Advanced Developmental Psychology

Longitudinal research methods (LRM) allow the researcher to assess change over time (Gillibrand et al, 2011), involving repeated observations (Ployhart and Vandenberg, 2010). The purpose of this design is to specifically examine the individual changes and variations directly (Hofer and Piccinin, 2012). For example, they are used in developmental research to study developmental trends across the lifespan (Carlson et al, 2012). They have been described as “the lifeblood of developmental psychology” (McCall, 1977, p. 341). This essay will address the key aspects of longitudinal designs, weigh up the strengths and weaknesses of longitudinal research and compare the method with other key psychological research methods.

Typical LRM reassess participants at regular intervals, such as every few weeks but many assess participants every few years (Gillibrand et al, 2011). There is no consensus about how many time periods are required in longitudinal research, some researchers suggest that two time periods are adequate (Menard, 2002). Nevertheless, Chan (1998) indicated that these studies would not allow enough consideration of the relationship between variables, suggesting effective longitudinal studies would involve more time periods. To continue, large longitudinal studies will be examined in some depth.

Oostenbroek et al (2016) carried out the largest longitudinal study of neonatal imitation. Despite failing to uncover any evidence of imitation in humans, which contradicted their hypothesis, their results challenged the existence of the phenomenon (Oostenbroek et al, 2016). Another clear example of a longitudinal design used in developmental research is a study by Rudasill et al, which studied children’s temperament. Despite a period of seven years between assessment points of problematic behavior, there was a robust positive association between the variables. This supported their older study using the same measure, which found that difficult temperament was related to teacher-child relationship conflict (Rudasill et al, 2013).

These designs have methodological advantages and disadvantages. Firstly, LRM allow us to explore children’s cognitive development (Grammer et al, 2013), as they provide a unique perspective on children’s changing abilities and enable researchers to detect developmental changes in the characteristics of the target population (Levine and Munsch, 2017). However, longitudinal research is focused on testing on at least two time points. Depending on the time points, participants could fail to return for the following data collection points. This may not be a huge problem for research that collects data every few days, however those with larger time points, must consider attrition levels (Strich, 2017). For example, families may move away, or may not be present due to illness (Gillibrand et al, 2011). The issue here is that it can lead to further limitations, such as sample bias, which can creep into the study as more people fall out of the sample. For example, if you are studying school children, and the most challenging children drop out, you are left with all the good students, which may not be applicable to your developmental research (Levine and Munsch, 2017). This limitation suggests that cross-sectional studies, for example, could be advantageous. Such limitations can be overcome, however, as dealing with them starts with the preparation and researchers can implement strategies to prevent it (Bornstein, 2015).

In comparison, despite both being observational, longitudinal studies are advantageous in

establishing time ordering of events. By demonstrating that changes in one factor are accompanied by changes of another, they may demonstrate causal effects (Farrington, 1991). However, they can be difficult to use (Levine and Munsch, 2017). But, they enable us to find information that we may fail to obtain from other methods. They answer questions about the sources of variability in observed outcomes (Lim et al, 2017), whilst collecting essential prognostic information about within-individual differences and allows these effects to be distinguished from between individual differences (Lim et al, 2017). They are so significant that researchers have proposed that cross-sectional studies should be followed up by LRM to validate the developmental profiles (Van Herwegen et al, 2014). They are superior as they use all available data, thereby providing a more holistic view of patients' outcomes (Lim et al, 2017). This suggests that if researchers choose to employ a different research method, they would still need to do longitudinal methods.

In summary, LRM are a leading choice for developmental researchers as they make a significant contribution to our understanding of individual development (Grammer et al, 2013). Despite this, there will always be some missing data in longitudinal, many researchers claim imaging such designs without them is difficult (Collins, 2006), undermining the validity of the argument, and reducing statistical power and validity (Shadish and Cook, 2009).

The Still Face Paradigm (SFP) was developed to investigate whether infants are active contributors to social interactions (Li et al, 2019). The procedure reveals what happens when a baby's expressions about normal social interactions are violated (Murray and Trevarthen, 1985). It is a well-known method for assessing socio-emotional regulation in healthy and at risk infants, which has contributed to improve our knowledge of early socio-emotional regulation development (Mesman et al, 2009). Tronick et al (1978) created this to test the hypothesis that infants are reactive in social interactions and to determine how they respond to the infringement of social contingencies in the relationship with their main caregiver. This essay explores the still face paradigm and its relevance to the development of socio-emotional, regulatory and coping strategies, using classic and up-to-date studies.

The SFP involves a caregiver and child engaging in a two-minute face-to-face interaction. During this interaction, the caregiver is instructed to avoid all communication directed to the infant while maintaining a still face. Following this, the caregiver and infant resume normal face to face interaction (Giusti et al, 2018). The third stage is the reunion episode, where the caregiver will resume normal face-to-face interaction (Beerghly & Tronick, 2008).

Tronick et al (1978) indicated that this violates the accepted laws of face-to-face contact because the adult partner conveys contradictory information to the infant. Tronick et al (1978) claimed that the mother is "communicating Hello and Goodbye simultaneously" (p. 11), which contributes to uncertainty in the infant. The expectations of the child about parental behavior are breached. Tronick et al (1978) suggested that this persistent unresponsiveness caused infants to gradually cease attempts of interaction.

This paradigm demonstrated its ability to be a highly effective technique to evaluate young infants' socio-emotional, regulatory, and coping abilities (Beerghly & Tronick, 2008). The SFP can demonstrate how sensitive children are to the emotional or non-emotional reactions of caregivers. For example, Provenzi et al (2016) found that both infant and maternal behavior during normal interactions are important predictors of infant's ability to deal with socio-emotional stress at 6 months.

It is believed that the SFP offers a window into regulatory capacities for child emotions (Kogan and Carter, 1996). It is utilized to assess the developmental trajectories of emotional control in infants (Hsu and Jeng, 2008). It enables researchers to determine parental contributions to infants socio-emotional regulation. Maternal responsiveness, for example, has been described as a significant trait that supports regulatory emotional approaches for infants (Crockenberg and Leerkes, 2000). It is associated with better regulation and less signs of distress in infants (Lowe et al, 2006). Importantly, Kogan and Carter (1996) found that mothers who were more sensitive prior to the SFP had infants who displayed increased attention seeking behaviors, such as smiling, and less prone to attempts to reconnect with their mothers. The SFP's reunion episode offers an opportunity for researchers to observe regulatory behaviours. This suggests that how mothers react to their infants during times of stress that shapes how the infants then use their mothers for external regulation after a stressor is demonstrated. However, focus on within-subject changes in behavior could potentially be more effective (Mesman et al, 2009).

Furthermore, the SFP is important because it elicits physiological responses from the infants, which can then provide insight into infants regulatory capacities. It has been used for a number of diverse research purposes, demonstrating versatility (Mesman et al, 2009). Recently, it has been adapted to examine socio-emotional regulation in developmental risk conditions, such as in infants of depressed mothers (Weinberg et al, 2006). Specifically, one study indicated that the still-face phase elicited less distress in infants of depressed mothers compared to controls (Field et al, 2007), potentially because their prior history of depressive contact with their mothers encourages them to increase their positive attachment signals to engage maternal attention and response (Graham et al, 2018). In addition, the SFP has also been conducted with fathers, who are significant as they play a different role in the development of children's emotion socialization (Li et al). For example, they tend to use more distracting strategies than mothers in the response to fear of their children (Cassano and Zeman, 2010). A study fathers found that children expressed a more negative effect with the SFP with their fathers compared to their mothers (Braungart-Rieker et al, 1998).

To summarise, the SFP has provided researchers with a reliable tool to investigate development in infancy, as it continues to assist us in the understanding of children's behavior throughout childhood.