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Adult Development as a Lens: Applications of Adult Development Theories in Research

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Adult development (AD) theories have a great potential for use in providing perspective and create new understanding of societal problems and challenges. The use of AD as a lens provides insights into people's qualitative, different ways of thinking, talking, and acting. The theories are used by researchers and practitioners with various backgrounds in several different scientific domains. The aim of this article is to provide an overview of different approaches on how theories of AD are applied in research, with a focus on the potential of using it and how to eliminate the possibility of reproducing existing knowledge. The results consist of six approaches of how AD is currently presented and used in research: introductory work, creating and refining stages, making comparisons with established models, tracing the dynamics of promoting development, analysis of mismatches in adult life, and societal and organizational development. There are several promising avenues for future research by using a combination of these approaches as a way forward to promote the development of this scientific field.

Keywords: adult development, complexity, social science, developmental psychology

AD theory, with its focus on stages, is sometimes described as a narrow branch of developmental psychology. However, AD theories have the potential for wide use in other fields by providing new perspectives and understanding on several societal problems and challenges. These theories and related research can then be applied to domains of knowledge other than those they were originally created to address. They can be used by researchers and practitioners from a variety of disciplines and backgrounds. This is not only a research opportunity, but also a necessary process if the developmental perspective is to play a more active part in mainstream science and culture. The lack of AD research in social sciences (Fein & Jordan, 2016) should be addressed by work that provides inspiring examples of different approaches using an AD perspective to accomplish novel and interesting research.

Gender studies have established the notion of a "gender lens" or "gender spectacles" to view societal phenomena or situations with a particular focus on aspects of gender. A gender lens can be exemplified by a checklist or an evaluation framework, which examines how content and approaches are gendered and thereby shaped by men's or women's different perspectives or experiences.

Analogously, we apply the lens concept to AD as a way to view the usefulness of stage development. AD theories may have internal differences, but they distinguish themselves from other social science theories through a shared understanding of development as a more or less general progression of stages. Our use of the lens concept also includes the metatheoretical aspect of seeing a phenomenon from several perspectives and being able to coordinate those perspectives as more or less complex or developed. Although this could be characterized as a "meta-lens," the term "lens" will be employed in the article.

The aim of this paper is to provide a selection of different approaches to using an AD perspective in research. We will focus especially on how AD theory is currently used and presented

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in research and on its potential for adding knowledge and new perspectives. This article, based upon our own experience of applying AD theory to new domains as active researchers, is meant as a reflection on how AD theories have been applied in different scientific fields. Many researchers in the field of AD have backgrounds in sciences other than psychology; the authors of this article are based in social sciences and engineering. This scientific diversity can be seen as an advantage for reaching out to other research domains and paradigms.

In this article we have constructed six research perspectives or ways of approaching AD research (Table 1). These perspectives should neither be confused with research approaches (e.g., qualitative or quantitative) nor types of articles (e.g., empirical, theoretical). The categories can instead be described as ways that AD is either presented (Category 1) or conducted or applied (Categories 2-6). The definition ascribed to each category delineates the characteristics of AD theory used in the cases within it. Because some studies use features from two or more descriptions, they may fit into more than one category. The examples are selected from a broad scientific area of application. Our ambition is to present key work and illustrative examples within AD, but not a complete review of this work.

This article begins with a short introduction to AD theory, followed by a description of the six different ways AD research is currently performed and used, and a final discussion of the uses and potential of this theoretical perspective in various areas of research.

Adult Developmental Stage Theories

Developmental stage theories, in general, have a longer history, but stage theories for adult developmental meaning-making arose about 40 years ago. AD is a subfield within developmental psychology that traces development beyond adolescence and into adulthood. It provides research on systematic and qualitative changes as a result of interaction between internal and external environments (Hoare, 2011a). AD comprises several theories on development in terms of meaning-making and complex reasoning in different domains; over recent decades much empirical evidence has been assembled in support of these theories (Cook-Greuter, 1999; Kegan, 1994; Kohlberg, 1973; Labouvie-Vief, Hakim-Larson, & Hobart, 1987; Loevinger & Blasi, 1976; Hy & Loevinger, 1996; Gilmore & Durkin, 2001; Pfaffenberger, 2005; Pratt, Diessner, Hunsberger, Pancer, & Savoy, 1991; Torbert, 2004; Westenberg, Blasi, & Cohn, 1998). Some of the earliest contributions are compiled in the two edited works Adult Development (Volumes 1 and 2; Commons, 1989, 1990), which were followed by more handbooks (Demick & Andreoletti, 2003; Hoare, 2006, 2011b).

Development in this field refers to sequential growth in complexity of meaning-making or reasoning. The empirically based theories depict a transformation process in the organizing structures of meaning-making. This is a process that involves qualitatively different changes (Hoare, 2011b). Development follows in a sequence of stages, and later stages include and transcend early ones, which means that characteristics from earlier stages remain as part of a person's repertoire even when later stages are used as the primary framework (Cook-Greuter, 2013). People at later stages can understand previous ones, but those at earlier stages have no access to or understanding of reasoning used in later stages. Through development, the complexity and scope of what people can notice

Table 1 Six Approaches in AD Research

Category	Short description
1. Introductory work	Presentation of AD theory
2. Creating and refining stages for adults	Construction of theories and applications in new fields
3. Comparisons and/or horizontal adaptions	Comparisons to established theories within various scientific disciplines
4. Promoting development	Movements between stages and promotion of development
5. Mismatch in adult life	Analysis of tasks' complexity and corresponding mental demand
6. Societal and organizational development	Application to societies and organizations

Note. AD = Adult development.

becomes more comprehensive. "People's stage of development influences what they notice and can become aware of, and therefore, what they can describe, articulate, cultivate, influence, and change" (Cook-Greuter, 2013, p. 3). Later stages allow more differentiation (more aspects of the world are noticed) and more integration (the different aspects are brought together into a coherent whole that functions as one). Development to later stages of understanding entails more autonomy, more tolerance for difference and ambiguity, and more self-awareness. Nevertheless, derailment can occur at all levels and later stages are not more adjusted or "happier" (Cook-Greuter, 2013). Development is a possibility for adults, but not a matter of course; it could be encouraged by challenge and support, but never forced or guaranteed. All stages can be seen as appropriate for any particular person and should be respected as such. It is also important to keep in mind that all characteristics of stages are idealizations, and that people are never completely described or defined by them.

Introductory Work

By "introductory work" we refer to articles that introduced an overview of AD theory or a particular theory or model within this general framework. They often describe the stage model and then give empirical examples within a specific domain or the field of interest of the researcher/practitioner writing the article. Some were published in prestigious journals such as the *Harvard Business Review* (Kegan & Laskow Lahey, 2001; Torbert & Rooke, 2005) and some were given whole journal issues, such as that of *World Futures* (Commons & Ross, 2008).

Many active researchers within the field have published introductory articles (e.g., Cook-Greuter, 2004) as an easy and accessible way of publication. Authors have introduced the model of hierarchical complexity (MHC) as a tool for teaching in higher education, which clarifies and shows the gap between the complexity of the subject and the students' understanding of that subject, and suggests how to support the development of more complex reasoning in students (Kjellström & Stålne, 2010).

Literature reviews can also be seen as a form of introductory work but, to date, there are very few literature reviews published on this subject. An exception is the leadership review of Mc-Cauley, Drath, Palus, O'Connor, and Baker (2006) and Pfaffenberg's (2005) review of how to promote development.

Creating and Refining Stages for Adults

This type of research focuses on constructing stage theories, applying them to new domains, and describing the characteristics of each stage. This is a traditional research design and the field was established by creating different subtheories within AD theory. Most of those theories are empirically grounded, based upon the collection of many interviews or written documents on a topic and searches for patterns in the data. The most well-known work of this genre is that of Loevinger (Loevinger, 1998; Loevinger & Blasi, 1976), though similar methods have been used (e.g., Kohlberg, 1973). Less wellknown models have been created in domains such as parenting (Newberger, 1980; Newberger & Cook, 1983) and the creation or enjoyment of a good life (Armon, 1984). An interesting case is "care ethics." Gilligan described a complementary model of moral development (Gilligan, 1982), but other researchers created a systematic way of measuring the moral development through an interview about several dilemmas (Juujärvi, Myyry, & Pesso, 2010; Skoe, 2014). Many theories have also been developed in the learning domain (Baxter Magolda, 2001; Belenky, 1997; Hamer & van Rossum, 2016a, 2016b; King & Kitchener, 1994; Perry, 1970; Van Rossum & Hamer, 2010).

Researchers on each of the above-mentioned theories developed their own scoring manuals and corresponding stage descriptions. Within the area of complex reasoning, two theories have developed in parallel: Dynamic skill theory, initiated by Fischer (Fischer, 1980; Fischer & Bidell, 2006) and further developed by Dawson and associates (Dawson, 2002; Dawson & Stein, 2011; Dawson & Wilson, 2003-2004), and the general stage model (Commons & Richards, 1984a, 1984b; Commons & Ross, 2008), later renamed the MHC by Commons and colleagues (Commons, 2008; Commons & Ross, 2008). These theories have been used as a foundation for creating detailed descriptions of different levels of complexity in domains like physics (Stålne, Commons, & Li, 2014), energy concepts (Dawson & Stein, 2008), leadership (Dawson & Gabrielian, 2003; Dawson & Heikkinen, 2009), and responsibility for health (Kjellström & Ross, 2011). Research in the different domains builds up the field of AD and provides core research to support its use in various areas. A weakness of this approach is that it is very time-consuming to design new models to represent new areas of development. The aim of replacing all previous theories and their corresponding manuals with one general stage model and corresponding scoring manual will be discussed later.

Integrative efforts have also used these insights from various domains and theories. Wilber integrated several developmental frameworks and contributed to the popularization of AD theory through his books (Wilber, 1995). But other researchers also integrate theories, for example, by creating a conceptual analytical framework showing meaning-making patterns in how change agents engage with wicked societal problems by integrating several concepts and models from the field of AD (Jordan, 2011). This framework focuses on five domains in a person's awareness: task complexity, context, stakeholders, self, and perspectives.

Stage theories usually employ established models and theories and examine how people, in general, think at different stages in their lives. In this form of research studies the participants are often given two tasks. The first is to measure the developmental level of the person, through an interview (e.g., Lahey, Souvaine, Kegan, Goodman, & Felix, 1988; Skoe, 2014), a written assignment about an dilemma or concept (e.g.Van Rossum & Hamer, 2010), or a test (Commons et al., 2006; Hy & Loevinger, 1996).

The second task consists of additional questions about a particular issue. For example, environmental views were studied by first doing a subject-object interview (Lahey et al., 1988) and then asking questions about environmental issues (Greenwald Robbins & Greenwald, 1994).

Another variant of using these two tasks is the use of open-ended questions on a research topic that are scored using hierarchical complexity analysis. An example of the two-task method is the study by Kjellström & Ross (2011) in which participants were asked about responsibility for their health. Answers were scored using the Hierarchical Complexity Scoring System (HCSS; Commons, Miller, Goodheart, & Danaher-Gilpin, 2005), which enabled a description of characteristic ways of reasoning for each level.

Another way to employ AD theories is not to try to find general patterns among a population, but rather to describe and assess human meaning-making in particular individuals of public interest, influence, or importance, positive as well as negative. Compared with interviewing many people on different questions about an issue, this approach has certain challenges. The people of interest are often unavailable to take a developmental test or to provide an interview, either because they are otherwise engaged or no longer living. It can, however, be accomplished by scoring available written texts and statements or assessing behavior over time. It can, of course, be hazardous to draw conclusions based on material that may not be representative of the person's actual meaning-making process. Here the person's developmental level is inferred through HCSS (Commons et al., 2005) or by assigning a level of action logic or stage of meaning-making according to ego development theory.

Examples of studies on evaluating public statements and observable actions are those conducted on Vladimir Putin (Fein, 2016), Warren Buffet (Kelly, 2013a, 2013b), and Vaclav Havel (Torbert, 2004), and in systematic evaluations of the writings of people such as Dag Hammarskjold (Stålne, 2011) and Anders Behring Breivik (Billing & Stålne, 2012). Another possibility is self-evaluation through developmental autobiography (Bradbury & Torbert, 2005; Kelly, 2014), in which authors describe their own development through crises and their solutions.

Comparisons and Horizontal Adaption

This research perspective classifies theories and compares them to established theories within established research fields. One function of this perspective is to introduce AD theory to researchers unfamiliar with it. Another is to construct a classification of theories and theoretical elements. This kind of research focuses on AD and has similarities to other theories, methods, and empirical results.

AD theories are sometimes compared with theories in other scientific fields. This may create credibility for an AD theory by "anchoring" it and showing its compatibility with already established theories or models. An advantage of this approach is that it creates little resistance, but a hindrance could be that it also creates a sense of "so what?" In a review of AD leadership literature, one conclusion was the lack of relationship of this research with established mainstream leadership research (McCauley et al., 2006). An example of rooting AD theories in established theories are relating an MHC to information theory and mathematics (Commons & Richards, 1984a, 1984b) and physics (Stålne et al., 2014), and by assimilating MHC with other AD theories in a table of concordance.

Another attempt to align the AD perspective with other theories includes studies that try to show the compatibility of AD theories and interpretations with generally well-known methods. The close relationship between phenomenographic analysis and different AD theories has been pointed out by several different authors (Dawson-Tunik, 2004; Kjellström, 2010a; Van Rossum & Hamer, 2010). Fein's (2010) study shows how a developmental framework can advantageously be connected or adapted to discourse analysis. AD and discourse analysis share a concern in identifying both structures and content of reasoning.

Translational research studies also use AD theories to show how they are comparable with established theories and models, as in the comparisons between structure of observed learning outcomes taxonomy (Stålne, Kjellström, Utriainen, 2015), a widely used constructivist model in the educational field, and the MHC (Stålne & Kjellström, 2011). Hagström and Stålne (2015) employed the MHC as a lens for examining Kegan's subject-object theory, and then used the latter as a lens for examining the former. In order to build knowledge and create a firm foundation for AD theories it is important to compare models and anchor them in relation to other theories and methodologies.

Promoting Development

In the field of AD, development and progression is generally viewed as positive and even intrinsically good, thus a consequential question is how to promote and foster it. This brings us to the next approach, which is to analyze the

mechanisms of stage change and the available methods for promoting AD.

Research on the dynamics of movement between stages can either focus on transformation or transition. "Transformation" describes the radical change from one stage to another: the qualitative difference between the stages (e.g., from one order of consciousness to the next in terms of meaning-making; Kegan, 1982, or from one level of ego development to another; Loevinger & Blasi, 1976). "Transition" is the movement from one stage to another, which can be described in small steps. *How* development happens and the dynamic relationship that builds up the movement from one stage to another is explained by transitional steps in MHC (Ross, 2008).

This research perspective also includes theoretical studies that elaborate aspects such as the generalizability and context-sensitivity of a stage or the relationship between structure and processes (e.g., Hagström & Stålne, 2015).

AD research has shown interest not only in studying development but also in trying to design interventions to promote development. Pfaffenberger (2005), and Ross (2006, 2007) have reviewed the literature to find what facilitates and fosters development toward higher stages.

Of a small number of methods found for promoting development, a few will be mentioned here. Ross has developed a method for the development of people's capacity to analyze conflictual issues and to deliberate complex decisions about which actions are needed in The integral process for complex issues (Andersson, 2016; Ross, 2006). Kegan and colleagues have developed "The Immunity to Change" reflection tool to challenge a person's commitments and assumptions that form the basis of their meaning-making (Kegan & Laskow Lahey, 2009; Kjellström, 2009, 2010b; Reams & Fikse, 2010). Another method for promoting development is presented in the dialectical thinking, which comprises a set of thought forms that are assessed but can also work as mind openers for the person using them (Basseches, 1984; Laske, 2006, 2015; Vurdelja, 2011). Finally, a specific methodology is developmental maieutics, which, simplified, can be described as using basic research on the developmental pathways of science concepts to design curricula and assessments. From this, one can provide feedback to teachers and students to refine their understanding of conceptual development. It also enables practices that promote conceptual development (Dawson & Stein, 2011).

Although research on how to promote development is nascent and reliable knowledge is lacking (Pfaffenberger, 2005, 2007), one ethics course that integrates developmental theory and classical philosophic texts targets skills of perspective taking and has shown advancement in moral development (Penn, 1990). Other examples of promoting development can be found in the domain of leadership (Manners, Durkin, & Nesdale, 2004; Vincent, Ward, & Denson, 2013, 2015).

The Mismatch in Adult Life

AD research focuses on analyzing task complexity and mental complexity by illustrating the gaps (discrepancy) between the demands of a task in a certain domain and the person's actual capabilities. This discrepancy has two main forms. Western culture expects people to perform tasks in certain domains at levels of complexity that the majority of people have difficulty handling (Kegan, 1994). In some contexts, including leadership in the face of problems such as climate change and migration waves, these demands require even more complex thinking and a greater social perspective from both leaders and the population at large.

The gaps between the mental demands of modern adult life and people's way of addressing them is pointed out by Kegan (1994). This book illustrates modern demands of working life, relationships, parenting, and counseling work as expressed in literature, though he later elaborates on these themes (Kegan, Lahey, Miller, Fleming, & Helsing, 2016). These gaps have been replicated in various domains, and these studies are based upon an analytical interpretation of cultural ideas, often expressed in texts, that are then compared to developmental models (Kjellström & Sjölander, 2014).

One such example is an analysis of ideas on personal responsibility for health in self-help books and governmental reports (Kjellström, 2005). The study shows that the prerequisites for taking responsibility are self-reflection, critical examination, and conscious choices. The ideas on personal responsibility for health impose demands of varying complexity, but the

majority ask more than people can generally manage. Another empirical study is a quantitative survey study of views of good care. Compared with sociodemographic and occupational factors, the value systems (a way to measuring AD) had stronger predictive impact on the staff's views on care ethics and on participation and autonomy of the elderly (Kjellström & Sjölander, 2014). The views among staff with an early conventional value system were, to a large extent, related to strict rules, routines, their own working conditions, and how they would like to be cared for when old. The views among those with middle and late conventional value systems were based more on collaboration between the older person and the staff, on individualization, and on the needs and preferences of the elderly. It was concluded that staff at late conventional stages of ego development show value priorities that are most in accordance with the aim of optimizing the older persons' exercise of autonomy and minimizing the exercise of paternalism, which is required in order to be professional in this domain. Another example is showing that the immunity to change process also takes for granted a certain level of reflection on the part of the participants (Kjellström, 2009, 2010a, 2010b).

Even higher levels of complexity are needed to handle urgent issues in today's world. This kind of argument is often done in the domain of leadership and leading transformational change (Bushe & Gibbs, 1990; McCauley et al., 2006; McGuire, Palus, & Torbert, 2007; Rooke & Torbert, 1998, 2005). These kinds of studies need to show that a particular question is quite complex, as in the example of Bruntland's definition of sustainable development (Kjellström & Stålne, 2010). In this argument, only when people reach the later levels of development (e.g., strategist action logics) do they become interested in and able to rethink assumptions (e.g., engage in double-loop learning; Torbert, 2004).

Other studies focus on the specific and unique competencies that people at higher levels of development can bring to an issue. Central to this work is the idea that levels of development influence a persons' approach to managerial tasks (Day & Dragoni, 2015). An oft-cited publication showed that seven of 10 longitudinal organizational efforts that resulted in transformative change measured at the later stages were

led by CEOs or had coaches at higher levels (Torbert & Rooke, 1998). There is support for the general proposition that later stages of development generates even though some studies do not support the proposition (McCauley et al., 2006).

Lately, several studies have examined change-making in the area of sustainability, and the same pattern is apparent. The people most interested in performing transformational changes are those with later action logics. These also have the capacity to see all systems (environment, social, and economic) that need to be integrated in such efforts (Baron & Cayer, 2011; Boiral, Baron, & Gunnlaugson, 2014; Boiral, Cayer, & Baron, 2009; Brown, 2011, 2012; Inglis, 2008; McEwen & Schmidt, 2007).

Societal and Organizational Development

Most AD research focus on human individual development and contextual factors are dealt with to a lesser extent. Some theories in the field have been further elaborated with a more comprehensive application, mainly to societies and organizations. A core idea is that organizations and societies can be organized to fit the average mental complexity of individuals.

One theory with this wide-ranging use is the MHC, which started out as a stage theory of human development, but is today mathematically grounded as a formal theory applicable to all occasions in which information is organized (Commons, 2008; Commons & Chen, 2014; Commons et al., 2007; Commons & Pekker, 2008; Commons & Ross, 2008). The theory accounts for increases in behavioral complexity with applications as broad as animal behaviors and societal change. The key idea in the application of AD theory on the societal level is that different organizations of a society require different levels of complex thinking. MHC has been applied to this work, especially to how democracy may be understood at different levels of complexity (Ross, 2008).

AD applied to organizational development was proposed earlier by Torbert (2004) and associates. They outline a sequence of stages of organization development that is analogous to the individual development. This kind of idea has been further explored in recent work by Laloux (2014) that concerns the development of organizational design and logic and

was derived from Wilber's (1995) view on cultural and structural evolution. The focus is on how organizations are molded to fit later stages of individual development, regarding structures, practices, processes, and cultures. A similar analysis in terms of cultural development was described by (Graves, 2005), and later popularized in the spiral dynamics model by Beck and Cowan (2006) who also suggested a corresponding development of structural logic. Alternatively, more empirically based approaches of describing and measuring cultural development in terms of worldviews or values have been proposed by De Witt, de Boer, Hedlund, and Osseweijer (2016) and Sjölander and Stålne (2012).

However, further research on the relation between the different aspects of cultural, structural, and individual development is called for. One exception is a study on the relation between organizational development, ego development, and communication patterns in a Swedish bank by Hagström and Backström (2016).

Discussion

In this article we constructed six ways in which AD is currently used in research. This discussion starts out with a reflection on appropriateness of the different approaches and how they can be used. This is followed by a short discussion about the value of AD theory as a lens into social problems and challenges. A methodological limitation is that the cases chosen are shaped and biased by the authors' reading and research experiences, which we have tried to counterbalance by providing a large amount of references to a variety of researchers. A conceivable shortcoming is that it is possible to construct further categories, but we propose that these categories are adequate as a starting point for a discussion about promising avenues for future AD research.

Application of AD Theory

The potential for adding knowledge and new perspectives among the six categories differs, and if we compare them it is obvious that they require varied amount of time and effort. Writing an introductory article about the use of AD in a new domain can be a learning experience for the researcher, but while it may provoke interest among readers, it will probably add little new knowledge. To get a good grasp of AD theory and learn the methodology to apply it will require far more work and time. There is a lack of longitudinal studies of AD, which may have the potential to contribute new knowledge of both the dynamics of development and the theory of development. These will also require huge research grants over long periods of time.

A reflection on the analysis of AD literature is that a majority of researchers stay with one theory; they work with that, ameliorate it, or apply it to a particular domain. This may be because it is difficult to learn another theory thoroughly and to master its scoring procedures. Perhaps it is easier to continue to use an already-learned theory and processor to continue with a theory related to the scientific discipline in which the researcher is active.

Several Swedish researchers have performed cross-disciplinary research and applied several theories of AD to a variety of questions and in domains other than their original discipline. This is probably not unique, but a possible explanation may be that few have psychology as a disciplinary background, which has "compelled" work in domains where AD is rare. A strength of such a cross-disciplinary approach is that the most adequate and appropriate theory can be used in each situation and scientific study. It may also potentially be applied in a detached and impartial relation to the frameworks themselves, as a developmental lens that, according to the situation, may yield different perspectives. A potential drawback is that it may lead to a lack of depth in some of the specific domains or theories.

Many researchers may use a few or more of the approaches described in this article, and we suggest that researchers reflect on the approaches most appropriate for their current academic positions, what is possible in their personal situations, and how best to contribute to the field and to identify a genuine lack of knowledge. As researchers we not only have an ethical responsibility not to reproduce what has previously been established, but also to find interesting and challenging avenues of investigation (Alvesson & Sköldberg, 2009).

Using only one theory leads to the problem of development often being treated one-dimensionally. Individual development is influenced by several factors: evolutionary, ecological, genetic, neural and hormonal, biomedical, nutritional, phenotypic, and proximal and distal environmental influences (Wachs, 2000). These factors are necessary but not sufficient to analyze a person's developmental position, and it is a challenging task to disentangle, predict, and account for all.

But the integration of several factors is an ambition that creates promising research: for example, incorporating organizations and individuals. If a leader is in over his or her head, it is not solely a problem for the individual to handle, nor is it a fact to accept, but it is also the result of bad recruitment by an organization (Kjellström, 2010a, 2010b). So rather than focus on promotion of development, it could equally be a question of adaptation of organizations. There is a need for employers and organizations to have knowledge and competence in AD and the ability to apply understandings of the level of complexity, both in organizational positions and in people.

As a scientific field, AD seems to be in a phase of embroidering details. "Normal science," according to Kuhn's theory of scientific paradigms, refers to research activities aimed at accumulating details in agreement with established theory, without challenging the core assumptions of the theory or methods in the field in question. On the contrary, paradigm shifts would be obtained by questioning such assumptions in the field. However, research in AD often challenges assumptions in other scientific fields by illustrating the hierarchical nature of various phenomena. This may provide an explanation for studies that try to show that AD is comparable to other kinds of theories. We urge researchers, however, to analyze the hidden assumptions within AD research (Kjellström, 2010a, 2010b).

One such assumption is the normativity entailed in the field of inquiry as such, since it is often explicitly referred to as "positive AD." It can be problematic if the notion of the development through the stages in terms of perspective-taking, cognitive complexity, or maturity is, without reflection, assumed to be intrinsically good without arguing for what it is good: for instance, that a higher stage leads to better performance of leaders. However, such causality can be difficult to make, since the view on what characterizes good leadership and how to evaluate it is qualitatively different at each

stage, and even across cultures. This difficulty holds for other domains as well, for example, if the stages of ego development are evaluated in relation to well being, since it is empirically established that people have differing views on happiness and are not generally happier at higher stages (Bauer, 2011). Neither are they necessarily better adapted in the culture, hence the term "postconventional." Further, if such causality or logic could be established, it would imply that this "what," be it leadership performance, happiness, being well-adjusted or anything else, is regarded as intrinsically good, which would be normative as well. Rather, what AD typically entails is an increased ability to coordinate different logics or perspectives.

Thus, the problem stated above can be expressed as arguing for the virtue of AD according to a single logic of a single perspective. One way of explicitly addressing this is to view the development as intrinsically good and desirable in itself. Thus, the field is often referred to as "positive AD." This does not, however, rule out other aspects or qualities to be considered as intrinsically good and possibly in conflict with such development, such as an individual's autonomy, human dignity, and respecting persons where they are (Kjellström, 2009). Neither does it rule out that each stage has potential traumas and negative side effects. And finally, it is compatible with the vision of creating a society that is designed to allow individuals to develop their full potential and that has a place for all kinds of people at all "levels" of development (Kjellström, 2010a, 2010b).

AD as a Lens

What is the value of AD theory as a lens to understand social problems and challenges? A theory can be defined as a set of ideas that explain facts or events. As such, AD theories provide an explanation of why people have qualitatively different ways of thinking, talking, and acting. People's stations in life have a profound influence on what they notice and are aware of and how they act in the world. These different ways can be ordered by stages of development, through which some people have the potential to evolve. Thus, these theories provide a lens to understand individual differences, in particular, the mental demands and the discrepancy between demands and capabilities.

This article has only hinted at the potential of using AD as a lens, particularly as a means to understand the gap between task demand and mental complexity. A fertile area for future research would be the further elaboration of what an AD lens represents and what it implies.

The gender lens is established in political discourse in Sweden and other Western countries, even though it is not unchallenged. The same is not the case with AD. Yet AD provides potentially interesting and provoking perspectives on social problems and challenges. As a theoretical framework AD theory has the potential of pointing out societal changes that could be advocated in an effort to create long-term sustainable societies.

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