Social neuroscience is characterized by the use of physiological principles and events to inform theory and generate research on social psychological phenomena (Cacioppo & Berntson, 1992). My program of research is guided by this perspective and starts with the assumption that social processes that are conscious or verbally reportable harbor information on just one band of influences relevant to the governance of social behavior and well-being. Therefore, an examination of physiological processes may shed light onto social processes that complement traditional social psychological methods and thus foster a more integrative approach to the study of social behavior.

My main research interests have been guided by a social neuroscience perspective to examine the association between social relationships and health. Importantly, both the quantity and quality of one’s social relationships have been reliably related to lower rates of morbidity and mortality (Holt-Lunstad, Smith, & Layton, 2010; House, Landis, & Umberson, 1988). However, surprisingly little is known about the specific physiological and psychological mechanisms that are responsible for the long-term health effects of social relationships (Cohen, 2004; Uchino, 2009). Over the past 22 years, I have been modeling the autonomic, neuroendocrine, and immune systems as potential physiological pathways by which social relationships impact health (Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Uchino, Ong, Queen, & Kent de Grey, 2016).

Our early work focused on the importance of supportive ties on health-relevant cardiovascular function. We found that social support was related to lower cardiovascular reactivity and and less of an age-related difference in resting blood pressure (Uchino & Garvey, 1997; Uchino, Holt-Lunstad, Uno, Betancourt, & Garvey, 1999). We have since developed a more comprehensive framework that incorporates both positive (i.e., social support) and negative (i.e., social stress) aspects of relationships as separable factors (Holt-Lunstad & Uchino, 2016; Uchino, Holt-Lunstad, Uno, & Flinders, 2001). As shown in Figure 1, this framework separates relationships that are high on positivity only (supportive, such as a confidant) and high on negativity only (aversive, such as a unreasonable supervisor, unpleasant in-law). A unique aspect of our model is the specification of ambivalent ties that are relatively high in both positivity and negativity as past research on social support has ignored the negative aspects that may co-occur with the positive aspects of relationships (Campo et al., 2009).

We have tested this broad framework with funding from the National Institutes of Health using both correlational and experimental methods. Of particular interest at first was testing competing perspectives on the association between ambivalent ties and health-relevant physiological outcomes. On the one hand, such ambivalent ties may be associated with negative outcomes because they are a significant source of interpersonal stress (Rook, 1984). On the other hand, it is possible that ambivalent
ties may be associated with relatively beneficial effects on health-related outcomes because individuals might still benefit from positive aspects of these relationships. Our studies strongly suggest that individuals do not appear to benefit from the positivity in ambivalent relationships as we have found such ties to predict greater depression (Uchino et al., 2001) higher cardiovascular reactivity during stress (Carlisle et al., 2012; Reblin, Uchino, & Smith, 2010; Uchino, Kent de Grey, & Cronan, 2016; Uno, Uchino, & Smith, 2002), higher ambulatory blood pressure during everyday interactions (Birmingham, Uchino, Smith, Light, & Butner, 2015; Holt-Lunstad, Uchino, Smith, Olson-Cerny, & Nealey-Moore, 2003), and greater inflammation and cellular aging (Uchino et al., 2012, 2013).

In our current studies, we are attempting to address two important issues. First, what are the antecedent processes that give rise and maintain relationship ambivalence? In collaboration with Dr. Julianne Holt-Lunstad (BYU), I am working on a general theoretical model elucidating these processes for the next wave of studies on ambivalence and health (Holt-Lunstad & Uchino, 2016). Second, how might researchers reduce relationship ambivalence to benefit health? We have preliminary pilot data suggesting that loving kindness meditation can increase social support and decrease social negativity so might be a useful intervention tool (Uchino, Bowen, et al., 2016). I have applied for several grants from NIH to pursue these theoretical and applied questions.

A cross-cutting interest in my program of research has been on modeling integrative stress-induced biological mechanisms (Uchino, 2012; Uchino, Smith, Holt-Lunstad, Campo, & Reblin, 2007). This work has informed my research highlighted above on relationships and health, as well as related work on age-related differences in physiological reactivity to stress (Uchino, Berg, Smith, Pearce, & Skinner, 2006; Uchino, Holt-Lunstad, Bloor, & Campo, 2005; Uchino, Uno, Holt-Lunstad, & Flinders, 1999). In this later work, we have again examined competing perspectives on such associations. The emotional regulation literature suggests that older adults might be less physiologically reactive due to better self-regulatory skills gained via experience, whereas the cardiovascular reactivity literature suggests that older individuals are more reactive consistent with the greater cardiovascular disease risk seen with advancing age. Our studies support the reactivity literature as we have found age to predict greater stress-induced cardiovascular reactivity in cross-sectional (Uchino, Kiecolt-Glaser, & Cacioppo, 1992; Uchino, Uno, et al., 1999), prospective (Uchino et al., 2005), and daily life ambulatory (Uchino et al., 2006) studies. In addition, our meta-analysis of this literature suggest that older adults are characterized by greater blood pressure reactivity during stress (Uchino, Birmingham, & Berg, 2010).

In my future work, there are several primary directions I would like to pursue. First, I have applied for funding from NIH to test important factors that give rise and maintain perceptions of relationship quality (see Figure 1). For instance, what are the developmental processes and situational factors (e.g., warmth and / or hostility in early family environments) that contribute to current relationship perceptions? This work is being done in collaboration with Drs. Timothy Smith, Brian Baucom, and Samantha Joel (University of Utah) and Drs. Joseph Allen (University of Virginia). Given the evidence for the model to date, I am also interested in examining how one might decrease relationship ambivalence and increase support to facilitate positive health outcomes. I plan to submit future NIH grants to conduct a proof of concept intervention to increase relationship quality and decrease cardiovascular disease risk. In general, my future work will increasing focus on applications of our model in order to better inform theory and improve both relationship and physical health outcomes.
References


