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On the nature and origin of self-esteem

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CHAPTER 1
Introduction

Self-esteem is an exceptionally prevalent construct in modern psychology (Zeigler-Hill, 2013). So much so that it is thought to be at the root of what makes individuals (and societies at large) thrive. This can be seen at the level of the general public, evidenced by the large amount of self-esteem oriented self-help literature – such as *How to Raise Your Self-Esteem* (Branden, 1987) – or by initiatives such as the National Association for Self-Esteem (NASE), whose mission is to “improv[e] the human condition through the enhancement of self-esteem” (National Association for Self-Esteem, n.d.). The significance of self-esteem is also seen in the context of scientific research, where it has been found to be an important predictor for psychological variables such as well-being (Baumeister, Campbell, Krueger, & Vohs, 2003; Furnham & Cheng, 2000) and life satisfaction (Diener & Diener, 1995), for example. Perhaps what attests the most to the perspective that self-esteem is central in individuals’ lives is the widely held perspective that positive self-esteem is actually a need (Allport, 1955; Epstein, 1973; James, 1890). Aside from our basic physical needs, therefore, many researchers believe that we are motivated to fulfill a need for positive self-regard (Baumeister, Tice, & Hutton, 1989; Brown, 1998; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002).

While the centrality of self-esteem in our lives seems to be both common knowledge and scientific knowledge, the field of self-esteem research is still in want of a general consensus of what self-esteem actually is (Blaschovich & Tomaka, 1991; Heine, Lehman, Markus, & Kitayama, 1999; Scheff & Fearon, 2004; Tafarodi & Ho, 2006). There are definitions of self-esteem, to be sure, varying from the extent to which people like themselves and feel that they are competent (Brown, 1998; Tafarodi & Swann, 1995) to the positive or negative view that individuals have of themselves (Rosenberg, 1979). From these definitions we can ascertain that self-esteem is not a thing that has a physical location, which we then have a mental representation of (in the same way that a bicycle physically exists and can be reflected upon; Tafarodi & Ho, 2006). Instead, researchers have concluded that self-esteem is the mental representation itself, where the positivity or negativity of self-esteem is determined by the extent to which individuals like their mental representations of themselves (Tafarodi & Ho, 2006). From this perspective, self-esteem is akin to a positive or negative conclusion that is made about the self. This raises questions such as, what remains of ‘self-esteem’ if a conclusion is not made, and a representation is not formed, of the self? Does self-esteem then no longer exist?

These questions bring about a more fundamental question regarding the nature of self-esteem. Namely, if self-esteem is not a physical ‘thing’, what then underlies the representations that individuals develop of themselves? The current thesis aims to answer this question by unveiling the underlying processes that give rise to, and that characterize, the experience of self-esteem. In order to understand these processes, a complex dynamic sys-

tems perspective is adopted (Lewis & Granic, 1999; Nowak & Vallacher, 1998; Thelen & Smith, 1994; Van Geert, 1994).

1.1 A Complex Dynamic Systems Perspective

A complex dynamic systems perspective is a meta-theory, which – based on a number of basic principles – aims to describe, explain and predict how the interactions between a collection of elements across time creates an emergent property that cannot be reduced to the characteristics of the elements themselves (Thelen & Smith, 1994). A dynamic system can be a cellular system, an individual system, a dyadic system, an economic system, and many others at various scales. Thus, the same set of principles is expected to apply to any system. In the current thesis, I apply a complex dynamic systems perspective to the self-esteem system. The core complex dynamic systems principles that I will discuss in this thesis are self-organization, emergent properties, and nested time-scales, which I shortly describe below.

Self-organization is the process by which interactions amongst lower-order elements give rise to higher-order emergent properties. The system thus organizes itself, without there being an internal agent that steers this organization (Kelso, 2000). An example of self-organization is molecules interacting to form cells (Misteli, 2001). The emergent properties are characterized – not by the elements themselves – but by the way that the elements influence each other and are organized across time, and by their ability to maintain themselves across a period of time.

This process is fundamental to any complex dynamic systems approach (Haken, 1997; Lewis, 2000), and forms the heart of our exploration of self-esteem. Self-esteem can thus also be conceptualized as a higher-order emergent property that emerges out of interactions between its own lower-order elements, such as feelings like pride or shame, negative thoughts about the self, or behavior like assertiveness or seeking reassurance. These lower-order elements – being positive and negative experiences of the self – can be seen as the building blocks for the self-organization of self-esteem. The self-esteem system therefore refers to all levels involved in this self-organizational process, from the level of the self-experiential building blocks to the higher-order emergent characteristics of self-esteem.

Due to this self-organization out of lower-order elements into higher-order emergent properties, a dynamic system can be conceptualized as consisting out of nested levels of increasing complexity. The levels are ‘nested’ in as far as each level is the product of simpler sub-levels, and as each level emerges into existence across an increasingly larger time scale compared to the previous level.

The most common distinction between nested levels is the distinction between a micro level and a macro level. The micro level of the nested system includes the lower-order elements that form the basis for the self-organizational process. For psychological systems, these include actions and experiences that occur in the here-and-now across the time scale of seconds or minutes (Fischer & Bidell, 2006; Lichtwarck-Aschoff, Van Geert, Bosma, & Kunnen, 2008; Thelen & Smith, 1994). Micro-level elements therefore exhibit

highly variable real-time developmental trajectories, characterized by relatively low structure and predictability (Lewis, 2002; Lichtwarck-Aschoff et al., 2008; Van Geert, 1998).

The macro level of the nested system consists of the higher-order emergent characteristics. For psychological systems, these include developmental acquisitions such as psychological disorders (Cramer, Waldorp, Van der Maas, & Borsboom, 2010), intelligence (Van der Maas et al., 2006), identity (Lichtwarck-Aschoff et al., 2008), and interaction patterns (Fogel, 1993; Granic & Patterson, 2006). Macro-level psychological characteristics develop across weeks, months, or years (Lewis, 2002), such that they have the potential to develop into patterns or structures that maintain themselves across a period of time.

While the micro-level and macro-level of a dynamic system are separate, they are also intrinsically connected (Lichtwarck-Aschoff et al., 2008; Smith & Thelen, 2003). This connection is bi-directional, such that the interactions between lower-order elements give rise to higher-order emergent characteristics, which then constrain the interactions between the lower-order elements. There is thus circular causality between the levels of the nested system (Kelso, 2000). This circular causality underlies the development of the system across the long term, as well as its real-time dynamics. Therefore, the nature of a higher-order emergent characteristic cannot be understood on its own, since it is not a static structure, but one that is inherently intertwined with the interactions between its lower-order elements.

Just as molecules interacting at the micro level give way to cells at the macro level, I posit that emotions and behavior that are positive or negative in their self-experiential meaning interact at the micro level to form a self-maintaining experience of self-esteem at the macro level. As such, my general proposition is that the origin of self-esteem is the self-organizational process that begins at the micro level (i.e., with self-experiential elements), and that the nature of self-esteem is that of a higher-order emergent property. Because an emergent property is – at any given moment – continually interacting with the lower-order levels of the nested system, I will test these general propositions by examining the dynamics within and across the nested levels of self-esteem in real-time (i.e., in the here-and-now).

1.2 State and Trait Self-Esteem

In the current thesis, I expand on the more general micro-macro distinction of a nested system in order to incorporate the traditional distinction between state self-esteem and trait self-esteem. State self-esteem is typically conceptualized as the highly variable and fleeting experience of one's self-worth as positive or negative that occurs "at this moment" (DeHart & Pelham, 2007; Kernis, Cornell, Sun, Berry, & Harlow, 1993). In contrast, trait self-esteem is conceptualized as the experience of one's self-worth as positive or negative that is relatively stable across a large period of individuals' lives, i.e., across years (Harter, 1982; Robins & Trzesniewski, 2005; Rosenberg, 1979).

I propose that both state self-esteem and trait self-esteem can be conceptualized as emergent properties. However, I suggest that the two are different self-esteem phenomena because they differ in the time span across which developmental self-organization occurs.

Chapter 1 - Introduction

In this thesis, I distinguish between developmental self-organization and real-time self-organization. First, developmental self-organization refers to the process of self-organization that allows the emergent phenomenon to come into existence in the first place. The time scale across which developmental self-organization occurs differs for state and trait self-esteem.

State self-esteem changes from moment to moment (Kernis, Grannemann, & Barclay, 1989; Leary & Downs, 1995; Rosenberg, 1986), suggesting that it developmentally self-organizes in the here-and-now. In contrast, trait self-esteem changes across the time span of years (Harter, 1982; Robins & Trzesniewski, 2005; Rosenberg, 1979), suggesting that it developmentally self-organizes across many months to years. Therefore, state self-esteem self-organizes in the moment out of the current self-experiential building blocks, while trait self-esteem is a relatively slow-changing emergent property, self-organizing across the larger history of the building blocks of self-esteem. Trait self-esteem is thus a higher-order construct compared to state self-esteem, making state self-esteem an intermediate meso-level, between self-experiences (i.e., micro level constructs) and trait self-esteem (i.e., macro constructs). The nested structure of the self-esteem system, as conceptualized in the current thesis, thus consists of the micro level, meso level, and macro level.

Aside from developmental self-organization, I suggest that emergent properties such as self-esteem also self-organize in real-time. In contrast to developmental self-organization, real-time self-organization is the process of self-organization that allows the emergent phenomenon to manifest itself, once it has self-organized into existence by means of developmental self-organization. Real-time self-organization thus allows state and trait self-esteem to be experienced by the individual. As experience occurs in the present moment, real-time self-organization thus also occurs in the present moment (across seconds and minutes).

Moreover, given that – from a complex dynamic systems perspective – all nested constructs of a dynamic system are dynamically intertwined at each moment, I conceptualize trait self-esteem, state self-esteem, and the self-experiential building blocks as being dynamically intertwined at every moment. As such, this thesis brings a new dynamic dimension to the concept of self-esteem. Regarding this dynamic dimension, the principles of the complex dynamic systems perspective make it possible to develop specific predictions regarding the specific nature of the dynamics between and within these levels of the self-esteem system. As the underlying dynamics of self-esteem have, to date, been largely neglected in self-esteem literature, this thesis aims to contribute to extant self-esteem literature by outlining, discussing, and empirically demonstrating these dynamics.

While complex dynamic systems thinking is not mainstream in self-esteem literature, the contributions that self-esteem researchers have made by utilizing complex dynamic systems thinking prove its value in furthering knowledge regarding the fundamental nature of self-esteem (i.e., Vallacher and colleagues, Delignières and colleagues; Delignières, Fortes, & Ninot, 2004; Fortes, Delignières, & Ninot, 2004; Ninot, Fortes, & Delignières, 2005; Nowak, Vallacher, Tesser, & Borkowski, 2000; Vallacher & Nowak, 2000;

Wong, Vallacher, & Nowak, 2014). This thesis extends this stream of work by integrating complex dynamic systems thinking more explicitly into the conceptualization of trait self-esteem, state self-esteem, and self-experiences (as nested levels of self-esteem).

1.3 Self-Esteem as an Intra-Individual Process

In order to understand the nature of a construct, it is essential to consider intra-individual variability, which focuses on differences (i.e., fluctuations) within individuals and across repeated measures (Van Geert & Van Dijk, 2002). Intra-individual variability contrasts inter-individual variability, which refers to the differences between individuals, and which is the most common focus in (developmental) research in psychology (Van Geert, 2014).

It is vital that intra-individual variability of self-esteem is considered, as self-esteem is an inherently within-individual process. According to the principle of non-ergodicity, within-individual processes can only be truly understood based on findings at the level of the individual (i.e., intra-individual variability; Molenaar, 2004, 2008; Salvatore & Valsiner, 2008).

While it is commonplace to draw conclusions regarding individual processes based on findings at the population level (i.e. population averages), this is in fact only possible under specific conditions. These conditions refer to, firstly, group homogeneity, where the main features of a statistical model – such as what is measured by each factor and what the strength between factors is – must be the same across individuals in order for a group model of a phenomenon to represent an individual model (Flyvbjerg, 2006; Molenaar & Campbell, 2009).

It has been found, however, that group homogeneity does not hold for most psychological processes (Denissen, Penke, Schmitt, & Van Aken, 2008; Molenaar, 2004; Tenen, Affleck, Armeli, & Carney, 2000). Secondly, the condition of stationarity must be met, which means that the statistical properties of data and the relationship between variables do not change across time. This, however, rarely holds for developmental processes (Molenaar & Campbell, 2009; Molenaar, 1994, 2004).

As these two conditions are hardly met for human processes (Molenaar, 2004, 2008) – such as self-esteem (Denissen et al., 2008), exploration of individual processes like self-esteem should be done at the individual level. I therefore explore the nature of self-esteem by focusing on within-individual dynamics. Based on the assumption of non-ergodicity, it cannot be assumed that all individuals will demonstrate the same specific dynamics. This, however, need not pose a problem for the scientific endeavor of unveiling the nature and origin of self-esteem based on its underlying processes (Flyvbjerg, 2006).

Rather than trying to identify specific dynamics of self-esteem that can be generalized to all individuals, I aim to identify how individual dynamics (and any possible inter-individual differences therein) can be interpreted from one underlying theoretical framework, i.e. a complex dynamic systems framework (Van Geert, 2014). I therefore aim to accomplish generalizability by demonstrating that a complex dynamic systems framework can be generalized to all individuals' self-esteem processes.

1.4 Self-Esteem as a Contextualized Process

Above, I describe how – to gain a better understanding of the nature of self-esteem – I take a complex dynamic systems perspective and focus on intra-individual variability of self-esteem. In order to unveil the origin of the dynamics of individuals' self-esteem, it is necessary to start at the beginning: with the building blocks of self-esteem. From a complex dynamic systems perspective, iterations of real-time events are the proximal engines behind development (Granic et al., 2007; Thelen & Smith, 1994). I therefore zoom in on these real-time events for self-esteem.

I suggest that the real-time building blocks of self-esteem are the positivity and negativity of behavioral and affective experiences of the self that occur in the moment, i.e., in real-time. First, behavior reflects how an individual sees or feels about him or herself (Atkinson, 1964; Leary, 2004). For self-esteem specifically, the positivity or negativity of the behavioral experience of the self is reflected in autonomy (Deci & Ryan, 1995). According to the Self-Determination Theory (SDT), autonomous actions are manifestations of a secure sense of self and a high level of true self-esteem, and positive self-worth is reflected in agency and proactivity (Deci & Ryan, 1995). In accordance with the SDT, autonomous actions are those that express agency, proactivity, free will, and ownership of behavior.

Second, emotions reflect an individual's personal reality regarding their self-worth (Cognitive-Experiential Self Theory; Epstein, 1993). Specifically, 'self-conscious' emotions are of relevance to self-esteem, which are socially-situated emotions pertaining to the self, such as pride and shame (Tangney & Fischer, 1995). These are in contrast with emotions that are not self-conscious, such as affection or anger (which reflect appraisals of the context and concerns in an immediate relationship; Frijda, 2001).

The positive and negative emotional-behavioral building blocks of self-esteem can best be examined by observing their natural emergence (Ryan & Brown, 2003; Scheff & Fearon, 2004). Rather than decontextualizing self-esteem in a laboratory setting, the current thesis focuses on self-esteem in the context of interaction with a significant other. This is an important context for self-esteem, as significant others play a vital role in the way that self-esteem emerges into a structured state (Fogel, 1993; Tangney & Fischer, 1995), while also providing a practical way to elicit the organic emergence of self-esteem dynamics (Gable, Gosnell, & Prok, 2012; Koerner & Fitzpatrick, 2006).

1.5 Outline of the Thesis

Part I

The first part of the current thesis (**Chapter 2**) considers the nature and origin of state and trait self-esteem from a theoretical perspective. In this part of the thesis we describe the proposed theoretical model regarding the dynamic and nested nature of self-esteem, called the Self-Organizing Self-Esteem (SOSE) model. The model serves as a framework for the remainder of the thesis. The aim of the SOSE model is to describe the internally generated patterns of change that give rise to, and that characterize, state and trait self-esteem phenomena; thereby examining the origin and nature of self-esteem.

The examination of the origin of self-esteem is based on the emotional-behavioral building blocks, introduced above. We describe how, based on principles of dynamics systems thinking (including self-organization, emergent properties, and nested time-scales) the building blocks of self-esteem give rise to state and trait self-esteem.

We describe that the nature of trait self-esteem can be conceptualized as a self-maintaining emergent property, and the nature of state self-esteem as a fleeting emergent property. We also describe the nature of the real-time and long-term circular relationship between the trait and state self-esteem.

Additionally, we compare the SOSE model of self-esteem to the traditional approach to self-esteem, and we discuss what the differences between the two models imply for the conceptualization of the nature of self-esteem as well as for research concerning self-esteem.

Part II

The second part of the thesis is the empirical part, including two chapters. The general aim of Part II is to validate the SOSE model. This is done by empirically examining the internally generated patterns of real-time change, for both state and trait self-esteem.

The empirical chapters in Part II focus on self-esteem in the context of adolescence. Adolescence was chosen, firstly, because it is a significant period for self-esteem development (Robins et al., 2002) and, secondly, because adolescents have been found to exhibit high intra-individual variability of self-esteem (Trzesniewski, Donnellan, & Robins, 2003), with relatively large individual differences therein (Harter & Whitesell, 2003).

In general, therefore, adolescence provides a context in which a lot is happening concerning self-esteem dynamics, and where differences between individuals allow for the understanding of how different types of dynamics emerge and what this might mean. With the chapters in Part II, as yet unexplored aspects of self-esteem variability are investigated, thereby advancing the discussion of self-esteem variability during adolescence. As mentioned above, self-esteem will be investigated in the context of interaction with a significant other. For adolescents, parents are a pivotal significant other for self-esteem development (Allen, Hauser, Bell, & O'Connor, 1994; Bulanda & Majumdar, 2008). Therefore, the dynamics of adolescent self-esteem are investigated as they occur during parent-child interaction.

Part II utilizes an innovative methodological approach to self-esteem. Traditionally, self-esteem is measured using a questionnaire approach, where participants are asked to answer questions such as "on the whole I am satisfied with myself" (Rosenberg Self-Esteem Scale; Rosenberg, 1965). This approach is not effective for studying the real-time dynamics of self-esteem, however (this will be discussed in detail in Chapter 3). To remedy this, self-esteem is measured based on the emotional-behavioral building blocks that organically emerge during parent-child interactions. To quantify the resulting observational data, I developed a coding scheme that was used to decipher the phenomenological meaning of the autonomous actions and emotional expressions that could be observed during the interactions with regard to the adolescents' self-esteem (see Coding Scheme in Appendix).

Chapter 3 focuses on the nature of self-esteem on the meso level of the self-esteem system: state self-esteem. More specifically, we explore the temporal dynamics of state self-esteem that emerge out of moment-to-moment changes of adolescents' positive and negative emotional-behavioral experiences of the self. In this chapter, the hypothesis is tested that the temporal variability of state self-esteem is an intrinsic property of the state self-esteem dynamics. This hypothesis is in contrast to what is traditionally assumed, where the temporal dynamics of state self-esteem are seen as more-or-less random and contextually based fluctuations that occur around a stable baseline level.

In **Chapter 4** we introduce an empirical approach to trait self-esteem as an emergent macro-level self-esteem construct that manifests itself in real-time. In order to demonstrate the manifestation of trait self-esteem in real-time, we investigate its real-time dynamics with state self-esteem. We test whether individual differences regarding the nature of the interactions between trait self-esteem and state self-esteem correspond with individual differences regarding the influence that parents have on the adolescents' self-esteem. In this chapter, the hypotheses regarding this correspondence are grounded in complex dynamic systems thinking.

Part III

In Part III an important conceptual distinction in self-esteem is discussed: implicit self-esteem versus explicit self-esteem. In **Chapter 5** we describe how the nature of this distinction can be conceptualized from the framework of the SOSE model. In doing so, two dominant perspectives of the implicit-explicit self-esteem relationship are integrated that have been traditionally viewed as being competitive.

The aim of Part III is more explorative than it is conclusive. My hope is that Part III of this thesis serves to begin a scientific discussion regarding the nature of implicit and explicit self-esteem from a complex dynamic systems perspective, where the SOSE model provides a framework from which this can be done.

In **Chapter 6** I will summarize and integrate the theoretical work and the empirical findings from this thesis. I will focus on the contribution that the thesis makes in conceptualizing self-esteem as a dynamic system that behaves according to the principles of the complex dynamic systems perspective, and how this conceptualization allows us to understand the nature and origin of self-esteem based on its underlying processes. I will discuss the implications that this conceptualization has for future self-esteem research, as well as the limitations of the current thesis.

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Chapter 1 - Introduction

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Part I

The nature and origin of state and trait self-esteem from a theoretical perspective

