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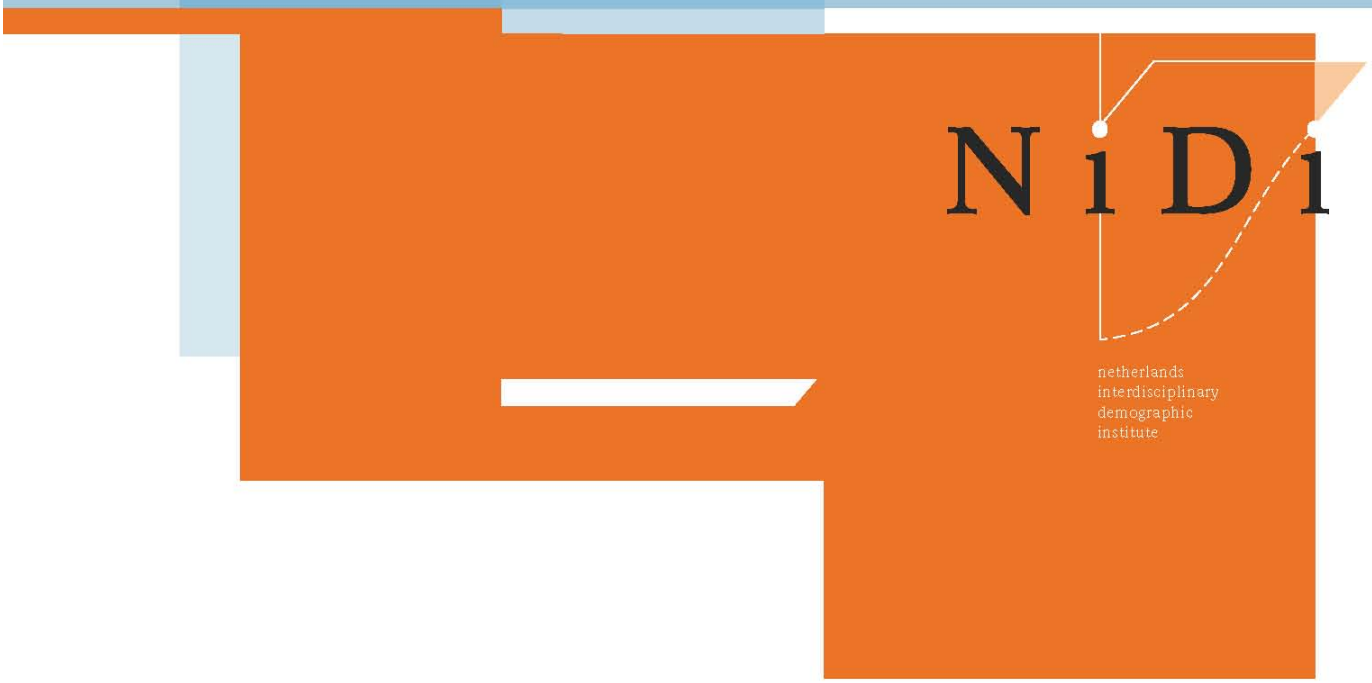

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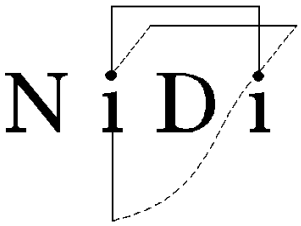

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Abstract: The objective of this review is to propose a way to operationalize the chiefly theoretical notion of agency in both a general sense, but with specific suggestions for retirement research. Toward that aim, the review first provides an overview of relevant terminological issues and theoretical considerations that have been discussed in the life course literature. Second, the review put forth related social psychological constructs that can be used to operationalize agency. The review ends with a discussion of the relevance of planful competence and situational strength in operationalizing agency, and suggest areas for future research to focus on.

1. Introduction

Adopting a sociological perspective often entails showing the significance of social context and structure in explaining a social phenomenon (Settersten and Gannon 2005). Hence, non-structural factors are rarely studied empirically, despite being given conceptual relevance. In the sociological life course literature, agency is an example of one such non-structural factor. On the one hand, agency has been frequently cited as being a core tenant in life course research (Elder, Johnson and Crosnoe 2003), but on the other hand, few studies have actually measured and studied agency and it has remained an elusive and underspecified theoretical concept (Hitlin and Elder 2007; Marshall 2005; Moen 2013). Perhaps because it is so rarely specified, there is a recent and growing interest within the field to advance the (chiefly) theoretical notion of agency, to an empirically tangible concept (Hitlin and Elder 2006; Schafer, Ferraro and Mustillo 2011), subsequently opening up the empirical black-box of agency (see Coffey and Farrugia 2014; Eteläpelto et al. 2013 for reviews).

Some studies have already attempted to put agency under empirical scrutiny (Hitlin and Elder 2006; Schafer, Ferraro and Mustillo 2011), and yet others proposes specific psychological concepts to guide this endeavor (Hitlin and Elder 2007; Hitlin and Long 2009). These studies go a long way in advancing agency as an empirically tangible concept, by suggesting and drawing on existing psychological concepts that have relevance for the life course understanding of agency. Still, however, two gaps can be identified in the present literature. First, the suggested concepts does not cover the whole range of conceptually relevant dimensions to address agency. For example, Hitlin and Long (2009) do not offer a discussion of temporal concepts that have been proposed elsewhere as *the* way to make empirical and conceptual sense of agency (e.g. Emirbayer and Mische 1998; Hitlin and Elder 2007). The role of time in understanding agency is discussed further later on. Moreover, concepts to measure the social context, such as situational strength (Cooper and Withey 2009; Meyer and Dalal 2009), and its relevance for agency is lacking. Considering such measures may potentially offer a way to empirically approach the relationship between structure or contextual factors and agency. Second, the connection between the concepts used to operationalize agency and its definition is not directly clear. It is clear that the existing literature converge on the clear link between psychological measures of control and the concept of agency (Hitlin and Elder 2006; Hitlin and Long 2009). Although agreeing with this approach, the critique is rather that there is an abundance of control measures, some of which may be more or less applicable in operationalizing agency depending on its specific

definition. As will be made clear later on, making use of a typology which organizes this heterogeneous group of concepts (Skinner 1996), goes a long way in clarifying the relation between the definition and measure of agency.

The aim here is to address the aforementioned gaps. In so doing, the general goal is to advance agency as an empirical concept, that can be applied as an explanatory factor of social phenomena and behavior in general, and in particular for studies of the late life course and retirement. To achieve this goal and address the two previously mentioned gaps, the following first provides an overview of the theoretical literature on agency. This section will also contribute toward terminological clarity, not only of agency itself but also its relation to structure as discussed in the life course literature. Second, a theoretically informed discussion of possible measures to operationalize agency is provided.

Given the extant literature on agency especially within sociology, it is necessary to underscore that the following review is situated within the life course literature. Hence, engaging with social theorists such as Giddens, Bourdieu and Archer, who explicitly discuss agency in relation to structure, is considered beyond the scope of this review. The (social) psychological literature chiefly informs the discussion of empirical measures, given that this body of research contains several concepts useful to operationalize agency. However, this literature also includes some theoretical discussions of agency that are incorporated in the conceptual discussion.

2. Theoretical Considerations

The goal of this section is to address some theoretical points implicitly or explicitly discussed in the life course literature, which have relevance for empirical studies that seek to employ agency. The majority of the points of discussion assessed here, are related to how agency is defined and, moreover, how it is linked to other concepts such as structure and the self. To provide an answer to the former is perhaps the most widely discussed question in the existing literature. For example Marshall (2005) is able to identify seven different, albeit related, explicit and implicit understandings of agency in psychology and sociology. Unsurprisingly and perhaps consequently, there are several reviews of how agency has been conceptualized in different fields of sociology (e.g. Coffey and Farrugia 2014; Eteläpelto et al. 2013), and some efforts to provide terminological clarity (Campbell 2009; Emirbayer and Mische 1998; Gecas 2003; Hitlin and Elder 2007; Marshall 2005; Moen 2013). Before proceeding it is therefore informative to provide a provisional definition. For that purpose, the perhaps most

'intuitive' and instructive definition is '*agency as the ability to influence one's life*' (Mortimer and Shanahan 2003). Further, agency is implied in those actions that are intentional (Bandura 2006; Emirbayer and Mische 1998; Hitlin and Elder 2007), in the sense that agency leads to actions that are intentionally pursued to exert influence on one's life.

With this (brief) understanding of agency in mind, the reminder of the conceptual review is concerned with discussing the following four questions on the basis of the literature: (1) What is the relationship between agency and structure? (2) How has time been related to agency? (3) Whether agency should be viewed as a variable or a fundamental human capacity? And lastly, (4) whether agency is as a general or domain-specific concept? In discussing these questions, the aim is to arrive at a better understanding what agency is and how it relates to other notions, contribute towards terminological clarity, and highlight areas that future research should focus on.

2.1 Agency and Structure

When discussing agency, it is difficult to avoid mentioning its relation with social structure. To organize the most important aspects discussed in the literature in this regard, it is instructive to distinguish clearly between two aspects: (1) How structure may influence agency (structural determinism), and (2) how agency may influence structure (voluntarism) (c.f. Shanahan 2000). Last, a short discussion of the middle-stance, agency as situated in social structure and context (e.g. Elder, Johnson and Crosnoe 2003), often formulated in the literature is provided.

Structure shaping agency. There are two ways in which the literature discusses how structure affects agency: On the one hand, structure as shaping the opportunity for agency, and on the other hand, structure as directly influencing the variable agency.

One core principal in the life course literature is that individual agency and life course construction is situated within the social context and structure, that both provides opportunities and places constraints (Elder, Johnson and Crosnoe 2003). Here, I would suggest to label the terms that captures this notion in this respect as 'the opportunity for agency', following Moen (2013). But what exactly does 'opportunity for agency' mean? In Moen (2013)'s institutionalist approach, agency is argued to be shaped by institutional factors and made possible by a loose coupling between different institutions in which the individual is engaged. The loose coupling is possible when there is (1) contradictory institutional logics or institutional blueprints that 'stipulate' different kinds of behavior, (2) the institutionalized

means and goals are decoupled or disconnected, or (3) a combination of the two. The higher the degree of loose coupling, the greater the opportunity for agency (Moen 2013:192-193). To clarify, it may be useful to consider the following example: Imagine the different domains in life as different restaurants on a street. The dish we order, is guided by the menu the restaurant has. These menus may differ in both the type of cuisines and how many dishes from these cuisines that are listed, and the opportunity for agency is represented by the menu a person receives when sitting down in the restaurant. Loose coupling is exemplified by those restaurants with an abundance of both cuisines and varieties within these cuisines, showing a lack of a clear theme in the restaurant. It is important to underscore that opportunity for agency should not be confused with agency per se, as agency, here, refers to the ability to decide and pursue a course of action given the constraints and opportunities captured by the 'opportunity for agency'. In the restaurant metaphor, agency is not the dishes available on the menu (opportunity for agency) but rather something that guides which dish to pick. Provided that the extent of loose coupling and the associated institutional blueprints, and goals and means are social phenomena, the opportunity for agency implies that agency is socially structured. A similar term that captures this notion of a socially situated agency, is the concept of 'bounded agency' (Evans 2002; Evans 2007; Shanahan 2000). This term is more often found in youth studies (Coffey and Farrugia 2014), but features in the life course literature as well (Hitlin and Elder 2006).

The term 'opportunity for agency' can be related to the idea of 'situational strength' found in the psychological literature (e.g. Cooper and Withey 2009; Johns 2006; Meyer, Dalal and Hermida 2010; Meyer et al. 2014; Meyer and Dalal 2009). Situational strength can be understood as "implicit or explicit cues provided by external entities regarding the desirability of potential behaviors" (Meyer, Dalal and Hermida 2010:122). Broadly speaking, any situation can be classified according to the degree to which they are weak, providing unclear and/or ambiguous cues for 'appropriate' behavior, or strong, providing clear and unambiguous cues. This has direct implications for the significance of personality variables, or agency: When situations are weak, it is hypothesized that there is greater room for personality variables. Strong situations are hypothesized to decrease the significance of personality in explaining behavior. Situational strength has been introduced as a contextual factor in psychology, as a possible explanation of the low explanatory value of personality traits for certain kinds of behavior (Cooper and Withey 2009; Meyer and Dalal 2009). Although discussing and operationalizing situational strength specifically for the organizational sciences, Meyer and colleagues (2010; 2014) go a long way in specifying a

concept that can also be used in more sociological studies. Where the aforementioned sociological literature has paid more attention to specifying the possible explanations for a varying opportunity for agency, e.g. due to loose coupling, the concept of situational strength explicates what opportunity for agency comprise of in a specific situation. The empirical attractiveness of situational strength will be discussed in more length in the 'empirical' section.

Further, adopting a life course or developmental perspective points toward the importance of recognizing how social structure and events during childhood or adolescent-years may shape the development of agency (Clausen 1991; Elder 1998; Gecas 2003; Schafer, Ferraro and Mustillo 2011). That is, the constructs used to operationalize agency, discussed in more detail later on, are themselves affected by structural conditions. For example, Clausen (1991) and Shanahan, Elder and Miech (1997) provide evidence suggesting that the family socioeconomic status of an individual shapes and influences the extent of his or her (adolescent) 'planfulness'. Moreover, there is some evidence that gender and age may affect the degree of self-efficacy (see Gecas 2003 for an overview), which is, as we shall see later, suggested as one measure of agency. The point to be made here concerns one implication of these findings. Provided that agency itself is dependent on other factors, and most crucially (structural) factors that sociologists generally would 'control' for, to what extent is agency independent of such factors? An alternative phrasing of this problem is that agency, given its structural determinants, may represent another type of the resources embedded in the social hierarchy constituting a 'class capital' (Coffey and Farrugia 2014:464), similar to e.g. financial, symbolic and educational capital. Agency, in this respect, can be envisioned as either a mediating factor between structural conditions and a specific outcome, or a spurious factor in explaining an outcome. Provided that valid indicators of both structure and agency exist or are found, this can be investigated empirically. Nevertheless, as will be clear in the following, agency may also affect the social structure and context, hence questioning the severity of the above focus.

Agency shaping structure. Turning to the possibility of agency affecting structure, one understanding of agency found in the life course literature is agency as opposing or "overcoming resistance" (Marshall 2005:64). That is, agency is exercised only if any given action is outside the habitual and norm-conforming course of action. Although agency is not defined as influencing structure per se, the 'resistance' understanding privileges the transformative potential of agency. Accordingly, agency is defined as being exercised if the

action(s) opposes the social structure, and is in a dialectic relationship with social structure. By performing such actions, the social structures that the individual react against may be altered subsequently (potentially) initiating social change. Academic work that purely subscribe to such a view has been criticized in field of youth studies (Raby 2005), noting that this view cannot capture those instances in which agency actually conforms to structure (c.f. Coffey and Farrugia 2014). One example of this are habitual responses, which would not be considered agency according to this view. Another problem with adopting the resistance and transformative view of agency, is that agency is easily confused with actions per se. As agency only 'takes place' in opposition to structure, agency is defined as a specific *set of actions*. With the aim of advancing agency as an explanation, this approach is clearly not fruitful. Agency is not a set of actions, it is rather a precursor or antecedent to actions. Put differently, agency has the potential to transform structure, in so far as it leads to actions opposing the 'established structure', but it *is* not those actions that are counter to the 'constraints' imposed by the social context.

Considered in a 'developmental' or life course perspective, one's agency at one point in time may affect the social structure or context in which an individual find his or her self at a later point in time. This notion is found in the literature in describing agency as a selection mechanism, in which individuals actively choose their social environment(s) (Marshall 2005:60-61). Moreover, in selection their social environments, individuals affect the social context in which they are situated at a later stage in life. This argument resembles the idea of life trajectories, in which there are certain tracks, trajectories, or patterns of movement or stability across the life course that individuals follow (Elder 1998). Unlike the transformative potential discussed above, in which the social structure per se may be altered and social change initiated by agency, this perspective does not implicate that the social structures themselves (necessarily) change, but merely that individuals may choose which 'set' of opportunity or constraints they confront during their life course. The implications of this view for applying agency in empirical studies are not directly discussed in the reviewed literature, but can and perhaps should be explored in future studies[1].

Interplay of structure and agency. The preceding should have made clear the dialectic relationship between agency and structure as discussed in the life course literature. Although

[1] The notion of agency as a selection mechanism may have implications for studies of cumulative advantage or disadvantage (see Dannefer 2003 for a discussion of cumulative dis/advantage in gerontology). This idea is not pursued further here, as the aim is rather to find appropriate operationalizations of agency.

the above has outlined the relationship as two separate approaches, the life course literature often formulates a middle ground, in which agency is situated within the social structure and context (Elder, Johnson and Crosnoe 2003; Settersten and Gannon 2005). Agency and structure is moreover regarded as separate entities (Eteläpelto et al. 2013), implying that, on the one hand, they are not the mere opposites of each other. On the other hand, the 'middle ground' formulation suggests that agency always takes place within a social context that influences it and the relationship between agency and structure should be viewed as an interplay. One addition to this, as discussed above, is how agency may in a long-term perspective also influence the social context in which it is situated. Where does this leave empirical research? Although addressed in more detail later on, one substantive implication for empirical research based on the foregoing is that the relationship between agency and structure should be carefully considered and modeled. This does not simply entail controlling for one or the other in a statistical analysis, but also taking into account possible interaction effects and the interplay between structure and agency.

2.2 Agency and Time

In providing a clear understanding of what agency actually is, the notable attempts at advancing agency for empirical research have included a description of the temporal dimension in fleshing out what agency comprises (Emirbayer and Mische 1998; Hitlin and Elder 2007). Two typologies are offered by Emirbayer and Mische (1998) and Hitlin and Elder (2007), respectively, that both draw upon the works of Mead (1932; 1938), and the symbolic interactionist perspective. This perspective provides the theoretical backdrop for implementing time in the understanding of human agency. Despite some differences between the typologies, most crucially in how the past is included[2], the following attempts at providing an unified account which glosses over their differences. In general, both typologies underscore the importance of including an actor's varying temporal dimension for understanding agency. Therefore, the following focuses on what the implications of this view for future studies. To complement the description below, the psychological social cognitive theory will be selectively incorporated (Bandura 1982; 1989; 1997; 2001; 2006). This theory has a tradition for operationalizing agency as self-efficacy, offering a valuable framework to anchor an empirical approach to agency.

[2]Another major difference is that Emirbayer and Mische's (1998) typology is more detailed in specifying the internal structure of the three main forms of agency. Given that the aim here is not to reiterate the complete typology but rather discuss the implication for empirical investigations by adopting the view of time, this internal structure will not be mentioned further.

In addition to incorporating time in the understanding of agency, both Emirbayer and Mische, and Hitlin and Elder's typologies contend that the situation in which the social actor is situated determines the temporal orientation of agency. These temporal orientations may in turn be further delineated, and are predominantly oriented toward the (1) past, (2) present and (3) future. Emirbayer and Mische (1998) terms these orientations as, respectively, the iterative, practical-evaluative, and projective elements of agency. Similarly, Hitlin and Elder (2007) distinguish between identity, pragmatic, and life-course agency. The two latter correspond to a present, and future time orientation respectively, whereas what is labeled identity agency seem to encompass an element of the past but is not explicitly labeled as such. Rather, identity agency is invoked in the routine and habitual situations. As the routine situations have been encountered previously by the actor, identity agency do encompass (at least partially) an element of the past.

The notions of iterative and identity agency are arguably of less interest for empirical research. One reason to include the past is that most actions are of a routine or habitual character (c.f. Hitlin and Elder 2007). This argument implies that agency should be able to account for the majority of actions, suggesting that overlooking the past element lowers the empirical 'fruitfulness' of agency as a concept. Yet, measuring the past would be equivalent to measuring the extent to which a person's response is habitual or norm conforming. Moreover, this could easily blur the distinction between structure and agency argued above and it is doubtful whether this would lead to any novel hypotheses from a sociological point of view. Sociologists regularly employ different norms and past experiences as an explanation to different outcomes and behaviors by groups, e.g. gender, social class and age.

The present and future elements of agency, however, seem more feasible for empirical investigation. First, the practical-evaluative and pragmatic concepts both entail the actors capacity to respond, make judgments, and decisions in situations which requires an immediate and emergent response within the flow of activities (Emirbayer and Mische 1998:971; Hitlin and Elder 2007:176-178). These are the situations in which a habitual response is not possible (Hitlin and Elder 2007), but the response in such situations are not completely random. The course of action decided upon, is argued to reflect (in part) the psychological traits (Hitlin and Elder 2007) and principles (Emirbayer and Mische 1998) of an actor.

Second, the future or projective and life course element of agency comprise (the selection of) an anticipated future trajectory that the actor seeks to realize and plan according to in the present moment (Emirbayer and Mische 1998; Hitlin and Elder 2007). The future

aspect of human agency is also proposed in the social cognitive theory under the term "forethought" (Bandura 2001; 2006). This form of agency relates specifically to the longer-term goals and life plans a social actor has, and can in this sense be seen as the (perceived) ability to formulate and pursue life plans (Hitlin and Elder 2007). Importantly, these future goals and plans can affect the present behavior of an actor as these are formulated and 'imagined' in the present (Bandura 1997; Bandura 2001; Bandura 2006). In these formulations, the concept of (life course) agency resembles the psychological 'image theory' (Beach and Mitchell 1987). In this theory, the actor is viewed as making decisions based on four different images, namely the self, action, trajectory and projected image, described as principles, plans or tactics, goals and anticipated states and events respectively. As this theory is more concerned with explicating the actual decision making process, whether to adopt a goal and the progression towards that goal, it is of limited usefulness in more sociological studies. One insight that can be drawn, however, is the clear distinction made between the different kinds of images and the pivotal role given to these in guiding an actor's decision making.

Up to now, the temporal dimensions have been discussed without mentioning how they may be related. Given the aforementioned arguments for the relative unsuitableness of the past temporal dimension for future studies, its relation to the present and future temporal dimension is not discussed. The present and future temporal dimension may be related, when, for example, a decision made with a predominantly present focus may turn out to have longer term consequences (Hitlin and Elder 2007). Similar to the agency-structure discussion above, it is possible to envision the relationship as the present related to the future and the future related to the past. Toward clarifying these two points of view, Emirbayer and Mische (1998:990, 998) proposes separate analytical categories, experimental enactment and deliberation, which, respectively, label the present-future and future-present. The aim here is not to elaborate on these, but rather point to one possible empirical implication. Provided that the present and future temporal orientation is related, it is necessary to model both dimensions in any empirical investigation. Including both dimensions gives the researcher the ability to lay out a conceptually congruent model of agency, and can draw valid conclusions regarding its effects. For example, research on an individual's time perspective has suggested that a balanced time perspective, in which the individual is able to simultaneously hold several temporal perspectives, is associated with positive outcomes (Drake et al. 2008; Gupta, Hershey and Gaur 2012; Zimbardo and Boyd 1999). The specific concept of a balanced time perspective will be further detailed later on, but may point to the significance of considering

the combination of an agent's temporal perspectives rather than only considering one temporal perspective.

The specific situation is given a significant role in shaping agency and its temporal dimension (Emirbayer and Mische 1998), as should be clear from the above discussion. In turn, this may have implications for the situational strength concept. Although it is described as relating to the strength, understood as the clarity and unambiguousness of which norms and rules to follow in a given situation, an alternative dimensions of the situation may be the extent to which it 'induces' either a past/routine, present or future temporal orientation. This is a point that is not discussed in the existing literature, but may be promising in unraveling the contextual factors behind temporal dimensions.

2.3 Agency as a Variable

In reviewing the various conceptions of agency, Marshall (2005) raises an important question that has remained implicit until now: Is agency correctly viewed as a variable or as a fundamental, universal human capacity? The aim of this section is to discuss these two understandings of agency, and suggest an answer to this question.

The attempts to provide terminological clarity to the concept of agency stresses one crucial distinction (Campbell 2009; Hitlin and Elder 2006; Hitlin and Elder 2007; Hitlin and Long 2009; Marshall 2005). On the one hand, agency may be understood as the fundamental capacity of all humans to be self-reflective, initiate their own actions, and consequently influence their own lives. This understanding of agency is referred to as an objective capacity (Hitlin and Long 2009), existential agency (Hitlin and Elder 2006; Hitlin and Elder 2007), agency as a capacity (Marshall 2005), and the power of agency (Campbell 2009), all capturing the same notion, and henceforth referred to as 'existential agency'.

On the other hand, and one of the core premises of this review, agency can be viewed as an empirically measurable concept that individuals vary in (Eteläpelto et al. 2013; Hitlin and Elder 2006; Hitlin and Elder 2007; Hitlin and Long 2009; Marshall 2005; Settersten and Gannon 2005). Specifically, this view entails measuring the perceptions and beliefs about the ability to influence one's own life. Given the existential agency and the human capacity to take decisions that influence's one's own life, individuals may vary in their perception and belief in doing so. Following Bandura (1997), who argued that the magnitude of such beliefs are an important prerequisite for actually initiating the action's required to influence one's life, these beliefs should have an effect on actual behavior. Marshall (2005) argues that this conceptualization of agency is better labeled an asset or a resource, and not agency proper,

implying that people have more or less of these abilities in which they can draw upon in order to attain a certain outcome. In this view, the ability definition above is better labeled a resource than agency proper. One clarification to the 'resource' understanding, given the previous discussions, should be noted. Resources are typically understood as something that structures the available courses of action, what I term the opportunity for agency, whereas agency as a variable refers to a person's beliefs in his or her ability to choose among these available options. Arguably, it is only when taking into account the longer-term life course of an individual that agency may represent a resource. In this view, agency represents a resource in so far as it affects behavior at one point in time and may in turn affect the subsequent opportunity for agency and the social context in which the person finds his or her self.

Given that agency is understood as a variable, a related issue is the validity of a subjective versus objective measure of this variable. Marshall (2005) argues that these subjective beliefs do not necessarily capture the objective ability to influence one's life, but rather captures the awareness of these abilities. Hence, it is suggested that the ability may have an effect on one's life despite low awareness of or without knowing about one's ability to do so. Conversely, and reiterating Bandura's (1997) argument from above, these beliefs may be crucial antecedents of actual behavior, and without the awareness of such abilities the actions that produce such change are not likely to be initiated. A person with low agency, in the sense of a low belief in his or her ability to influence one's life, would not have the 'objective ability' as well as the actions would not be initiated. Following this line of reasoning entails perceiving the subjective beliefs as a necessary pre-condition for objectively having the ability to influence one's life. The implication being that finding objective measures of the ability to influence one's life is not necessary for an empirical approach to agency.

To answer the question of what is the 'correct' understanding of agency, there is arguably no dualism. The two, i.e. agency as a universal capacity and agency as a variable, can be viewed in one framework (Hitlin and Elder 2007). In this sense, the fundamental capacity for agency may be understood as underpinning the temporally distinct types of agency, e.g. pragmatic and life course agency. In turn, these temporally distinct categories of agency are considered as variables, and individuals may vary in their ability to shift between or take on these temporal perspectives in a given situation. As for future research, it is necessary to be clear in which kind of agency that is discussed: The variable or the universal capacity. Agency is, naturally, considered as a variable in the later discussion on how to operationalize it.

2.4 Domain Specific Agency?

In the life course literature, there are understandings of agency that specifically include life plans and goal setting. One prime example is found in the notion of planful competence (Clausen 1991; Elder 1994), discussed in detail later on, which is defined as a person's ability to formulate and stick to advantageous life plans (Hitlin and Elder 2006). By formulating agency along these terms, it begs the question of whether agency is a general or domains-specific concept. Put differently, do the beliefs about the ability to influence one's life vary according to the particular social domain in question, or can the researcher identify a general and stable belief across and partially independent of life domains? This question has not been an explicit one in the life course literature and is perhaps best addressed empirically. Nevertheless, it is a question that deserves some attention prior to the following empirical section due to its direct implications for the operationalization of agency.

Despite the lack of explicit discussion, implicit treatment of the question can be located in the literature. In their elaboration on life course agency, Hitlin and Elder (2007:183) recognized, on the one hand, that individuals plan differently and with different time perspectives in mind for different life domains. Yet, contended on the other hand that the concept should be retained in its broader sense, and be applicable across life domains. That is, life course agency is a general ability to formulate and pursue life plans. Conversely, Hitlin and Long (2009:139) seem to recognize agency as a variable that varies "within the same individual based on age or context", where context refers to life domains such as work and family.

Turning to the social cognitive theory, in which human agency is operationalized as self-efficacy, there is a tradition to conceive self-efficacy as a domain specific and, explicitly, not as a general belief (Bandura 1997:36; Hitlin and Long 2009:143). This does not mean, however, that there are no measures to assess a general self-efficacy belief (Bosscher and Smit 1998; Chen, Gully and Eden 2001; Sherer et al. 1982). Accordingly, Chen, Gully and Eden (2001:62-63) have argued that the task- or domain-specific operationalization of self-efficacy is too narrow, and moreover argue that the social cognitive theory support a general understanding of self-efficacy as well as the more specific measures.

Thus, the above yield few substantive arguments, other than mere 'preferences', for one approach over the other. However, two arguments can be put forth in support of the general and domain-specific approaches respectively. On the one hand, general measures would make it relatively easier for future research to compare and accumulate the effects of

agency across diverse sets of life domains. If the operationalization of agency were to depend on the specific domain studied, the overall effect of agency would be less clear. On the other hand, a general measure may not be an empirical valid one. Or put differently, can we assume that individuals have a general perception of their ability to execute and formulate life plans? Given that life plans necessarily are domain-specific, individuals would develop their general sense from experiences within a specific domain. In this sense, a more viable approach can be to measure the perceived ability to formulate and pursue life plans within specific life domains, e.g. work and family, and from these identify agency in a formative manner. In the end, only empirical investigations can shed light on this question and provide definite answers to the empirical validity of general versus domain-specific measures of agency. Another point, left untouched here, is which life domains to consider. Certainly, the range of domains that can be studied, in the sense that the individuals actively plan for these, is not properly addressed in the existing literature.

3. A Guide For Operationalizing Agency

The previous sections lead to three questions that should be considered when seeking to operationalize and find appropriate measures for agency. First, given that agency can be and has been viewed as a variable, the central questions that should be answered is: *How is agency defined?* Naturally, any operationalization of any concept must begin with a clear and explicit definition. If this is not specified, the connection between the theoretical notion and empirical measure(s) of agency becomes less clear. Moreover, a clear definition of agency in particular is necessary because of the myriad of ways it has been understood. Here, a general definition will be provided, but the following discussion of measures of agency will take into account other possible measures as well.

Second, individual-level measures may provide a fruitful lens through which to understand the present temporal dimension of agency (Hitlin and Elder 2007). Reference has already been made to self-efficacy as one measure that has both been suggested and used to operationalize agency (Bandura 1997; Hitlin and Elder 2006; Hitlin and Long 2009). Self-efficacy, however, falls into a broader category of concepts called measures of control (Haidt and Rodin 1999; Skinner 1996), that may serve as a useful group from which to find appropriate measures of agency. In making the connection between agency and measures of control, it is necessary to explicitly employ a framework that can guide such an endeavor. Toward that aim, Skinner (1996) proposed an integrative framework to organize the

heterogeneous group of constructs related to control. The typology is based on the idea that an understanding of everyday accounts of actions involve an understanding of the relations among agents, means (or causes), and ends (or goal-related outcomes) (Skinner, Chapman and Baltes 1988). They argue the distinction among agents, means, and ends is especially useful in the analysis of different constructs of control proper. Some constructs refer to the agent-means relation, some to the means-ends relation, and yet others refer to the agent-ends relation (Skinner 1996:552). In a similar vein, I suggest that most of the definitions of agency in the life course literature also may refer to either one of these three relations. Consequently, which connection the definition of agency refers to should correspond to the measure of control used to operationalize it. As previously explained, this point has not been properly addressed in the existing literature that either suggest measures to operationalize agency (Hitlin and Long 2009) or test an empirical model of agency (Hitlin and Elder 2006). Hence the second question: *How does the definition of agency relate to measures of control?*

Third, a pivotal role has been given to the temporal dimension in order to understand agency (Bandura 2006; Emirbayer and Mische 1998; Hitlin and Elder 2007). And in explaining an actor's behavior and outcomes over the life course, it is perhaps logical that the feelings, beliefs, and thoughts he or she has for the future may influence the life course. Naturally, an actor's sense of agency at one point in time may be influenced by the his or her perceptions about past events and experiences. Yet, as have been suggested above, these perceptions are in sociology typically assumed to be captured by the 'social structures', or, perhaps more accurately, the groups or categories to which a person has belonged in the past. As such, including the past when measuring agency may easily conflate the distinction between structure and agency. Nevertheless, one of the temporal measures proposed includes a subscale that captures the past temporal orientation. This may allow for an empirical test of the argument above. Although deemed unlikely given the existing literature, a definition of agency may also not be explicit in referring to a or several temporal orientation(s). The implication of this possibility is also explored in the following. Therefore, the third question is: *To what extent is time integral to the understanding of agency?*

The three proposed questions will be discussed in turn, suggesting specific constructs and scales to measure a particular dimension of agency. Additionally, the theoretical discussion in chapter 2 proposed two other concepts that do not fall under any of the three questions, namely 'planful competence' and 'situational strength'. The relevance of these concepts for an empirical investigation of agency is addressed in a separate section. All of the concepts and accompanying scales are discussed with the aim of including these in surveys.

A collection of the specific survey items related to each discussed construct appears in the appendix.

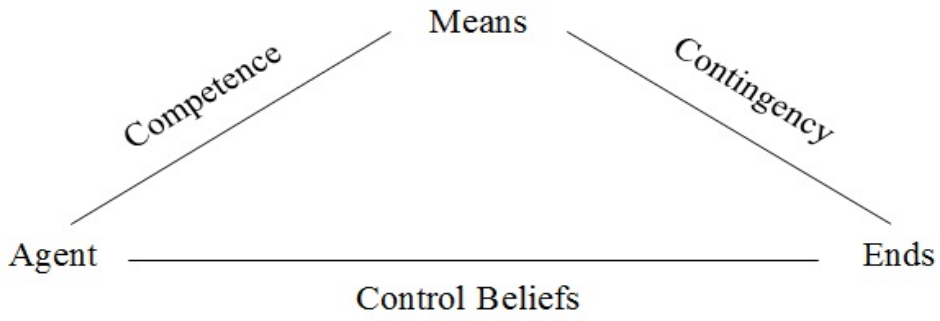
3.1 How Is Agency Defined?

The definition suggested in the introduction, namely "agency as the ability to influence one's life" (Mortimer and Shanahan 2003), is, after the foregoing conceptual discussion, in need of a slight modification. In maintaining the distinction between existential agency as a fundamental capacity all humans have, and the other, variable forms of agency, agency as a variable is perhaps more precisely defined as: '*The individual's belief in his or her ability to influence his or her life course*'. This definition is intentionally broad, allowing for both a multidimensional operationalization and a general, rather than domain-specific, measure, but, arguably, still empirically tangible. It entails both an individual self-belief, which individuals may vary in, and the individual's temporal perspective. This temporal perspective may be either retrospective or prospective, and concerns a belief in whether a person's life course has been or will be influenced in the future.

3.2 How Does the Definition of Agency Relate to Measures of Control?

As mentioned, the various measures of control may be grouped according to whether they pertain to either the agent-means, means-ends, or agent-ends relation (Skinner 1996). Separately defined, agents are what in sociology are more commonly referred to as the actor, or in this case the entity, individual or group, who exercise control; ends are defined as the desired or undesired outcomes over which control is exercised; means are defined as the ways through which control is exercised. Thus, the agent-means relation refers to "the extent to which a potential means is available to a particular agent" (Skinner 1996:553), the means-ends pertain to "the connection between particular classes of potential causes and desired and undesired outcomes" (Skinner 1996:552), and agent-ends is the connection between individuals and outcomes. The agent-means and means-ends relation may, respectively, be termed as competence and contingency, whereas the agent-ends relation is considered control proper. In Skinner's typology, the prototypical definition of control should refer to " (…) the self as agent, the self's actions or behaviors as the means, and an effected change in the social or physical environment as the outcome" (1996:558). Figure 1 gives a graphical presentation of the control typology.

Figure 1. A visual representation of the relations measures of control can refer to, following Skinner (1996).



Worth noting, however, is that Skinner's 'ideal' definition of control should not determine the definition of agency. The definition of agency should be arrived at independently, grounded in the (sociological) life course literature that discusses it, and then analyzed in relation to the control typology. Thus, it is the definition of agency that determines the measure of control, and not the other way around. As an example, the previously mentioned definition of agency is arguably best reflected by the agent-ends connection. It refers to the individual as an agent, and whether that individual believe that he or she is able to influence one's own life being the end. The following, however, adopts a general approach and describes concepts and measures suitable to operationalize any of the aforementioned connections.

First, if the definition of agency refers to the agent – means relation, one frequently used measure is self-efficacy (Bandura 1977; 1982; 1989; 1997; 2006). In Bandura's social cognitive theory, an explicit distinction is made between, on the one hand, efficacy expectations, corresponding to the notion of competence, and, on the other hand, outcome expectations, representing the notion of contingency (Bandura 1997:20; Skinner 1996). Self-efficacy is a measure of the former, and is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura 1997:3). It should be noted, however, that some definitions of self-efficacy (see e.g. Bandura 1989) capture the agent-ends rather than the agent-means relation. Considering the most widely used scales to operationalize self-efficacy, however, they seem to only measure the competence dimension. Some examples of these measures are listed in Appendix A. Therefore, self-efficacy is here considered as a measure of competence. Another point regarding the construct of self-efficacy is that is originally understood as a domain-specific rather than a general measure (Bandura 1997; Haidt and Rodin 1999; Hitlin and Long 2009). Despite this, there are quite some studies that conceive self-efficacy as a general self-belief,

and accordingly employ general scales. To my knowledge, there seems to be two main general self-efficacy scales in the existing literature. One based on Schwarzer and Jerusalem (1995)[3], and another set of scales that draws on Sherer and colleagues' original version (Bosscher and Smit 1998; Chen, Gully and Eden 2001; Sherer et al. 1982). There are existing, validated Dutch versions of both scales, and the choice between the two is somewhat arbitrary. However, one advantage with the Sherer et al. (1982) scale, and the later revised and shortened version (Bosscher and Smit 1998), is that it clearly distinguishes between three different subscales of self-efficacy, namely initiative, effort, and persistence. These subscales are conceptually more in line with Bandura's description of self-efficacy (e.g. Bandura 1997:3). Moreover, the Bosscher and Smit (1998) measure has been successfully used in the Longitudinal Aging Study Amsterdam (LASA) of individuals aged 55 years or older in Amsterdam,[4] demonstrating its validity among the older Dutch population.

Second, one applicable construct, if the definition of agency pertains to the means-ends dimension, is 'locus of control' (Rotter 1966; Valecha and Ostrom 1974). Locus of control can be defined as the degree to which one believes that the events in one's life are caused by one's own behavior or controlled by external parties[5] (Levenson 1974; Rotter 1966; Valecha and Ostrom 1974). A possible drawback with employing locus of control is that, to my knowledge, there exist no shorter scales than the eleven item one proposed by Valecha and Ostrom (1974) (see Presson, Clark and Benassi 1997 for an assesment of Levenson's scale). In discussing locus of control as a suitable sociological variable, however, Hitlin and Long (2009) note that due to the focus on motivational aspects, locus of control is less feasible for sociological inquires. Yet, of the possible variables suggested by them, none of the other ones capture the means-ends connection. Thus, to operationalize the extent of contingency locus of control seem like the most appropriate construct given its wide use.

Third, there are two possible approaches to operationalize the agent-ends connection. On the one hand, two separate constructs, that each capture an individual's competence and contingency beliefs, can be employed. For example, the two constructs suggested above, self-efficacy and locus of control, could both be measured. Specifically, this approach would entail capturing the agent-ends connection by referring to its two 'constituents'. And in

[3] More resources and translations of this version of the scale can be found here: http://userpage.fu-berlin.de/~health/selfscal.htm
[4] See http://www.lasa-vu.nl/index_ned.htm for more information on documentation and questionnaire items.
[5] Note that in some definitions of locus of control, external entities are further divided into powerful others and fate or chance (see Levenson 1974)

empirical terms, agency would necessarily be identified either as a second order latent variable, or using these as separate indicators in the analysis. Summing the two separate constructs into one variable would not be feasible as these are separate constructs.

On the other hand, a second approach may entail employing a construct that captures the agent-ends connection in one measure. Two concepts that may be applied in this regard are mastery (Pearlin et al. 2007; Pearlin and Schooler 1978; Pudrovska et al. 2005) and personal control (Mirowsky and Ross 1991). The scales associated with these constructs are relatively short, ranging from five to eight items. Moreover, their definitions resemble the above proposed definition of agency, in that they stress the individual belief in the degree to which their lives can be directed and influenced by themselves (see Hitlin and Long 2009:142). One slight advantage with the mastery scale is that it has been used in the LASA, demonstrating its validity among the older Dutch population.[6]

3.3 To What Extent Is Time Included in the Definition?

The first possibility is that time and different temporal perspectives[7] are not explicit in the definition of agency. Although this would be an alien approach in a life course framework, given the theoretical discussion above, it is nevertheless a possibility. If time is not included in the definition of agency, then only a measure of control is necessary to operationalize it. Hence, the concept is a-temporal. One example of such a definition is the one provided by Mortimer and Shanahan (2003), defining agency as the ability to influence one's life. Here, no explicit reference is made to the actor's temporal dimension, but the 'ability' may entail a sense of the future as well. Nevertheless, given the unclear reference to an actor's temporal perspective, it is not necessary to include a measure of it.

Conversely, if the understanding of agency prompts an empirical assessment of different temporal perspectives, there are two viable strategies. The first strategy is to administer different temporal 'phrasings' of the appropriate measure of control. This approach rests on the assumption that any control measure, and its associated set of items, can be modified to capture a sense of the future and/or past (Skinner 1996), provided that the 'current' scale is phrased in a time neutral or presented-oriented manner. One example of this approach can be found in Pearlin et al. (2007). Here, both retrospective and present focused sets of items measuring mastery are employed, where the former is an alternative phrasing of

[6] See http://www.lasa-vu.nl/themes/emotional/persoonlijkheid_beheersingsorienatie.html for more details.
[7] Note that the term 'temporal perspective' is used to refer to all the different measures of an individual's subjective sense of time. Hence, the time concepts discussed in here can be sorted under this umbrella term (Shipp, Edwards and Lambert 2009).

the time-neutral and, in this case, explicitly present focused set of items. In practical terms, this would imply that the researcher operates with a retrospective, present, or future control measure, depending of course on the specific temporal perspectives referred to in the definition of agency.

A second strategy is to use a separate measure of temporal perspective. One example of this can be found in Hitlin and Elder (2006) and Schafer, Ferraro and Mustillo (2011), who employ optimism as a measure of the individual's subjective orientation and focus toward the future. Both suggest that having a positive sense about the future is an important precursor to engaging in actions that will lead to positive outcomes in the future. Optimism is but one possible measure to capture an individual's (future) temporal perspective. Although capturing some cognitive aspects, optimism is more clearly related to an individual's degree of positive feelings toward the future. Hence, it may be worthwhile to suggest other measures that to a greater extent tap the cognitive dimension of a future time perspective. This is not to say that the feelings about the future are less important, but it is assumed that a lack of optimism lead some degree of fatalism and hopelessness about the future. In turn, fatalism and hopelessness may lead to inadequate actions taken for the future. For a (sociological) life course approach, it may be more preferable to avoid these types of rationales and opt for 'simpler' assumptions. Therefore, the following will consider three other possible constructs: Temporal focus (Shipp, Edwards and Lambert 2009), future time perspective (Hershey et al. 2007; Hershey and Mowen 2000; Koposko and Hershey in press), and balanced time perspective (Webster 2011; Webster, Bohlmeijer and Westerhof 2014; Webster and Ma 2013). These constructs are designed to (among others) tap the cognitive dimension, and a lower score on e.g. the orientation toward the future would imply that an individual does not think about and hence does not plan and engage in actions for the future.

Temporal focus is defined as: " (…) the allocation of attention toward the past, present, and future" (Shipp, Edwards and Lambert 2009:2)[8]. These three focuses are measured separately by a subscale, and it is assumed that an individual may shift their attention and hence hold a 'combination' of focuses. Similarly, the balanced time perspective is defined as the degree to which an individual frequently think about both the past and the future in a positive way (Webster 2011). Holding a balanced time perspective also implies that an individual is able to shift between a past and a future time perspective (Drake et al.

[8] Note that the time orientation could also be mentioned in this regard (see Holamn and Silver 1998; Zimbardo and Boyd 1999). As construct assume that individuals are predominantly oriented toward either the past, present, or future, rather than allowing for a combination of these, temporal focus is preferred and presented instead.

2008; Gupta, Hershey and Gaur 2012; Webster 2011; Zimbardo and Boyd 1999). It should be noted that the operationalization of a balanced time perspective only employ a past and future time perspective subscale, and does not capture a focus on the present. The assumption that individuals are able to shift temporal perspectives seem in line with the previous conceptualization of agency's temporal dimension being directed by the specific situation (Emirbayer and Mische 1998; Hitlin and Elder 2007). Asserting that a situation can direct an individual's temporal perspective further entails an individual ability to shift between these perspectives. Temporal focus and balanced time perspective are both concepts that consider this as a variable, assuming that some individuals are capable of shifting whereas others may exhibit a predominant focus toward either the past, present or future. The specific situations a person encounter are given a pivotal role in this regard, underlying the time perspective an individual has.

Temporal focus is appropriate for operationalizing all of the possible temporal perspectives an individual may hold. But, the definition of agency, as well as the accompanying theoretical discussion, may only require a measure of the individual's sense of the future. In this case, the future time perspective may also be considered. This construct has been successfully employed in previous retirement research, and has for example been found to be associated with higher levels of financial preparedness for retirement (Hershey et al. 2007; Hershey and Mowen 2000).

3.4 Planful Competence and Situational Strength

Besides the measures discussed above that are more directly related to agency, two other concepts should also be addressed: Planful competence and situational strength. First, 'planful competence' has been discussed in the life course literature as a component of an individual's level of agency (Clausen 1991; Elder 1974; Elder 1994; Marshall 2005; Shanahan 2000; Shanahan, Elder and Miech 1997). The term itself, also referred to as 'planfulness', can be defined as " (…) the thoughtful, assertive, and self-controlled process that underlie one's choices about institutional involvements and interpersonal relationships" (Shanahan 2000:675). Despite the wide association between planful competence and agency, Hitlin and Elder (2006:41-42) argue that it represents a trait that aids the individual in successfully exercising agency over the life course. Importantly, it is not agency proper. This view is reflected in their empirical approach, which employs planful competence as a predictor of agency, whereas self-efficacy and optimism are concepts that directly indicate an individual's agency. Given the definition of agency as a belief, and not a trait, planful

competence is clearly not itself an indicator of agency. Further, planful competence is quite closely related with an individual's degree of rational decision making. As rational action theory has a long tradition within sociology, any study that employs a measure of an actor's planfulness should clarify the relation with such actor theories.

Second, situational strength is here proposed to provide a useful lens through which to understand the specific situation in which an individual is situated. As previously mentioned, the concept can be defined as the extent to which norms are clear or unclear in stipulating the desirability or undesirability of certain behaviors (Meyer, Dalal and Hermida 2010). Four dimensions are identified that together determine the situational strength: Clarity, consistency, constraints and consequences (Meyer et al. 2014). In this sense, it may be used as to operationalize the opportunity for agency in a given situation, and thus specify the conditions under which agency is hypothesized to be relatively more (or less) important in explaining an outcome. The concept is, to my knowledge, not mentioned in the life course literature, and has remained relatively untouched in the psychological literature until recent (see Cooper and Withey 2009; Johns 2006; Meyer, Dalal and Hermida 2010; Meyer and Dalal 2009 for overviews). This is also reflected in that only a single study actually attempts to operationalize situational strength (Meyer et al. 2014). Hence, scholars interested in employing this concept to the study of retirement would first of all need to develop items that are more applicable for this area. The currently proposed measure is arguably too domain-specific in its focus on the organizational context. Another, and perhaps more important point to consider, is that the relationship to other concept, such as autonomy, is not well specified. In order to develop situational strength as an independent construct, engaging with the array of existing measure of occupational characteristics is necessary. In the retirement context, another question is which situation or context the situations should pertain to. For example, the employer or organizational context may affect retirement timing, as well as the general legal arrangements in the country in question. Both of these may be more or less clear, consistent (both internally and with each other), provide a different set of constraints and imply different consequences. One suggestion is to formulate general items that capture a general sense of the situational strength regarding e.g. when to retire.

4. Conclusion

The aim of this review has been to explore agency as a concept suitable for empirical analysis for the study of the life course in general, and retirement research in particular. In so doing,

conceptual aspects and specific empirical measures have been discussed in turn. The theoretical discussion provided an overview of the relation between agency and structure, agency and temporal dimensions, whether agency can be viewed as a variable or a universal capacity, and, last, the generality versus domain-specificity of agency. In turn, this overview informed the discussion of the proposed empirical assessment of agency. To summarize, the previous discussion have yielded four main points regarding the operationalization of agency. All of these points should have implications for future empirical studies seeking to apply agency in the explanation of a social phenomenon.

First, the relationship between structure and agency can be clarified by distinguishing between, on the one hand, the opportunity for agency that captures the social context's influence on agency. On the other hand, agency may have the *potential* to influence structure, reflected in the term the transformative potential of agency. Although these terms reflect two separate sides of the coin, most formulations of agency in the life course conceive agency as being situated within the social context and historical circumstances. In empirically examining the significance of the social context, situational strength is proposed as a specific operationalization. Although in need of some further work to make it appropriate for empirical use, and in particular for the study of retirement, it is useful in so far as it entails propositions for the specific conditions under which agency should be more or less important.

Second, the conceptual discussions of agency emphasize time and shifting temporal perspectives as a lens through which to understand agency. Besides highlighting the role of situations in directing the actor's temporal perspective, it sheds light on the actor's understanding of time as an important aspect of his or her perceived ability to influence one's life. Toward measuring this aspect, the few empirical studies available, and hence included in this review, have employed optimism. Here, two other concepts, temporal focus and future time perspective, have been suggested as being better measures of the temporal dimension.

Third, agency is both an universal capacity that all humans possess, captured by the term existential agency, and a variable defined here as *'the individual's belief in his or her ability to influence his or her life over the life course*'. Distinguishing between these two views on agency, allows for empirically approaching agency. Specifically, the variable may be empirically operationalized by either one of the here suggested measures of control according to the particular definition of agency the researcher adopts. The importance of linking the specific definition of agency to the appropriate measure of control is in this regard underscored. Table 1 gives a summary of the measures suggested to operationalize agency. Given the above stated definition, either mastery or sense of control in addition to a measure

of either prospective control or a separate measure of an actor's future time perspective. At this point, I cannot see any substantial arguments in favor of prospective control over a separate measure of temporal perspective, or vice versa. Hence, no specific preference is made for either approach to measure the temporal dimension of agency.

Table 1. Suggested measures for operationalizing agency. See appendix for specific scales.

Construct(s) of Agency / Measure of Control	Temporal dimension	
	No	Yes
Agent-Means	Self-Efficacy	Either (1) Prospective/Retrospective Measure of Control or (2) Temporal Focus/FTP/BTP + The Appropriate Measure of Control
Means-Ends	Locus of Control	
Agent-Ends	Sense of Control or Mastery	

Note: Specific survey items are listed in the appendix. FTP = Future Time Perspective, BTP = Balanced Time Perspective.

Last, whether or not agency should be measured in a general or domain-specific sense is an issue that has not been discussed in detail in the life course literature. It is contended here that the sociological conception of agency is more in favor of a general rather than a domain-specific concept. Hence, the empirical measure adopted, and also suggested here, should be of a general character.

In sum, the review provides an overview of agency as discussed in the life course literature. Some areas have already been suggested for future research to focus on, and the following highlights two of these. First, future research on agency would benefit from further developing situational strength in relation to agency. This may prove to be a valuable concept in understanding the relation between the (perceived) contextual factors and agency. Situational strength has originally been suggested as a means to understand under which conditions personality variables are relevant in explaining a behavioral outcome (Cooper and Withey 2009; Meyer and Dalal 2009). Similarly, the concept may operationalize the opportunity for agency consequently providing an empirical measure of the conditions under which an individual's agency is more or less relevant. In this regard, it is important to consider possible interaction effects, where for instance an individual with a high agency may respond differently to 'strong' situations than an individual with a low agency. This would better reflect the interplay between the two, and be more in line with the notion of agency as situated within social structure (e.g. Settersten and Gannon 2005).

Second, the approach adopted here underscores the importance of a clear and explicit link between the definition of agency and the measure(s) used to operationalize it. Rather than converging on a specific definition, the approach suggested here recognizes that agency may be defined in different ways. Within the life course research, Mortimer and Shanahan's (2003) definition of agency as the ability to exert influence on one's life is echoed (Hitlin and Elder 2006; Hitlin and Long 2009). Hence, the slightly modified definition presented in section three and the accompanying measures suggested to operationalize it, may guide future life course research on agency.

Appendix A: Measures of Control

SELF EFFICACY

Self-efficacy captures the agent-means connection according to Skinner's (1996) typology. Although self-efficacy has traditionally been measured in a domain-specific manner, but for reasons laid out in the main text here the general or global measures of self-efficacy are listed. There are two major scales to measure general self –efficacy; one based on Schwarzer and Jerusalem (1995); another based on Sherer et al. (1982).

The scale based on Schwarzer and Jerusalem (1995)[9] employs the following set of items:

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. I am certain that I can accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I can handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can find several solutions.
9. If I am in trouble, I can think of a good solution.
10. I can handle whatever comes my way.

The scale has the following response format: 1 = Not at all true, 2 = Hardly true, 3 = Moderately true, and 4 = Exactly true.
Chornbach's Alpha has been estimated to .85 in the Netherlands (Scholz et al. 2002:246).

The other set of scales are based on Sherer et al. (1982), and has been identified as comprising three subscales (Bosscher and Smit 1998): Intention, effort, and persistence. A shorter and validated version of the initial 17-item scale can be found in Bosscher and Smit (1998), who measure self-efficacy with the following set of items:

1. Initiative
   a. If something looks too complicated I will not even bother to try it
   b. I avoid trying to learn new things when they look too difficult
   c. When trying to learn something new, I soon give up if I am not initially successful
2. Effort
   a. When I make plans, I am certain I can make them work
   b. If I can't do a job the first time, I keep trying until I can
   c. When I have something unpleasant to do, I stick to it until I finish it
   d. When I decide to do something, I go right to work on it
   e. Failure just makes me try harder
3. Persistence
   a. When I set important goals for myself, I rarely achieve them
   b. I do not seem capable of dealing with most problems that come up in my life
   c. When unexpected problems occur, I don't handle them very well
   d. I feel insecure about my ability to do things

The response format is a five-point Likert scale.
For the total General Self-Efficacy Scale-12 Chronbach's alpha is .69 among the older Dutch population (Bosscher and Smit 1998). The specific subscales show a lower internal consistency, with a Chronbach's Alpha of .64 (both initiative and persistence) and .63 (effort).

[9] See http://userpage.fu-berlin.de/~health/selfscal.htm for more resources and translations of the scale.

An alternative to the above three subscale version have been proposed by Chen, Gully and Eden (2001). The scale consists of no subscales, and is specifically suggested for the organizational sciences:

1. I will be able to achieve most of the goals that I have set for myself.
2. When facing difficult tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain outcomes that are important to me.
4. I believe I can succeed at most any endeavor to which I set my mind.
5. I will be able to successfully overcome many challenges.
6. I am confident that I can perform effectively on many different tasks.
7. Compared to other people, I can do most tasks very well.
8. Even when things are tough, I can perform quite well.

Again, the response format is in a five-point Likert scale.
The Chronbach's alpha for this scale ranges from about .85 to .90 in various undergraduate and manager samples (Chen, Gully and Eden 2001).

LOCUS OF CONTROL

There are several scales that aim to measure locus of control, and these may diverge on the number and types of dimensions it comprises (Furnham and Steele 1993). The following scale is a revised 11-item version of Rotter's (1966) original 23-item Locus of Control Scale (see Valecha and Ostrom 1974; Valecha 1972 for psychometric properties):

Valecha (1972) employs the following set of items:

1. a. Many of the unhappy things in people's lives are partly due to bad luck
   b. People's misfortunes result from the mistakes they make.
2. a. In the long run, people get the respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
3. a. Without the right breaks, one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.
4. a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
   b. Getting a good job depends mainly on being in the right place at the right time.
5. a. What happens to me is my own doing.
   b. Sometimes I feel that I don't have enough control over the direction my life is taking.
6. a. When I make plans, I am almost certain that I can make them work.
   b. It is not always wise to plan too far ahead, because many things turn out to be a matter of good or bad fortune anyhow.
7. a. In my case, getting what I want has little or nothing to do with "luck".
   b. Many times we might just as well decide what to do by flipping a coin.
8. a. Who gets to be boss often depends on who was lucky enough to be in the right place first.
   b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.
9. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
   b. There is really no such thing as luck.
10. a. In the long run, the bad things that happen to us are balanced by the good ones.
    b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
11. a. Many times I feel that I have little influence over the things that happen to me.
    b. It is impossible for me to believe that chance or luck plays an important role in my life.

The items are presented in a forced-choice format, whereby the respondent is asked to choose the statement that he or she believes to be the case (Rotter 1966).
The version presented above includes an additional question in which the respondent is asked to

indicate to what extent the statement is (1) much closer or (2) slightly closer to his or her opinion (Valecha 1972:78, 135-137). This results in a fourfold scoring-schema, where 1 = internal & much closer, 2 = internal & slightly closer, 3 = external & slightly closer, and 4 = external & much closer, and the scale is constructed by summing the scores yielding a score range of 11 – 44.
The Chronbach's alpha is estimated to .66 in a representative sample of the US population (Valecha 1972). When the length of the test is increased to 22-items, the Chronbach's alpha increases considerably to .80, resembling more closely the original scale proposed by Rotter. Yet, it should be noted that the .66 coefficient alpha of the 11-item scale is comparable to the .70 estimated in Rotter's original 23-item scale. Hence, the 11-item version of the scale is a valid alternative to Rotter's 23-item scale.

MASTERY

Pearlin and Schooler (1978) originally proposed 7-items to measure mastery. More recently, however, a four item version of the scale has been suggested (Pearlin et al. 2007), as well as a five item version Pudrovska et al. (2005). It should also be noted that the LASA study previously employed a shorter version of the scale, whereas in the more recent waves, the longer, 7-item version is used. Exactly why this change in measurement occurred is not stated explicitly[10].

The following scale is the four item version proposed by Pearlin et al. (2007):

1. You have little control over the things that happen to you.
2. There is really no way you can solve some of the problems you have.
3. You often feel helpless in dealing with problems of life.
4. You can do just about anything you really set your mind to do.

The response categories range from 1 – strongly agree to 4 – strongly disagree.
The scale has a coefficient alpha of .67 in a sample of elderly in the US aged 65 and older.

Pudrovska et al. (2005) employed the following set of items to measure mastery:

1. You have little control of the things that happen to you
2. There is really no way you can solve some of the problems you have
3. You often feel helpless in dealing with problems of life
4. Sometimes you feel that you are being pushed around in life,
5. You can do just about anything you really set your mind to (R)

[10] See http://www.lasa-vu.nl/themes/emotional/persoonlijkheid_beheersingsorienatie.html for more details.

Response choices are (1) *strongly agree*, (2) *agree*, (3) *disagree*, and (4) *strongly disagree* .
This scale show a slightly better Chronbach's alpha (.72), than the Pearlin et al. (2007), in a sample of people aged 65 or older in the US.

SENSE OF CONTROL

Sense of control, also referred to as personal control, measure that has been proposed and applied in the work by e.g. Mirowsky and Ross (e.g. Mirowsky and Ross 1991; Mirowsky and Ross 1998; Mirowsky and Ross 2007; Ross and Mirowsky 1999; Ross and Mirowsky 2002). This line of research has shown how this concept is related to various (health-related) outcomes, and which demographic factors that may 'structure' the sense of control. The measure is here conceptualized to capture the agent-ends relation.

The measurement consists of the following eight items (Mirowsky and Ross 1991):

1. There's no sense planning a lot – if something good is going to happen, it will
2. The really good things that happen to me are mostly luck
3. I am responsible for my own successes
4. I can do just about anything I really set my mind to
5. Most of my problems are due to bad breaks
6. I have little control over the bad things that happen to me
7. My misfortunes are the result of mistakes I have made
8. I am responsible for my failures

The response categories range from +2 (strongly agree) to -2 (strongly disagree), do not know is coded 0.
The scale has been shown to have an internal consistency of .68 in a probability sample of US households (Ross and Mirowsky 1999).
The scale should be constructed like this: Given that the items are denoted x_1 to x_8, respectively, $E_G = (x_1 + x_2)$, $I_G = (x_3 + x_4)$, $E_B = (x_5 + x_6)$, $I_B = (x_7 + x_8)$. External Good (E_G) and External Bad (E_B) should load negatively on the latent variable, whereas Internal Good (I_G) and Internal Bad (I_B) should load positively. Further, claimInt = $(I_G + I_B)/2$, claimExt = $(E_G + E_B)/2$, Control = (claimInt – claimExt)/2. This should reflect the pure sense of control (+ random measurement error) of a respondent, controlling for potential defensiveness and agreement bias.

Appendix B: Measures of Temporal Dimension

RETROSPECTIVE MASTERY

Pearlin et al. (2007) employs two time-varying versions of mastery; labeled life course (retrospective) mastery and current mastery. Here, the former is presented to exemplify the approach of adopting the measure of control to include an understanding of time.

For the retrospective mastery measure, the following prompt and items are used:
"Here are statements about the control you had in the past years of your adult life. Please tell me how much you agree or disagree with them (strongly agree to strongly disagree). Looking back to the past, would you say that:

1. You had little control over the way things worked out in your personal life.
2. Your life has turned out to be different from what you had tried to make it.
3. Sometimes you feel that you were pushed around in your life.
4. Your life has taken directions over which you felt you had no control

The response format is in a four-point likert scale, with 1 – strongly agree to 4 – strongly disagree.

The scale show a Cronbach's alpha of .68, and is positively correlated with current mastery (r = .48), yet it is shown by means of factor analysis that retrospective and current mastery are separate factors.
Of relevance when employing a measure of both retrospective and current mastery, is how the prompts differs. Hence, the following prompt is given when measuring current mastery, directly following the items used to assess retrospective mastery: "Here are some statements similar to those that I just gave you, but they ask about your present life, not the past. Please listen to each statement and tell me how strongly you agree or disagree with each statement. In your present life: [Mastery items follow] " (Pearlin et al. 2007:171)

OPTIMISM

Optimism is one of the measures used to operationalize the temporal dimension of agency (Hitlin and Elder 2006). In the following, the set of items Hitlin and Edler (2006) uses, taken from the Add Health survey, and a measure of what in the literature on optimism is referred to as dispositional optimism (Scheier and Carver 1985) are presented. As will be clear from inspecting the survey items used by Hitlin and Edler, these seem more applicable for younger people. Hence, dispositional optimism is presented as an alternative.
The initial scale to measure optimism, the 8-item life orientation test (LOT), has later been revised (R-LOT) to six items (Scheier, Carver and Bridges 1994). As will be clear, the scale is employed with a set of four filler items, but applications without these are also found (e.g. Kim, Park and Peterson 2011). Moreover, there has been a discussion of the internal structure of the R-LOT scale, where recent evidence suggest that one half indicate optimism whereas the other three indicate pessimism (Herzberg, Glaesmer and Hoyer 2006; Kivimäki et al. 2005). A review and discussion of optimism can be found in Peterson (2000).

Hitlin and Elder (2006) uses the following set of items, found in the Add Health survey:

1. How likely is it that you will go to college? (.46)
2. How likely is it that you will live to age 35? (.39)
3. How often during the last week have you felt hopeful about the future? (.47)

The response format is a 5-point likert scale.
The coefficient alpha is not stated in the article, but the standardized factor loadings are provided in the parentheses.

Scheier, Carver and Bridges (1994) suggest the following set of items to measure optimism:

1. In uncertain times, I usually expect the best. (O)
2. *It's easy for me to relax. (FI)*
3. If something can go wrong for me it will. (P)
4. I'm always optimistic about my future. (O)
5. *I enjoy my friends a lot. (FI)*
6. *It's important for me to keep busy. (FI)*
7. I hardly ever expect things to go my way. (P)
8. *I don't get upset too easily. (FI)*
9. I rarely count on good things happening to me. (P)
10. Overall, I expect more good things to happen to me than bad. (O)

Note: *Italics* = Filler Items (FI), (P) = Pessimism, (O) = Optimism.

The response format is a 5-point liker scale.
In a large German sample, the Cronbachs alpha for optimism is found be .71 (Herzberg et al. 2006). The same study also finds that the initial negative correlation between optimism and pessimism of about -.38, is positively related to age. Hence, for people aged 18-24, the correlation is -.38, whereas for people aged 60-66 the correlation is not significantly different from zero. Hence, optimism and pessimism become increasingly independent with increasing age.

TEMPORAL FOCUS

The measure of temporal focus comprises three subscales, each measuring the past, present and future focus of an individual. To reiterate the above discussion, whether to include all time focuses or not is determined by the conceptual discussion and definition of agency.

Shipp, Edwards and Lambert (2009) measured and validated temporal focus with the following set of items:

1. Past focus
   a. I replay memories of the past in my mind
   b. I reflect on what has happened in my life
   c. I think about things from my past
   d. I think back to my earlier days
2. Current focus
   a. I focus on what is currently happening in my life
   b. My mind is on the here and now
   c. I think about where I am today
   d. I live my life in the present
3. Future focus
   a. I think about what my future has in store
   b. I think about times to come
   c. I focus on my future
   d. I imagine what tomorrow will bring for me

The response to the items range from 1 = never; 3 = sometimes; 5 = frequently; 7 = constantly, reflecting the degree to which the respondent thought about the time frame indicated by the item. Note that the items were not ordered in the way described above, but rather mixed up to prevent various response biases.
The Chronbach's alphas for the subscales are good, ranging from .74 to .90 in different US samples but showing the highest alpha in larger, presumably more representative samples (Shipp, Edwards and Lambert 2009).

FUTURE TIME PERSPECTIVE

There exist several versions of items used to measure future time perspective. Here, the newest set of items is presented (Koposko and Hershey in press), originally based on Zimbardo and Boyd (1999) measure of future time perspective and later modified in Hershey and Mowen (2000) and Hershey et al. (2007). The attractive feature with the future time perspective measure is that they have been developed within retirement research specifically and has been shown to be relevant for financial behavior in relation to retirement. For an assessment of demographic indicators, see Padawer et al. (2007).

Koposko and Hershey (in press) employs the following set of items:

1. I enjoy thinking about how I will live years from now in the future.
2. I like to reflect on what the future will hold.
3. I look forward to life in the distant future.
4. It is important to take a long-term perspective on life.
5. My close friends would describe me as future oriented.

The response format is a 5-point Likert scale.
Compared to the previous versions of the scale (Hershey et al. 2007; Hershey and Mowen 2000), this one shows a good coefficient alpha level (.89).

Appendix C: Other Concepts

PLANFUL COMPETENCE

Originally, planful competence was assessed using the Q-sort method with a group of professionals assessing and determining the respondents degree of planfulness (Clausen 1991). For several reasons, particularly the costs, this way of measuring planfulness is unsuitable for most studies making use of comprehensive surveys. Therefore, the suggested measure is a set of items found in the Add Health study, and which has been used by Hitlin and Elder (2006) to identify the latent variable planful competence. It is important, again, to underscore that planful competence itself has a conflicting relation to agency in the literature, as discussed in the main text.

The following items are used in the Add Health study (Hitlin and Elder 2006):

1. When you have a problem to solve, one of the first things you do is get as many facts about the problem as possible (.68).
2. When you are attempting to find a solution to a problem, you usually try to think of as many different ways to approach the problem as possible (.72).
3. When making decisions, you generally use a systematic method for judging and comparing alternatives (.60).
4. After carrying out a solution to a problem, you usually try to analyze what went right and what went wrong (.55).

The response format is a five-point likert scale, from 1 – strongly agree to 5 – strongly disagree.
The standardized factor loadings are shown in parentheses, as the coefficient alpha is not provided. Note that Hitlin and Elder (2006) correlate the errors of the first two items, but do not reflect on why the errors of these items may be correlated.

SITUATIONAL STRENGTH

Situational strength is a concept that has largely remained a conceptual and theoretical concept within psychology. Currently, only one set of items exist that measures situational strength (Meyer et al. 2014). As is clear from the phrasing of these survey items, the measure is designed for use in the organizational sciences. Hence, the items should be rephrased when applied in the study of the late life course. Moreover, the concept is argued to contain four dimensions, which are reflected in the below scale. But there is an apparent discrepancy in the conceptualization of the last dimension, in which some scholars suggest that skills (see Cooper and Withey 2009), and not consequences, comprise the fourth dimension.

The following set of items are used to measure situational strength (Meyer et al. 2014):

1. Clarity ($\alpha = .95$)
   a. On this job, specific information about work-related responsibilities is provided.
   b. On this job, easy-to-understand information is provided about work requirements.
   c. On this job, straightforward information is provided about what an employee needs to do to succeed.
   d. On this job, an employee is told exactly what to expect.
   e. On this job, precise information is provided about how to properly do one's job.
   f. On this job, specific information is provided about which tasks to complete.
   g. On this job, an employee is told exactly what is expected from him/her.
2. Consistency ($\alpha = .90$)
   a. On this job, different sources of work information are always consistent with each other.
   b. On this job, responsibilities are compatible with each other.
   c. On this job, all requirements are highly compatible with each other.
   d. On this job, procedures remain completely consistent over time.

e. On this job, supervisor instructions match the organization's official policies.
f. On this job, informal guidance typically matches official policies.
g. On this job, information is generally the same, no matter who provides it.

3. Constraints (α = .89)
   a. On this job, an employee is prevented from making his/her own decisions.
   b. On this job, constraints prevent an employee from doing things in his/her own way.
   c. On this job, an employee is prevented from choosing how to do things.
   d. On this job, an employee's freedom to make decisions is limited by other people.
   e. On this job, outside forces limit an employee's freedom to make decisions.
   f. On this job, procedures prevent an employee from working in his/her own way.
   g. On this job, other people limit what an employee can do.
4. Consequences (α = .86)
   a. On this job, an employee's decisions have extremely important consequences for other people.
   b. On this job, very serious consequences occur when an employee makes an error.
   c. On this job, important outcomes are influenced by an employee's actions.
   d. On this job, other people are put at risk when an employee performs poorly.
   e. On this job, mistakes are more harmful than they are for almost all other jobs.
   f. On this job, tasks are more important than those in almost all other jobs.
   g. On this job, there are consequences if an employee deviates from what is expected.

The response format is a 7-point likert scale, ranging from (1) strongly disagree to (7) strongly agree. Psychometric properties and various forms of validity are assessed in four different studies. The coefficient alphas provided in the parentheses above are estimated from a sample of 394 working adults in the US recruited from the StudyResponse Project[11].

Subscales 1 and 2 are highly correlated (.81), and that these subscales are also highly negatively correlated to role ambiguity, -.73 and -.65 respectively. This suggest that more research is needed to adequately establish the validity of situational strength vis-á-vis related concepts.

BALANCED TIME PERSPECTIVE

The balanced time perspective is a notion proposed by Zimbardo and Boyd (1999). Hence, the following applications of balanced time perspective have employed the Zimbardo time perspective inventory (e.g. Drake et al. 2008; Gupta, Hershey and Gaur 2012). Consisting of a total of 56 items, the Zimbardo inventory is arguably too long to be used in a comprehensive survey. Therefore, the measure proposed here consist of 28 items, half of which comprises a past, and the other half a future subscales (Webster 2011; Webster and Ma 2013). The balanced time perspective scale is intended to tap cognitive, affective and motivational dimensions.

The following scale has been proposed to measure balanced time perspective (Webster 2011):

1. Reviewing events from my past helps give my life meaning.
2. I Look forward to my future.
3. I get a renewed sense of optimism when I remember earlier life experiences.
4. Looking ahead really gets me energized.
5. Reminiscing about my past gives me a sense of purpose in life.
6. I enjoy thinking about where I'll be a few years from now.
7. Seeing how the pieces of my past come together gives me a sense of identity.
8. I have many future aspirations.
9. The joy of life is strengthened for me when I recall the past.
10. Achieving future dreams is something that motivates me now.
11. Reliving earlier times in my life helps give me a sense of direction.
12. I get excited when I think about the future.

[11] See www.studyresponse.net for more information.

13. The pattern of my life makes more sense to me when I reflect on my past.
14. Anticipating my later life fills me with hope.
15. Tapping into my past is a source of comfort to me.
16. Imagining my future makes me feel optimistic.
17. Remembering happier times from my past helps energize me in the present.
18. I Like to fantasize about what is down the road for me.
19. I feel my past is a resource upon which I can draw.
20. Creating a positive future is something I often think about.
21. Thinking about when I was younger helps me understand my lifestory.
22. My future development is something I frequently think about.
23. Reflecting on earlier triumphs helps me identify personal strengths.
24. I enjoy thinking about goals that are yet to come.
25. Recalling previous successes helps motivate me now.
26. I have some very specific future goals.
27. Important memories fill my past.
28. The kind of person I want to be is brought into focus when I think about the future.

Note: Odd items = the past subscale; even items = the future subscale.

The response categories ranges from 1 = strongly disagree to 6 = strongly agree.
To construct the fours specific time perspective categories, the following rules are used: The (1) time restrictive category comprise those who score below median on both the past and future subscale, the (2) futurist category represents those who score below median on the past but above median on the future subscales, the (3) reminiscers score above median on the past but below median on the future subscale, and last, the (4) time expansive (or balanced) group score above median on both subscales (Webster 2011).
The Chronbach's alphas for the subscales are estimated to be .88 (past) and .92 (future) in a sample of Canadian undergraduates (Webster 2011), and in a sample of American adults the same coefficient alphas are estimated at .94 and .95 (Webster and Ma 2013). In a Dutch sample, the same coefficients are estimated to .90 and .93 for the past and future subscale respectively (Webster, Bohlmeijer and Westerhof 2014).

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The objective of this review is to propose a way to operationalize the chiefly theoretical notion of agency in both a general sense, but with specific suggestions for retirement research. Toward that aim, the review first provides an overview of relevant terminological issues and theoretical considerations that have been discussed in the life course literature. Second, the review put forth related social psychological constructs that can be used to operationalize agency. The review ends with a discussion of the relevance of planful competence and situational strength in operationalizing agency, and suggest areas for future research to focus on.

The Netherlands Interdisciplinary Demographic Institute (NIDI) is an institute for the scientific study of population. NIDI research aims to contribute to the description, analysis and explanation of demographic trends in the past, present and future, both on a national and an international scale. The determants and social consequences of these trends are also studied.

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