person’s immediate circle (microsystem) but whom the person may directly interact with.

v. **Sociopolitical:** People, general institutions, laws, policies, rules, or other social structures existing within the exosystem that directly influence the immediate setting the person is found (forms of government, media/communication).

**Macrosystem:** the overarching institutional patterns including culture and subculture, such as the economic, social, educational, legal, and political systems of which the micro- and exo-systems are the concrete manifestations.

vi. **Sociocultural:** Cultural or societal beliefs, norms, and values that influence the concrete manifestations in the micro- and exo-systems

   - **Historical:** Prior events, experiences, or traditions of which the micro- and exo-systems are the concrete manifestations

vii. **Miscellaneous:** not specified above
## APPENDIX J

ITEM LOADINGS FOR MODEL 3

**Table J1**

*Factor Scores for Model 3: Bifactor Model with All Positively Worded Likert-type Items*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor loading</th>
<th>Subfactor</th>
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<td>Fairness factor</td>
<td>Subfactor 1: Interpersonal</td>
</tr>
<tr>
<td>1</td>
<td>.359</td>
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<td>.523</td>
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Subfactor 3: Community

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Subfactor 4: Societal

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Note: Boldface indicates highest factor loadings included in Model 4