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## 2.1 Lifespan Development and Aging

Aging may be defined as the assembly of changes that take place in individuals within the lifespan (Staab & Hodges, 1996). It is a complex construct that is influenced by diverse bio-psycho-social variables, which entails exploring the aging individual as a whole, in relation to his or her environment (Atchley, 1972; Staab & Hodges, 1996). Lifespan developmental theories explore the biological, cognitive and psychosocial changes and consistencies that take place during the life cycle. Lifelong development pointed out that development is not concluded in adulthood, since it comprises the complete lifespan (Baltes, 1987).

Biologic theories explore the physiologic processes that occur autonomously of external pathologic effects, and structural changes in living organisms that regulate developmental changes, longevity and death. Furthermore, psychological theories investigate lifestyle, personality and environmental variables and how these may influence aging behaviour among persons and on ways older adults adjust during old age, whereas sociologic approaches to aging have highlighted older adults' status as a group in comparison with other age groups in the society (Staab & Hodges, 1996). Indeed, Baltes and Baltes (1990) suggested that aging may be best characterized as a heterogeneous process with diverse outcomes.

Aging intensifies the likelihood of various chronic health conditions and disability, and decreases in cognitive functions, such as short-term memory and learning speed (Atchley, 1989). In particular, old age may bring challenges that are influenced by deep, psychological processes (e.g., dealing with mortality) and other concerns with appearance, social roles and financial stability, and include issues that can deeply limit the satisfaction with life. Therefore, older adults have to deal with illness, incapacity and aging-related changes, to adjust to the challenges of aging (Fernández-Ballesteros, 2007).

Research on aging has repeatedly underlined losses. In fact, gerontology professionals have viewed age-associated cognitive and physiologic declines as

age-determined (Alwin & Hofer, 2011). Atchley (1972) suggested that in middle age, the individual first acknowledges that she or he is growing old, whilst later maturity is characterized by difficulties in being future-oriented and by a sustained consciousness of the aging process.

The array of potential results of the aging process is appropriately large to comprise diverse courses above and below a disability threshold. In this context, a major component of age-associated deficits can be described in terms of diet, habits, lifestyle, and a range of psychosocial variables that are extrinsic to the aging process (Rowe & Kahn, 1987, 1997).

Growing literature has stressed that, despite the challenging and inevitable losses that result from aging, a diverse array of older adults experience well-being in old age. In fact, previous research indicated that well-being may increase with age (Siedlecki, Tucker-Drob, Oishi, & Salthouse, 2008). This opposing relationship has been designated as the paradox of well-being. In this context, older adults can regulate the subjective impact of age-related losses, by internally adjusting and restructuring reality and, thus perceive positive well-being even when objective life circumstances are negative (Diener & Suh, 1997; Fernández-Ballesteros, 2007; Kunzman, Little, & Smith, 2000).

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## 2.2 The Concept of Adjustment to Aging

### 2.2.1 Adjustment or Adaptation?

The term adjustment, used in gerontology, is rather unclear. Although this concept was most prevalent during the 1940s and 1950s, it has its background in the nineteenth-century academic research (Cottrell, 1942; Schaffer, 1936; Young, 1940). In the Darwinian school of thought, adaptation referred to the process of meeting a threatening environment successfully. At the biological level, it designates that the organism has prevailed over any danger, fatigue and disease (Tréanton, 1966). Later, in social science the biological concept of adaptation has been renamed adjustment, to highlight the individual's attempt to survive in his or her social and physical environments (Lazarus, 1976). Both the terms 'adjustment' and 'adaptation' were used interchangeably in early research (Atchley, 1999; Havighurst, 1968; Tréanton, 1966).

The construct of adaptation was originally studied in biology and was keystone in Darwin's (1859) theory of evolution. An array of types of organisms survived and reproduced because they could adapt, whilst others became extinct because they did not adapt successfully to the difficulties of living. In this definition of adaptation, the prevalence of the individual was less relevant than the one of the species and the quality of life is of no great consequence (Darwin, 1859).

Havighurst (1948) highlighted that the key notion for adjustment was adaptation, as a dynamic process on which, the individual adapts continually throughout the cycle of life. This author suggested that adjustment is a personality-driven activity and that older adults experience new situations to which they must adjust. Generally

speaking, adaptation encompasses adjustments on the part of the individual to new or changed situations, including psychological, social and physical changes. These adjustments involve processes internal to the individual, such as building knowledge about the setting, as well as external processes, such as dealing with changes in the situation (Hatch, 2000).

Moreover, adjustment was originally assumed as comprising two processes: fitting oneself into given environments and shifting the environment to fit one's needs or values (Atchley, 1999). One important criticism to this concept is its partial implication of fitting in with the environment, similar to adaptation (Lazarus, 1976). Although adjustment's roots lie in biology, it concerns the diversity of possibilities, in which the individual deals with his or her needs. In fact, adjustment characterizes a functional and dynamic standpoint for understanding human behaviour (Lazarus, 1976).

For Havighurst (1968), adjustment describes the goodness of the internal arrangements by which an adaptation is maintained. Furthermore, this author (1968) hypothesized that adjustment was influenced by the goodness of fit between the physical organism, personality and social environment, that is, the adjustment would be higher when the body was healthy, the personality was flexible and the environment was supportive. Additionally, Cattell (1950) indicated that it was not possible to evaluate, except in theory, the goodness of adjustment. Additionally, this author pointed out three main adjustments to be made in late adulthood: adjusting to retirement and decreased income (e.g., the loss of the adult's professional role generates a need for individual adjustment), adjusting to the death of a spouse (e.g., adjustment to increased free time) and adjusting to physical and health changes (e.g., adjustment to physical frailty and reduced strength).

### 2.2.2 The Meanings of Adjustment to Aging

Aging is a long-term process, which requires continuous adjustment (Birren & Schaie, 2006). Age-related alterations can be gradual or abrupt, minor or great, stemming predominantly from within the individual, from the circumstances or most frequently, from the connection between these (Hatch, 2000). Research on adjustment to aging reflects these diverse challenges. There is a number of processes that the individuals use to deal with limitation shifts came across in their living. Changes that need adjustment can occur within the individuals, in the situations or in the environments (Atchley, 1989).

The earliest meaning of adjustment is good order, a definition that indicates good conduct, according to a normative standard and an acceptable level of competency. This definition precludes the state of mind as a defining characteristic, although such practice began to appear in gerontology during the 1940s (Horley, 1984). In the subsequent decades, relationships have not always been established between a state of mind and measures of adjustment (Graney & Graney, 1973).

Another early description of the psychological adjustment was based on the concept of competence, defined by White (1959), as the organism's ability to interrelate

effectively with its environment. Havighurst (1961) indicated morale as the means for evaluating adjustment. Williams and Wirths (1965) studied successful adjustment to aging within diverse lifestyle types. They found that older adults were capable to adjust successfully in most lifestyle types and that these individuals had chosen lifestyles that fit their distinct personalities and life goals. Although the above definitions do not agree in detail, they suggest that the adjustment is related to the individual's state of mind, emotions, feelings, and subjective psychological reactions (Tréanton, 1966). Furthermore, Rosow (1967) pointed out that since the beginning of the last century, the predictors and correlates of adequate adjustment in late adulthood have been a concern, namely the distinction between good and poor adjustment. Rosow emphasized that the construct of adjustment to aging was based on the concept of equilibrium and pointed out that adjustment should be viewed as a dynamic phenomenon. The concepts of adjustment and equilibrium were stressed as interchangeable and both notions depended on the concept of balance (Rosow, 1967). Additionally, this author indicated that the key issue when assessing adjustment arose when it was considered as a state and not a process. Moreover, this author indicated four possible evaluations of adjustment: morale, happiness, activity and participation. Rosow highlighted three approaches that had been used to evaluate adjustment: psychological, sociological, and social-psychological. The first approach indicated that adjustment is affected by personality variables, psychological states and self-perceptions. The sociological approach comprised the influence of roles, activities and relationships which affect individual's adjustment. Finally, the third perspective combined both approaches.

In a study on adjustment in later life, Neugarten, Havighurst, and Tobin (1968) highlighted different patterns of adjustment based on personality type, social activity and satisfaction with life, namely, integrated and disorganized patterns. Later, Neugarten (1977) underlined that personality was relevant to understanding adjustment in old age. However, this study did not address the process that accounts for how different personalities adjust to the life events they encounter in old age.

Research on adjustment to aging was developed to enlighten a common and paradoxical outcome: In spite of significant decrease in autonomy and functioning, health, activities and social relationships, an increasing number of older adults experience significant well-being over time. Moreover, perceived happiness and satisfaction were initially identified with adjustment (Havighurst & Albrecht, 1953). For these authors, the terms happiness and good adjustment were used interchangeably, in spite of not having the same meaning. For older adults, adjustment relied greatly upon their present happiness. Reichard et al. (1962) took the position that feelings of inner satisfaction are a better indicator of adjustment to aging than actual role performance is. Conversely, Ipsen (1978) suggested that rather than enjoying their life, people tend to adjust to the challenges found in life. Optimal adjustment in old age was also regarded, as being facilitated by achieving a maximum fit or congruence between the person's needs and the characteristics of the environment (George, 1980). Some researchers regarded adjustment as comprised by the individual's personality (Turner, 1982), whilst others emphasized the role of the environment (George, 1980). Whitbourne (1985) pointed out that the term adjustment was wider in the scope than the notion of coping and Thomae (1992) suggested that

adjustment to aging was obtained when equilibrium between the individual's cognitive and motivational systems was reached. Moreover, George (1987) stressed that adjustment was a broad concept that comprised almost all human behaviour. The construct of adjustment relates to an array of behaviors to meet demands, from developing habits to meeting issues through dealing with anxiety. Furthermore, existentialist concepts, such as goal setting, meaning, and purpose in life, have been integrated in definitions of adjustment and well-being across the life span (Birren & Schaie, 2006; Reker, Peacock, & Wong, 1987).

When does adjustment to aging starts? And is there a point of separation from earlier moments in the lifespan to old age, in which adjustment becomes salient? Atchley (1999) suggests that there is the need for a continuity of adjustments during the lifespan. Courses of adjustment are subject to the scale of the changes that must be integrated. In Atchley's study, most of the participants experienced aging punctuated by changes that could be integrated within a continuity framework. A significant minority experienced possibly disruptive negative changes but were capable to deal with those and maintain a measure of continuity effectively. Additionally, a very small proportion of these participants experienced considerable and disturbing negative changes that were beyond their adjustment ability and ensued long-term discontinuity of their lifestyle or viewpoint.

More recently, some researchers concentrated on the process of adjusting to change, such as how individuals deal with stressful events (Wortman, Silver, & Kessler, 1993), whereas others analyzed results that were supposed to follow from this process (Arbuckle & de Vries, 1995). Moreover, it has also been discussed that adjustment to aging results from the dynamic interaction of components such as autonomy, self-acceptance, personal growth, social network and purpose in life (Bauer & McAdams, 2004; Staudinger & Kunzmann, 2005). Jopp and Rott (2006) added that elementary resources (e.g., cognition, health), attitudes toward life (e.g., optimistic outlook) and self-referent beliefs (e.g., self-efficacy) were pertinent for adjustment to aging in old age.

As previously shown, the literature on adjustment to aging is diverse and denotes an extensive plethora of theoretical perspectives.

However, some authors criticized the fact that the process by which individuals adjust to aging has rarely been assessed. Instead, most of the previous literature has approached what are considered to be outcomes or predictors of the adjustment process, namely mental and physical health and well-being (e.g., Arbuckle & de Vries, 1995; Hatch, 2000).

In fact, some of the most relevant theoretical advancement in adjustment to aging only became visible during the second half of the last century. These results led to a tendency in theorizing about the correlates and outcomes of adjustment to aging, such as environmental and psychological factors.

In part, because of inconsistent empirical results, the concept of adjustment has dropped its frequency of presence in the gerontological literature (Kozma, Stones, & McNeil, 1991; von Humboldt, Leal Pimenta, & Niculescu, 2012).

Additional theoretical developments are expected to be gradually produced, from the realization that consistent research findings may benefit from the further exploration of the research paradigm in all its multidimensionality.

### 2.2.3 Adjustment, Well-Being and Successful Aging

Positive psychology contributed to changing the course of research on human well-being and it may be briefly defined as the scientific field devoted to the study of optimal human functioning (Seligman & Csikszentmihalyi, 2000).

Previous literature of well-being is characterized by terminological variation and construct similarity (Horley, 1984). Hence, the different concept meanings reproduce diversity in conceptual and methodological perspectives (Diener, 1984).

In the 1950s, adjustment, happiness and morale were sometimes used interchangeably, and since the 1960s, the term satisfaction with life started to be used for defining happiness. Furthermore, McNeil, Stones and Kozma (1985) noted that the concepts of satisfaction with life, happiness, adjustment, and morale all indicate aspects of subjective well-being. These authors suggested that some of these terms were correlated, which indicated a convergent meaning among the measures used to evaluate these constructs.

During the last decades, the construct of successful aging has become germane in gerontological research. However, little agreement has been found on the characterization or measurement of successful aging. As so often happens when a common expression is taken for scientific purposes, it has become an umbrella term for a variety of more specific constructs and instruments (Kahn, 2003). Furthermore, Rowe and Kahn (1997) defined successful aging as including three main components: low probability of disease and disease-related disability, high cognitive and physical functional capacity and active engagement with life. Moreover, a process of continuous adjustment is part of the concept of successful aging (Lewis, 2011).

It must be noted that successful aging means aging well, which is different of not aging at all (Rowe & Kahn, 1997). Furthermore, Depp and Jeste (2006) showed in their meta-analysis that around one third of old people have aged successfully. However, the predictors of successful aging included younger age, no smoking, no disabilities, musculoskeletal diseases or diabetes and to a lesser extent, continuing physical activity, social contacts, better self-perception of health, less depression, and less cognitive decline or medical conditions.

This view of successful aging has not been free from criticism. This model described those who have aged successfully instead of explaining the process and personal objectives that individuals endeavour during their life cycle (Pearlin & McKean Skaff, 1996).

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## 2.3 Conceptual and Methodological Issues Related to the Study of Adjustment to Aging

The study of adjustment is driven by issues with specific scope and significance.

Firstly, there is a need in contemporary research to draw upon theoretical frameworks to increase the emphasis and descriptive strength of an adjustment to aging perspective. In this context, although individuals' assessments of their well-being and health have been the most commonly used measures of adjustment, theoretical

models, which included the concept of adjustment to aging resulted principally from studies focusing in aging well and successful aging.

Moreover researchers have often concentrated on recognized outcomes or predictors of the adjustment process, rather than the adjustment process itself. In part, because cross-sectional studies are more widespread than longitudinal studies, it is challenging, to assess distinctive dimensions of adjustment in the old age, in comparison with adjustment dimensions in earlier ages.

Furthermore, age-related alterations are continuous in the life cycle. The implied hypothesis that individuals must adjust to change in order to regain balance, stems unswervingly from functionalism, as does the hypothesis that balance had its place in the individual's life preceding a stressful life event (Hatch, 2000).

Considering that we grant that the perceptions of the older adults should be used as the test for their adjustment to aging, there are diverse issues related to this area of study.

We may consider individuals' own assessments of their health, economic situation and well-being, as the evaluation for adjustment, but the natural consequence implies that adjustment is generally valued as good or bad. Individuals adjust well to aging or they adjust poorly.

Additionally, because the result of the adjustment process being conceptualized as an assessment of overall well-being (George, 1987), the measures most commonly used to assess adjustment depend on the participants' subjective assessments, such as their perceived satisfaction with life, happiness, well-being, and health status, among others. The support on these evaluations, stems partly from the hypothesis that individuals' perceptions reflect their objective conditions and that a certain parallelism occurs between the objective and the subjective domain (Baltes & Baltes, 1990). In fact, diverse measures, including objective and subjective ones should be utilized to assess adjustment. Evaluations of psychological, physical and social functioning dimensions were categorized as objective measures of adjustment (Baltes & Baltes, 1990; George, 1987). Yet, Hatch (2000) argued that the length of life was the only accurately measure of adjustment. These authors agreed that the use of a number of measures, can provide a more complete understanding of the construct of adjustment to aging. However, a pertinent issue related to this is that a multi-criteria method is supported by the fact that different measures of adjustment may be positively associated with one another (e.g., increased health is associated with higher satisfaction with life) (Baltes & Baltes, 1990).

Moreover, previous literature has shown that not all the measures used to assess adjustment are particularly adequate. In fact, measures on social functioning that count on the size of a person's social network or the amount of social exchanges, are particularly questionable. It is also pertinent to bear in mind that not all social relationships are beneficial and supportive (Hatch, 2000; Krause & Jay, 1991; Krause & Rook, 2003; Lemon, Bengtson, & Petersen, 1972).

As mentioned above, several dimensions of adjustment may associate positively with one another (Baltes & Baltes, 1990), which suggests a level of reliability across the measures. For example, older adults in better physical health are more likely to have better mental health, and higher satisfaction with life.



Concerning ethical issues, the American Psychological Association (2003) developed a comprehensive set of guidelines for psychologists, which include the appropriate treatment for participants in the research. Researchers must provide information and debriefing, about the study, suggest support or counselling for participants who become distressed while involved in the experiment. Additionally, researchers must obtain the full informed consent of the participants and explain that participants are entitled to withdraw from the study without risk of penalty and to know what will happen to their data. Data must be confidential and anonymous. By complying with the above guidelines, there is guarantee that participants will be appropriately treated (American Psychological Association, 2003).

In addition to conceptual and ethical complications, studies of adjustment to aging frequently show other methodological issues.

Some have been grounded on small samples, non-randomly selected samples or samples not considered representative of this population (Hatch, 2000).

A pertinent methodological issue when working with older samples is that age is not a categorical variable, such as gender, instead it is a continuous variable and therefore, it does not have natural cut-off points. Particularly, in the case of correlational studies, age can be treated as a continuous variable and thus, there is no loss of information due to the necessity of collapsing individuals into age groups (Whitbourne, 2008).

Moreover, the issue of social desirability (distorting ones' answers to a measure in a way that makes one appear to be healthy, normal or good) is a pervasive issue on research in older adults' well-being (Carstensen & Cone, 1983).

Gerontology scientists must be attentive to the quality of data-gathering instruments. Quality can be evaluated with two measurements: reliability and validity. A measure is reliable when it has the ability to provide consistent outcomes. Reliability can be assessed by test-retest reliability or by the internal consistency of the measure. A measure has validity if the test measures what it is supposed to measure. Different kinds of validity can be tested, such as, content validity, criterion validity, construct validity, convergent validity, discriminant validity and divergent validity (Maroco, 2011).

Qualitative design allows for the exploration of information outside the thin limits and hypotheses of quantitative methods. When using qualitative methods, questions on adjustment to aging can be used in numerous contexts, such as, semi-structured interviews, life-review questionnaires, clinical interviews and narrative interviews. The questions can be posed directly or indirectly to the participants in these studies and by using single or multiple questions. Because adjustment to aging is rooted in individual life experiences, qualitative analysis is necessary to examine complex interrelationships over numerous batches of data covering different time periods. Using a phenomenological approach, participants' perceptions, experiences, attitudes, beliefs are expressed in their chosen words. Considering the singularity of older adults' perceptions concerning the multidimensional context of age and aging, it is key to explore older adults' self-reports, resulting from in-depth narrative interviews (Moser, Spagnoli, & Santos-Eggimann, 2011).



In fact, the subjective perception of age and aging is still an under researched area in gerontology, since a top-down, objectivized perspective, where aging is observed and evaluated from the outside and by professionals still prevails (Daatland, 2002). Yet, increasing literature indicated that most adults see themselves as younger than their age (Öberg & Tornstam, 2001; Westerhof, Barrett, & Steverink, 2003). We know little about what are the causes and consequences of these perceptions and identifications.

Moreover, the combination of qualitative and quantitative analysis is a pertinent design for assessing adjustment to aging effectively. Quantitative analysis is very valuable in describing the proportions which display several patterns over time and in assessing the relative effect of different predictive variables.

Different sorts of design may be used in adjustment to aging quantitative research: (a) the cross-sectional design, in which measures on one or several variables are taken on a single moment and the relations among these variables are analyzed; (b) the experimental design, in which one or more independent variables are caused to vary and the resultant change in the adjustment to aging construct examined; and (c) the longitudinal design in which relationships among measures that are taken on several moments, temporally detached, may be analyzed. We will now analyze these different methodologies and how they are adequate to approaching different aspects about adjustment to aging.

### 2.3.1 Cross-Sectional Studies

As it is valid for other areas of social research, cross-sectional studies have been more predominant than longitudinal and experimental designs. In the cross-sectional design, the performance of people selected is compared at one point in time. The objective of cross-sectional studies is to describe differences between groups that are the result of changes associated with the observed process. To ensure that such assumption is valid, controlling for group differences is necessary. This control is achieved by selecting samples comparable in variables, such as, education and income (Bryman & Cramer, 1990).

The cross-sectional method allows us to evaluate relationships between a specific adjustment to aging measure, and other variables. Examples of the latter procedure include the correlation of adjustment to aging scores with socio-demographic, lifestyle, psychological and health-related variables. Another possible use of this method is to build structural models of adjustment to aging. An adjustment to aging measure is administered and the correlations between the answers to its items are examined by complex statistical procedures known as factor analysis. The outcomes of such analysis allow the researcher to determine that the scale comprises a single dimension or multiple dimensions. A comparison between two or more structural models of adjustment to aging is possible, as well as, exploring the suitability of a particular structural model to different groups of participants. Structural equation modelling, multiple regression and path analysis may be used to investigate the extent to which adjustment aging can be predicted by these other variables. Because

these statistical procedures are based on correlation methods, the course of the relationships can only be presumed, rather than known. Careful attention must be given to prior conceptual model assumptions, for providing accuracy to the results of applying complex statistical procedures. Considering that adjustment to aging is understood in a particular culture or subculture, cross-sectional design can be used for anthropological data-gathering methods (Kozma et al., 1991; Roos, 1988).

Cross-sectional studies present diverse drawbacks. One is the matter of the survivors. Older participants are by definition survivors compared with their age peers who already have died. Therefore, they may represent, for instance, healthier or more cautious groups. The next practical issue is related to the ages selected for the samples. Indeed, the age range for older samples may be as high as 20–40 years, including all respondents over the age of 50 or 60. Furthermore, certain items from personality and mental health measures may be influenced by normal age-related differences, which biases the total score (Whitbourne, 2008). These issues aside, cross-sectional studies are relatively fast and inexpensive, in comparison to experimental and longitudinal studies. They can be utilized with the latest technology or tools (Bryman & Cramer, 1990). Indeed, cross-sectional studies have been used as the preferred method. Yet, we expect that experimental and longitudinal studies will gain greater importance in future research. There is a great sensitivity in the field to the need for their findings to be replicated and verified, for example, by using longitudinal designs.

### 2.3.2 Experimental Studies

The experimental study varies from the others in that it involves the manipulation of an independent variable followed by the quantification of the scores on the dependent variable. Participants are randomly assigned to experimental and control groups. The groups are as analogous as possible on all pertinent variables except the independent variable. It is expected that participants differ in the dependent measure because they were exposed to different levels of the independent variable (Bryman & Cramer, 1990).

Experimental studies appear rather often in the clinical and professional literature (e.g., assessment of the effects of institutionalization and therapeutic intervention in older adults). In cases when the characteristics of a collection cannot be manipulated experimentally, the design is said to be quasi-experimental. In quasi-experimental design, groups are compared on predetermined characteristics. One cannot conclude that the predetermined characteristics caused the variations in the dependent variable; however one can refer to the differences between groups (Bryman & Cramer, 1990). The key disadvantage is the contrived nature of the phenomenon that is essentially simpler than it would be in nature; therefore the phenomenon cannot be replicated unerringly. Additionally, experimental studies may be rather expensive. Conversely, the central advantages of the experimental method

comprise the possibility to make exact measurements and to differentiate relevant causal variables.

### 2.3.3 Longitudinal Studies

The longitudinal method encompasses repeated measurement of the same group of participants. The objective of a longitudinal study is to analyze what happens to people over time (Bryman & Cramer, 1990). With data on the same persons over a long time period, adjustment to aging can be tested because long-term development can be described, namely, in what concerns relationships, activity, and self-concept variables. Test-retest intervening interval may differ from months to years. In hierarchical linear modelling, individual patterns of change are investigated instead of simply comparing mean scores. This is relevant because in longitudinal studies, not every participant shows the same changes over time (Bryman & Cramer, 1990).

Although longitudinal studies are more desirable than cross-sectional approaches when investigating the influence of variables on adjustment to aging, there are methodological disadvantages to these designs, including high cost, time-consuming, selective attrition of respondents, the fact that original tests may become outdated and practice effects on tests which may lead to improved performance. Furthermore, in longitudinal studies, there is an inevitable coincidence of personal and historical time. In fact, researchers cannot know with certainty if the changes observed are influenced by the environment or time (Stroebe, Hansson, & Stroebe, 1993; Whitbourne, 2008). Despite these limitations, longitudinal studies have the potential to add invaluable data on psychological changes in old age (Whitbourne, 2008). Longitudinal approach is principally suitable to answering questions about the stability of adjustment to aging, particularly when the interval between assessment phases is more than 1 year. Examples of this procedure comprise the study of the stability of global adjustment to aging to age change, relevant shifts in life circumstances such death and bereavement or retirement, changes in behaviour, style and personality characteristics.

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## 2.4 Theories of Aging, Adjustment and Well-Being

Gerontology has frequently been labelled as atheoretical, possibly because its scientific journals comprise research with descriptions and examples of relations knotted to operational measures, rather than to interrelated theoretical concepts that establish developed theory. In spite of this common misperception, gerontology encompasses several theories on aging and these theories comprise varied topics, such as the phases of adult development (Erikson, Erikson, & Kivnik, 1986; Levinson, 1990), activity and disengagement (Cumming & Henry, 1961; Havighurst, 1961, Havighurst & Albrecht, 1953; Lemon et al., 1972) and life course (Atchley, 1972). These theories have become an organizing framework for the substantial research

required to become an acknowledged general theory of individual development and aging (Atchley, 1989).

An emphasis on the individual and on his or her adjustment to aging was an early inheritance from the Kansas City Studies (1942–1962) and the first Duke Longitudinal Study (1956–1976), which integrated the disengagement and activity theories of aging, along with continuity theory (Marshall, 1994). Initial theories focused on activity and disengagement, life cycle and roles. Later, theories focused on physiological declines and personality stability over the lifespan. The most recent theories emphasized a change to a transcendence dimension (Schroots, 1996; Tornstam, 1994). Some of the theories are not mutually exclusive. Indeed, some can function simultaneously. The most pertinent to the construct of adjustment to aging will be explored below.

### 2.4.1 The Disengagement and Activity Theories

In early studies, Havighurst (1961) focused on two opposing theories in the area of adjustment to aging: the disengagement theory and the activity theory, and in analysing how these related to aging well.

Disengagement theory was the first explicit, influential and multidisciplinary theory of gerontology, which incorporated several levels of analysis (Achenbaum & Bengtson, 1994). It proposed that under normal conditions of health and economic independence, older adults systematically, desirably and inevitably withdraw from social situations and decrease the number of activities and social relationships, common to middle age. This psychological and social withdrawal leads to a satisfactory balance that is characterized by an enlarged distance and a less-connected style of interaction (Achenbaum & Bengtson, 1994; Cumming & Henry, 1961; Havighurst, 1961). Disengagement was regarded as an inescapable and desirable process, in which, relational interactions were truncated. This process releases older adults from social pressures and gives way for younger adults to assume functional roles to perform an orderly transition of power (Cumming & Henry, 1961). Therefore the disengagement process was beneficial for the individual and the society as well. In fact, these authors initially observed that older adults tend to become less involved in life around them and posited that this withdrawal was an inevitable result of aging, which resulted in decreased social interactions. Additionally, the relationships that were kept were altered in quality. Additionally, disengagement was considered required for individual's successful adjustment to aging (Hatch, 2000).

For Johnson and Barer (1992) individuals who disengage, drop a great number of their previously usual activities completely and their global activity level also drops hugely. Lost activities are not substituted and activities are seldom augmented to counterbalance losses. For the disengaged individual, very little of their pre-disengagement lifestyle continues.

Previous literature on disengagement theory also suggests that individuals can be pushed into disengagement, due to the absence of prospects, which results from age

discrimination or from the social structure of access to opportunities and discrimination against those with frailties (Carp, 1968; Luborsky, 1994).

Achenbaum and Bengtson (1994) highlighted disengagement theory as the first multidisciplinary study of senescence and the development of older adults. Disengagement theory enticed some criticism, mainly due to the fact that its nature was broad and simplistic and the fact that it was concentrated on the inescapability of biology, did not encompass the influence of the personality type and that the notion that activity, instead of disengagement defined successful aging. In fact, this theory did not explicate older adults who continue active and creative until death and the discontent of those who are obliged to withdraw from social interactions. Yet, it emphasized the high morale of older adults under great pressure and their approval of a more contemplative life. In spite of some efforts to revive it, the disengagement theory faded away in the literature by the early 1970s (Staab & Hodges, 1996). Conversely, activity theory suggests that by remaining active and engaged in activities in old age, older adults may experience satisfaction with life and a better adjustment to aging than older adults, who do not practise control over their situation (Lemon et al., 1972). Individuals who achieve optimal aging, according to this theory are those who stay active and manage to resist the contraction of their world. Older adults adjust best by looking for replacements for lost activities, roles and social relationships, and by maintaining activity at a level equivalent to that in middle age (Havighurst & Albrecht, 1953; Rosow, 1967; Tobin & Neugarten, 1961). Havighurst (1948) suggested that older adults replaced activities that they were not able to perform and engaged in new social relations to compensate the ones they had lost. The major criticism to this theory was that it was too general and that it did not address personality differences.

For Havighurst (1961), older adults aged well with both models. Both theories comprised the causes and consequences of role loss in old age and both theoretical models were pertinent for studying adjustment to aging. Furthermore, the debate between these two theories resulted in the dismissal of both of them (Marshall, 1994).

### 2.4.2 The Continuity Theory

Continuity theory was created to explain a common research outcome: Despite pertinent shifts in functioning, health and social relationships, a significant share of older adults indicate a substantial stability over time in patterns of ideas, activity profiles, social relationships and living arrangements (Atchley, 1999). Accordingly, continuity theory was related to the building and practice of lasting patterns, intended to improve satisfaction with life and adjustment to change. Opposing different theories of adult development, which were in part extensions of child development theories (e.g., Erikson, 1963; Levinson, 1978), continuity theory was a theory of unceasing adult development and it was generated from studies of adjustment in middle-aged and older adults (Atchley, 1972). It assumed that individual selections are made not only to attain objectives but to adjust to continuously

changing settings, as the individual faces them and it focused on the continuity of the ideals, patterns, lifestyle, personal goals and adjustment capacity during the lifespan (Covey, 1981). Moreover, continuity theory was associated with the development and maintenance of the adjustment capability. It assumed that the aim was not to continue the same but to adapt enduring values to new circumstances, as adults experience aging and lifespan changes (Kaufman, 1986). Atchley argued that continuity and change both usually exist simultaneously in people's lives. However, the long-term consistency that formed the foundation of continuity theory was not the homeostatic equilibrium predicted by activity theory (Rosow, 1967). Instead, Atchley regarded continuity as a flexible and evolving process, with robust probabilistic relationships, among past, present and expected patterns of thought, behaviour and social arrangements.

This theory did not predict that by applying continuity strategy for decision-making would lead to successful adjustment; instead it foresaw that most individuals will use continuity as their main adjustment strategy. Nonetheless, continuity strategy seems to be adaptive for numerous older adults, in that, this strategy results in maintenance of satisfaction with life in late adulthood, even among those who experience incapacity (Atchley, 1998). This theory presumed that older adults are driven to continue to use the adjustment approaches that they have developed throughout lifespan to analyze situations, plan future action and adjust to changes. In other words, the concepts that older adults maintain about adjustment are an outcome from a long period of learning and selective investment, all in interface with their external physical and social environments (Atchley, 1972).

Continuity may be both internal and external, and both cooperated to contribute to older adults' decisions (Atchley, 1989). Older adults uphold external and internal structures and choose to apply strategies related to previous individual and social experiences to sustain continuity. For Atchley, internal continuity was a basis for daily activities, it provided a sense of ego integrity, it contributed to self-esteem and it was the means of meeting one's needs. External continuity was the means for meeting role pressure, it granted social support, it provided feedback from other individuals for anticipating the individual's self-concept, it allowed older adults to deal with the cognitive and physical challenges of aging, and lastly, it reduced the uncertainty of personal goals.

Older adults bring patterns of coping from one life stage to another. This suggested that older adults adjust to the process of aging, similarly to all of life's other changes (Atchley, 1972). Additionally, this author regarded disengagement as the social element in aging, the withdrawing of activities, social network and interactions.

Continuity theory has been criticized on the grounds that it is too broad to be tested (Covey, 1981). Empirical tests of the continuity theory are relatively limited. Most of these studies are based on cross-sectional or short-term longitudinal data, making it challenging to determine whether or not observed patterns were established previously in participants' lives (Hatch, 2000). Yet, continuity theory offered a conceptual background that can be used to analyze general patterns of activities, relationships and mental constructs, and to distinguish continuity from

discontinuity operationally, provided that the investigators have longitudinal data (Atchley, 1998). Additionally, it has presented greater long-term influence than the disengagement and activity theories (Marshall, 1994).

### **2.4.3 The Model of Selective Optimization with Compensation and the Socioemotional Selectivity Theory**

The Selective Optimization with Compensation (SOC) developed by Baltes and Baltes (1990) suggests that successful aging corresponds to a general process of adjustment, involving the components of selection, optimization and compensation, which constitute the basic component processes for changes regarding aging and adaptive capacity (Baltes & Smith, 2003; Freund & Baltes, 1999).

In this theoretical model, people select life domains that are relevant to them, optimize the resources that enable success in those domains, and compensate for losses in those domains in order to adjust to psychological, biological and socio-economic variations throughout their life cycle and to generate an enduring successful development in later life. Since stressors (e.g., declining health) may increase whilst resources decline in old age, selection, optimization and compensation processes become gradually significant during aging to sustain a positive balance between gains and losses (Baltes & Carstensen, 1996; Freund & Baltes, 2000; Freund, Li, & Baltes, 1999). SOC emphasized doing the best with what you have: physically, mentally and situationally (Kahn, 2003). It is regarded as a universal process, but its manifestation very much relies on the individual and his or her environment and culture (Baltes & Carstensen, 1996; Marsiske, Lang, Baltes, & Baltes, 1995). The SOC definition of aging well, thus, allows for diverse individual paths of successful development in old age.

The concept of successful aging denotes the resilience of individuals who succeed in attaining a positive balance between gains and losses during the aging process (Baltes & Baltes, 1990). These authors suggested that older adults were able to compensate for such losses and remain satisfied with their lives. Older adults use adaptive resource allocation processes, which play a central role in all functional domains and at all levels of analysis (e.g., interpersonal, behavioural, neuronal). Optimization and compensation processes not only create resources, but also rely on the accessibility of resources (Freund & Baltes, 2000). The use of technology and the learning of new abilities, is an example of optimization and compensation processes. When in old age losses begin to outnumber gains, selection becomes more noticeable. In result, older adults focus on their most relevant objectives, restructure their objective priority, disengage from original objectives and define new objectives (Freund & Baltes, 2002). In fact, the SOC model underlines the significance of making success as possible, by selecting between life spheres and prioritizing objectives. However, the age-related deterioration of optimization and compensation remains in advanced late adulthood (Freund & Baltes, 1999). This oldest-old group is characterized, according to these authors, by a reduced potential to compensate for losses because of cognitive deterioration and augmented frailty.



Furthermore, this decline in SOC strategies in later life is likely the result of an age-related decrease of resources, which hampers the efforts of engaging in optimization and compensation, mainly because the latter employ several resources (Freund & Baltes). More recent findings about the oldest-old indicate a biocultural incompleteness, unpredictability and vulnerability of the fourth age. Thus, the fourth age is not merely a continuation of the third age. Indeed, healthy and successful aging may have its age limits (Baltes & Smith, 2003).

A common criticism to this theory is that although it is to some extent proactive, this model did not clearly approach the strategies older adults may use before a possible loss in resources in order to prevent it. Moreover, the SOC theory suggests that people's actions are rational, while this may not be always true (Baltes, 2003). Furthermore, the literature on emotion regulation in aging suggested that older adults down regulate negative emotions and affect in order to compensate for the decreasing cognitive capabilities, and for maintaining or enhancing social relations. SOC theory principal focus regards the motivational outcomes of perceived time left in life. This lifespan motivational theory highlights the consequences of a gradually changing temporal horizon on human development and predicts changes in social network size and composition throughout the life course (Carstensen, 1991). When time is perceived as limited, as it is in old age, people are driven to attain emotional satisfaction, that is, they deepen current relationships, devote themselves to sure things, and enjoy life (Carstensen, Isaacowitz, & Charles, 1999).

Choosing relationships based on their influence on well-being is an adaptive strategy that envisages affective well-being. When perceived time left is limited, favoring significant relationships, whilst reducing peripheral ones, promotes affective well-being. Support for this hypothesis comes from the Berlin Aging Study, in which 90-year old individuals indicated smaller social networks but increased closeness than those in their previous decades (Lang, Staudinger, & Carstensen, 1998).

Because higher priority is positioned on the emotional aspects of life, and emotional regulation is both deliberative and intuitive, this motivational shift may have effects on the cognitive processing, namely when it involves obtaining new information (Birren & Schaie, 2006).

Furthermore, Eklides and colleagues (2003) found that adjustment to old age involves adjusting one's objectives to one's abilities, using emotional control and maintaining self-efficacy, as well as perception of health problems relative to others and downward social comparisons. These forms of adjustment to aging indicate recognition of one's limits, as well as emotion regulation and implementation of emotion-focused strategies in order to deal with health and social issues (Carstensen, Fung, & Charles, 2003).

SOC theory was criticized because it assumed that social relationships served a purpose, such as emotion regulation. Yet, social relationships may be a simple form of entertainment (Mannell & Kleiber, 1997). Moreover, the nature of social relations is probably limiting the explanatory and predictive power of this theory. Indeed, older adults may maintain detrimental relationships, for instance, with

family or formal caregivers, mainly because of ease, social convention or need. Conversely, friendships are voluntary. Furthermore, older adults may not have very close social contacts due to death, disability, or relocation, which does not likely support emotional well-being (Pinqüart & Sorensen, 2003).

#### **2.4.4 The Identity Process Theory and the Model of Assimilative and Accommodative Processes**

In the identity process theory, the objective of development is optimal adjustment to the environment through creating an equilibrium between maintaining consistency of the self (identity assimilation) and changing in response to experiences (identity accommodation). Through identity assimilation, the individual interprets events in a way that is consistent with his or her present identity. If an event occurs that is so discrepant one cannot interpret in terms of his or her identity at the moment, identity accommodation is used (Sneed & Whitbourne, 2003). These authors suggest that it is natural tendency to use assimilation when confronted with a new situation. Yet, to be as well-adjusted as possible, one needs to make accommodations when the circumstance comprises changes.

Research shows that older adults increasingly rely on identity assimilation and identity balance to be able to maintain a positive self-esteem. For example, these older adults accept the fact that they are aging but they do not become fatalistic. Conversely, identity accommodation, is related to lower levels of self-esteem. Additionally, a certain extent of denial or minimization seems to be relevant when regarding changes in the body and identity (Sneed & Whitbourne, 2003).

Brandtstädter and colleagues presented their model of assimilative and accommodative processes, in which and contrary to the SOC model, they propose that disengaging from obstructed objectives is an unintended and progressive process, principally in the case of objectives that are central to an individual (Brandtstädter & Greve, 1994; Brandtstädter & Rothermund, 1994, 2002). Despite the fact that assimilative strategies, that is, actively altering the environment to fit individual objectives, are desirable while it is probable to use resources, older adults may have to opt by accommodative strategies, such as modifying one's personal needs to fit the current circumstances, when resources for compensation decrease, in order to continue satisfied with their life (Brandtstädter & Rothermund, 2002). For these authors, disengagement is frequently needed in order to adjust to negative emotions in old age, to continue satisfied with one's life and performance (Rothermund & Brandtstädter, 2003a) and to circumvent depression in this stage of life (Rothermund & Brandtstädter, 2003b). In short, accommodative flexibility may be relevant for successful aging. Remarkably, Wrosch, Scheier, Carver, and Schulz (2003) found that disengagement from unachievable objectives was related to higher well-being in older adults, but only when these found new objectives that were significant to them, a process these researchers termed goal reengagement. According to this model, assimilation and accommodation processes allow older adults to attain a

correspondence between actual development results and personal objectives and motivations (Mallers, Claver, & Lares, 2013).

### **2.4.5 The Theory of Gerotranscendence**

Despite the fact that the theory of psychological disengagement (Cumming & Henry, 1961) has been systematically vetoed by gerontologists, Tornstam (1994) studied the refusal of disengagement theory in favour of activity theory. This author suggested that instead of the passive withdrawal of disengagement, older adults may be displaying gerotranscendence, an involved disinterest from the social and economic scheduling that concern younger adults. Tornstam highlighted that the wisdom that accompanies aging can be defined best as a change in metaperspective, in the older adults' overall ideas, from a rationalistic and materialistic perspective toward a more transcendent viewpoint. This author posited that the change in metaperspective related to transcendence was associated with a redefinition of space, time and objects, distant from deterministic conceptions in the direction to more adaptable conceptions of past, present and future, an improved feeling of union with the universe, a reduced fear of death and a diminished focus in redundant social interaction.

Tornstam (1994) theory is grounded on an assumption that the social circumstances and individual objectives of diverse older adults offer a prospect to slow life down and to experience a mystical unification with the divine. Furthermore, the core measure of transcendence is associated with three items: feeling an increased connection with the universe, having further enjoyment from the individual's inner life and having less fear from death. Increasing gerotranscendence in old age seems to be a beneficial personal objective that augments the capability of wisdom and provides valuable integration of the physical body, disease and incapacity whilst favouring adjustment to aging.

Constructs such as spirituality, transcendence and religion are still far from attaining agreement upon definitions among researchers, and the general reader may get confused regarding the meaning of these diverse terms. Although the theory of gerotranscendence made a worthy effort toward elucidating why spiritual development may become a priority objective in old age, the theory still requires additional conceptual enhancement (Atchley, 1999).

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## **2.5 Concluding Remarks and Future Perspectives**

In this chapter, I hope to have accomplished its central objective, which was to describe the scope and limitations of theoretical and empirical research that were dedicated to adjustment to aging literature.

Although old age is not necessarily as problematic as is commonly seen, declines have constituted the dominant pattern for research of older adults. Indeed, in late

adulthood, individuals may face aging-related changes and adjust to the challenges of aging.

The concept of adaptation was initially studied in biology, where it granted species survival. Later, in social science, it was applied to the individual and how he or she dealt with living and it was named adjustment. Both the terms 'adaptation' and 'adjustment' were used indiscriminately in early research.

It is rather challenging to estimate what adjustment to aging actually encompasses. Primary is the fact that adjustment to aging remains an ambiguous construct despite its extensive usage. Happiness, equilibrium, morale and satisfaction were initially identified with adjustment, although with specific meanings. The construct of adjustment to aging is relevant as it highlights the challenges that older adults encounter and how they relate to these. Although the early definitions did not agree in detail, they highlighted that adjustment was related to the environment and individual's state of mind, emotions, feelings, and subjective psychological reactions.

Adjustment to aging was viewed continuously in the lifespan and as a dynamic phenomenon, which was facilitated by achieving a maximum fit or congruence between the person's needs and the characteristics of the environment. A process of long-lasting adjustment was indicated as part of the concept of successful aging. Moreover, different patterns of adjustment were suggested by some authors. Later, existentialist concepts, such as goal setting, self-acceptance, personal growth, meaning, and purpose in life, and elementary resources, attitudes toward life and self-referent beliefs were included in the definitions of adjustment.

The previous considerations dissected adjustment to aging in several ways, to expand our understanding of general ways in which individuals adjust. Those lines clearly show the value of using diverse conceptualizations for identifying the nature of adjustment to aging. Most authors agree that adjustment to aging is a dynamic and multidimensional process and looked at an array of variables that could affect adjustment to aging. Although different perspectives about adjustment exist, these also overlap. Furthermore, if we can comprehend the process about how individuals adjust, we may accurately address individuals, to better adjust to aging, in particular during old age.

Literature was deepened to explain a shared and paradoxical result: Despite the declines in autonomy, health, functioning and social relationships, an increasing number of older individuals experience significant well-being in old age. Indeed, the literature on adjustment to aging became visible during the second half of the last century and denotes an extensive plethora of theoretical perspectives.

The term 'adjustment' has dropped its presence rate in the gerontological research, mainly because of varying empirical outcomes. Yet, growing literature proposes that adjustment to aging is pertinent for research and health professionals to realize the repercussions of late adulthood and longevity.

The study of adjustment implies the existence of different conceptual and methodological issues. Theories which included the construct of adjustment to aging resulted principally from studies focusing on aging well and successful aging. The measures used most commonly to assess adjustment depend on participants'

perceptions, such as happiness, well-being and health. Nevertheless, not all the measures used to assess adjustment are particularly adequate and some of these may often be positively associated with one another. Moreover, the quality of the measures may be evaluated with two measurements: reliability and validity.

Qualitative analysis is necessary to examine the uniqueness of older adults' perceptions. Moreover, the combination of qualitative and quantitative analysis is a pertinent design for assessing adjustment to aging effectively. There are three central quantitative bases of information about adjustment to aging: cross-sectional, experimental and longitudinal methodological designs. Additionally, complying with ethical guidelines warrants that participants are appropriately treated.

Gerontology research comprises several theories on aging with varied topics, such as the phases of adult development, activity and disengagement, life course, personality stability and transcendence. Some of the theories are not mutually exclusive and can function simultaneously.

Consideration of these theoretical models contributes to understanding current discussions about adjustment to aging. However, findings present no consensus in the literature concerning their role on this construct.

The triangle of disengagement, activity and continuity theories are the most well-known of the early viewpoints in gerontology. These theories offered different perspectives of old age, highlighting, respectively, that activity and disengagement in old age originates satisfaction with life and that older adults pursue continuity as they adjust to challenges in old age. The above early theories were criticized by their broadness and prescriptive nature. However, they have had substantial influence in modelling the research on aging. Furthermore, in the identity process theory, reliance on identity assimilation was found to be higher in older adults. Conversely, in the model of assimilative and accommodative processes, identity accommodation was more frequent in older individuals.

The researchers who developed aging theoretical models, such as the model of selective optimization with compensation, the socioemotional selectivity theory and the theory of gerotranscendence recognized losses as an unavoidable element of the aging process, but highlighted that older adults are able to generate positive outcomes in old age.

This chapter has attempted to incorporate the theories and concepts which involved adjustment to aging in its definition. The discussion of theories supported the view that gerontology needs solid groundwork for the concept of adjustment to aging.

Additional theoretical developments are expected to be gradually produced, from the realization that consistent research findings may benefit from the further exploration of the research paradigm in all its multidimensionality.

It has been observed that as literature started to recognize that aging is a heterogeneous process with a diversity of pathways that may all result in the maintenance of satisfaction with life in old age, prominence has swapped from stipulating criteria of aging well to delineating the strategies involved in this process.

In the past decades, literature on the subject of adjustment to aging has enlarged, and now comprises both theoretical and empirical studies, the process itself and

diverse resources and other factors which contribute to this process and, additionally, the outcomes of adjustment to aging.

We need to know more about the process of adjustment to aging, its strengths and weaknesses and under what conditions it may be beneficial or harmful. The origins and nature of adjustment to aging entail a body of theories, concepts, underlying relationships and research methods that can be very useful as we attempt to comprehend the development of the present and forthcoming cohorts of older adults. This chapter has analyzed adjustment to aging in a general approach. More detailed conceptualizing and in-depth data, is therefore, necessary and will be provided in the following chapters.

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