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A THEORY OF AFFECTIVE EXPERIENCE

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ABSTRACT
Theory that informs and invigorates designers in how to think about, research and understand human experience is increasingly important to the development of the field of design(Demir, Desmet & Hekkert 2009). In this paper I seek to contribute to the discourse in this area by presenting Affect Control Theory(Heise 1979, 2006) as an explanatory theory with substantial utility to the area of affect, emotion and design. Affect Control Theory is a theory of social interaction that suggests our desire to maintain affective meanings about the world is central to explaining and understanding how we feel, what we do and the emotions we communicate in social situations. In this paper I describe the Affect Control Theory framework and then start to open up its potential for research, practice and understanding in design. I suggest the theory's key premises of impression formation and affective control, coupled with the freely simulation program Interact, could be the basis of exciting developments to the area of affect, emotion and design.

Keywords: emotional design, experience design, human behaviour in design, environmental psychology, affect control theory

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1 INTRODUCTION

Theory that informs and invigorates designers on how to think about, research and understand human experience is increasingly relevant to the development of the field of design (Demir, Desmet & Hekkert, 2009; Postma, Lauche & Stappers, 2012). Of particular interest over the last decade is the importance of people's affective and emotional experience of designed objects (Desmet & Hekkert, 2009). Affective experience is conceived as central to how people use, understand and interact with designed objects (Norman 2003). This paper seeks to contribute to this growing discourse by presenting Affect Control Theory as an innovative social psychology theory for understanding and explaining people's affective experience in situations that may have substantial utility to the area of affect, emotion and design. Affect Control Theory has the potential to locate and explain people's experience of design within the broader social context.

Heralding the rise in interest of user affect and emotion in design were a number of influential books written around the turn of the twentieth century including those by Norman (2003), Jordon (1999) and Desmet (2002). These books articulate the importance of understanding user affect and emotion for good and inspiring design. Subsequently, a body of literature, research and tools have emerged to support designers in understanding and incorporating considerations of affect and emotion in design. Prominent in the literature are frameworks that aim to provide designers with ways of conceptualizing how affect and emotion can be considered in the design of products (Van Gorp & Adams, 2012). Many of these frameworks have a similar tripartite structures (Van Gorp & Adams, 2012), drawing on concepts from psychology to suggest different levels of affective experience that should be targeted when designing for emotion. Norman's framework includes the levels of visceral, behavioral and reflective design, while Desmet and Hekkert (2007) articulate a framework for design of aesthetic experience, experience of meaning and emotional experience. Another approach that is prominent in some areas of design is the Kansei or affective engineering approach (Harada, Lee & Stappers 2000). Kansei engineering has evolved into a rigorous methodological approach that quantitatively associates affective qualities with particular product design elements or configurations.

While an impressive research and practice literature on affective experience is emerging in the design field, with a vast array of design tools on offer, theory that provides an integrated and coherent way of explaining people's affective experience is more limited. While Norman's (2003) and Desmet and Hekkert's (2007) frameworks are useful for designers to think about how they can productively interact with affective experience in the design of products – these are undoubtedly frameworks rather than theories. They provide a basis for thinking about design but do not provide a theory through which designers and designer researchers can understand and generate working hypotheses about how people experience design in particular situations. While a literature is developing in design around cognitive appraisal theory, the focus on emotions provides a relatively narrow perspective on people's affective experience. It is in this context Affect Control Theory is explored as an explanatory theory of affective experience that may have substantial utility to the area of affect, emotion and design.

In overview, this paper first introduces and provides a basic description of Affect Control Theory drawing on how the theory is typically presented in social psychology. Once a basic understanding is established, a number of potential ways the theory could be developed and applied in the area of affect, emotion and design are considered. The paper is purposefully exploratory with the overall objective being to introduce and engage design researchers in thinking about the potential of the theory, rather than articulating a rigid model for its application in design research at this early stage.

2 AFFECT CONTROL THEORY

Affect Control Theory (ACT) is a theory of social interaction that suggests our desire to maintain affective meanings about the world is central to explaining and understanding how we feel, what we do and the emotions we communicate in situations. Originating in the fields of social psychology and sociology, Affect Control Theory was conceived by David Heise more than 30 years ago and continues to be developed, tested and applied by researchers in a wide variety of fields (Averett & Heise, 1988; Friedkin & Johnsen, 2002; Smith, 2002; Tsoudis, 2000). It builds on concepts from a number of areas of research and theory including Perceptual Control Theory (Powers, 1973), Symbolic Interactionism (Goffman, 1964) and the work of Osgood and colleagues on affective meanings (Osgood, May, & Miron, 1975).

In social psychology Affect Control Theory is recognized as one of the most comprehensive frameworks for understanding people's affective, behavioral and emotional experience in social situations (Kemper 1991). One of the unique qualities of ACT is that it has been formalized in a freely available simulation program, Interact (Heise, 2006). Interact utilizes the results of ACT research in different cultures on how people typically feel about a vast array of different concepts in isolation and in different social contexts. Users of the program are able to create social events by selecting different actors, behaviors and settings and then, based on the theory, explore how people are likely to feel and behave, and what their emotions may be in these social situations.
In the next sub-section that describes the basic Affect Control Theory framework the examples of how ACT conceptualizes affective experience will be derived from the actual output of the Interact program's simulation of the event 'a boss pleads with an employee in an office'. The data in the simulations comes from Francis and Heise's (2003) survey of 1027 university students in Indiana, US. The office event was chosen due to the likelihood that many readers would be familiar with office environments, in addition to offices being an environment that is changing rapidly with technological developments and so is a prospective area for the design of new products. At the end of the next section, and once the reader is more familiar with the basic ACT framework, a more detailed description of the Interact program is provided.

2.1 The Basic Framework

Events, affect and sentiments

Interpersonal events at the most basic level are represented in ACT as including an actor, a behavior, an object-person and a setting. The actor is the person doing the behavior, the object-person is the person to whom the behavior is directed towards, and the setting is the social-physical context in which the event is happening. When people experience events they assign identities and labels appropriate to the context to the different event elements that carry both connotative and denotative meaning. For example, in the event 'a boss pleads with an employee in an office', identities are assigned to the people and labels to the behavior and the setting. This conceptualization of events is based on linguistic research of commonly used event structures in language, while also being similar to the typical structure for scenarios found in design research (i.e. user, interaction, product, context (Nicolas et al, 2011)).
In events, affect is considered as central to how people perceive, understand and interact. Operating at a pre-conscious level, affect provides people with an abstract but common metric for perceiving and collating meaning about a wide variety of concepts relevant to events, including identities, behaviors, settings and experiences. ACT has drawn on the prolific research of Osgood and colleagues to conceive and operationalize affect within the theory (Osgood, May & Miron, 1975). An adapted version of Osgood's semantic differential scales (shown below) are used to measure and create numerical approximations of the affective sentiments people ascribe to a wide range of concepts on the underlying universal affective dimensions of goodness, powerfulness and liveliness (Heise, 2010). Through using these scales any concept can be described in terms of values that represent how good or bad (evaluation dimension), powerful or weak (potency dimension) and lively or slow (activity dimension) the concept is perceived to be. The example rating in Figure 2 is for the concept 'a boss'.

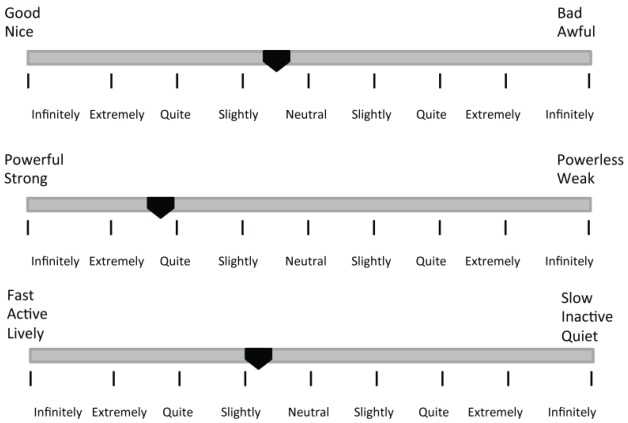

Figure 2: Semantic differential scales used to assess affect in Affect Control Theory

Important to understanding how Affect Control Theory conceptualizes people's functioning in situations is the notion of people having two types of feelings for elements in events; fundamental sentiments and transient sentiments (Heise 2007). Fundamental sentiments are the enduring feelings or meanings people form about concepts based on past experience or knowledge. Fundamental sentiments give people a sense of predictability by providing a guide of how elements are likely to be experienced. In contrast, transient sentiments reflect actual affective experience of an element in a particular situation, and may differ from past experiences of the element (Smith-Lovin, 1987). Transient sentiments or impressions provide people with a momentary gauge of what a person, behavior or setting is like in the context of a specific event (and resonates broadly with concepts of Kansei and visceral or aesthetic experience in design). As described later, in Affect Control Theory, it is the difference between people's fundamental and transient sentiments (both assessed using the same scales presented in Figure 2) that motivates much of people's behavior, cognitive processes and emotion (Heise 2007).

Core Processes

In social events Affect Control Theory suggests two core processes are critical to understanding people's experience and behavior. The first process is impression formation (Heise, 1992). Impression formation is the process relating to how people form transient sentiments (or impressions) about elements (actors, behaviors, object persons and settings) when they come together in events. Based on the findings of numerous studies (Heise 1992; Smith-Lovin,1987), ACT contends that the fundamental affective sentiments we have for the people, behavior and setting out of context of an event influences the impressions we form about the elements when they combine in an event (Heise, 1992). In ACT research, and in the Interact program, the vast array of interactions between people's fundamental and transients sentiments is taken into account when considering people's affective experience of events.

In the example of the event of 'a boss pleading with an employee in an office', fundamental sentiments for the four elements in the event can be described as follows:

- 'boss' is a very powerful and active identity
- 'plead with' is a bad, weak behavior
- 'employee' is a good and active identity
- 'office' is a good, powerful and active setting

When these four elements combine in the event, our fundamental sentiments for these elements impacts on the impressions we form about the 'boss', 'employee', the 'behavior' 'plead with' and the setting 'office'. For example, after this event we are likely to perceive the 'boss' as having considerably less power and liveliness because he has engaged in a bad, weak behavior towards a good person in a positive setting. Our impressions of the 'employee' and setting may also change so they seem worse and less powerful as they have been subject to bad, weak behavior from a strong person. Conversely, our impressions of the behavior 'plead with' may 'affectively' be less bad and weak as it is being enacted by a strong person towards the good identity. While simplified, this example does provide a sense of the complexity of the interactions and influences Affect Control Theory posits as underlying our experience of events.

The second core process is affective control (Heise, 2007). A key premise of affect control theory is that in social interactions people seek to have affective experiences consistent with their affective expectations. In terms of ACT concepts this equates to people wanting their transient sentiments to confirm their fundamentals sentiments for the different elements and themselves in events. In social situations people generally seek to minimize differences (called deflections in ACT) between their transient and fundamental sentiments. In the office event example a deflection would result because the behavior 'plead with' is not consistent with the identities of the people or the setting. As described in the above discussion on impression formation, this event would lead to impressions of the boss, employee, behavior and setting that are different to our fundamental sentiments for these elements.

When an event leads to deflections we internally experience it as stress or tension, motivating us to reduce the deflection (Heise 2007). ACT proposes people seek to reduce deflections by either using modifiers to alter fundamental sentiments, behaving in a way that changes impressions or, when either of these are not possible, changing the identity or concept labels for elements in the situation (Heise & Weir 1999, p. 140).

The use of modifiers to reduce deflections relates to the process whereby we assign additional descriptors such as moods, traits or characteristics (i.e. adjectives) to our fundamental sentiments for

identities (and other elements) (Heise 2007). When combined with an identity (i.e. angry employee) these additional descriptors change the fundamental sentiments associated with the element. The intention is that the modified fundamental sentiment will make more sense of the recent event and reduce deflections by increasing the likelihood of our future experiences, reflecting our fundamental sentiments (albeit now modified). In the example of the boss pleading with an employee, we may assign the attribute of 'petty' to the identity for employee as it reduces the deflection resulting from the event. A 'petty employee' is a worse and weaker identity making it more 'affectively' believable that a boss would engage in the negative, weak behavior 'pleading with' in this situation. We assign modifiers so situations make more sense!

Another way ACT proposes people seek to reduce deflections is through behaving and creating new events to generate impressions of themselves, other people and the setting that are more consistent with their fundamental sentiments. What people do in social situations is suggested to be driven by the desire to create events that are likely to confirm their fundamental sentiments. When we or other people behave in a way that leads to deflections, we will seek to create events that bring our impressions back in line with our fundamental sentiments. In the example of the boss pleading with an employee, in response to this event the employee may use a very good, strong behavior such as 'chat with' to create positive impressions more consistent with their fundamental sentiments for their boss, the office and themself. Conversely the boss may engage in a good, very powerful behavior such as 'defend' so as to create impressions of themself as very powerful, but also leading to positive impressions of the employee.

In some situations our experience deflects so widely from our expectations that using modifiers or creating new events is unlikely to control our affective experience. In these situations ACT suggests people will try to assign new labels to the identities of the people, behavior or setting. We will try to assign a new identity or label that is associated with fundamental sentiments that better reflect our experience of the elements in the event. In the example of 'a boss pleading with an employee in an office', we may change the fundamental identity label for the boss or employee. For example, in terms of office related identities we may assign the boss the new identity of 'yes-man'. Affectively bad and weak, a 'yes-man' is more likely to engage in the bad and weak behavior of 'pleading with' an employee. Alternatively, assigning the employee with the identity of 'novice', a neutral and slightly weak identity, reduces the deflection as the 'pleading with' behavior is now more consistent with the person the behavior is directed towards.

Emotions

Emotion is the last facet explained in this basic description of the Affect Control Theory framework. Emotions are physical feelings (anger, love, sadness, joy) that viscerally reflect to the person and to others (through emotional displays) how the situation impacts on a person's identity (Heise, 2006, pg 57). In terms of ACT concepts, emotions result from the relationship between our transient sentiments (experience) of ourselves in the event and the fundamental sentiments we hold about ourselves. Conceptually, emotions are different to sentiments as they are self-referential - however the meaning assigned to emotions has the same underlying affective structure of goodness, potency and activity. As an example, the 'boss' in the office event is suggested to feel 'exasperated' or 'impatient' because 'pleading with an employee' makes them feel worse and much less potent than how they fundamentally view themself as a boss.

In contrast to many theories of emotions, Affect Control Theory does not view emotions as in themselves motivating behavior. People's behavior is not motivated by the experience of an emotion (anger, frustration, joy), but by the desire to confirm their fundamental sentiments for the situation (and minimise deflections). Heise (2007, pg 60) provides the following example and explanation related to the experience of jealousy:

> "For most people a flash of jealousy signals that events have made one seem less good and more vulnerable than is warranted by one's own identity in a relationship. To restore the usual valued and potent sense of self, one might engage in some affectionate behavior toward a loved one – for instance, hugging or caressing one's sweetheart. So jealousy is followed by predictable behavior, but the relation between the emotion and the behavior is oppositional – agreeable behavior follows the disagreeable emotion."

In psychology (and in design) emotions are often proposed to motivate and elicit behavior that is affectively consistent so that a person who experiences jealously behaves vindictively, or an angry

person behaves violently (Heise, 2007). ACT suggests this is not necessarily the case, and often the opposite is true as it is for the 'boss' in the office event example. Although the boss is suggested to experience bad and weak emotions like 'exasperated' or 'impatient', the boss is considered likely to enact a good, very strong behavior such as 'defend' or 'aid'. The boss behaves in this way because they want to restore their sense of power about themself, and goodness about the employee and the setting. As such, Affect Control Theory does not consider the emotions experienced in events to directly motivate our behavior – the control of affective experience motivates behavior. It is when emotions become assigned to an identity as a mood (i.e. an exasperated boss), altering our fundamental sentiments for the person, that they are more likely to elicit affectively consistent behavior. However, the experience of the emotion 'exasperation' in a situation is quite different conceptually to the experience of a more enduring mood.

Interact – playing with and exploring affective dynamics

Throughout the above description of the ACT framework we utilized the Interact program's analysis of the event 'a boss pleading with an employee in an office' to illustrate the key premises and concepts of theory, as previously indicated. Some additional information about the program is now provided as it will be useful context to the discussion about possibilities for design in the next section. The simulation was conducted using Interact's java-based online interface and specifying from dropdown menus the actor, the behavior, object person and setting. I used the USA Indiana data set (Francis & Heise 2003) that includes sentiments for 500 identities, 500 behaviors and 200 settings from 1027 respondents. Nine other data sets are available from research in a range of countries (Germany, Ireland, Japan, China and Canada). A screen shot of the results from the analysis of this office event is shown in Figure 5 showing the emotions and behaviors referred to in the above description. Using Interact and currently available data you can explore many other aspects of experience including the influence of moods and traits, differences in experiences based on gender or culture or types of behavior people may engage in to feel different emotions in situations (Heise, 2007).

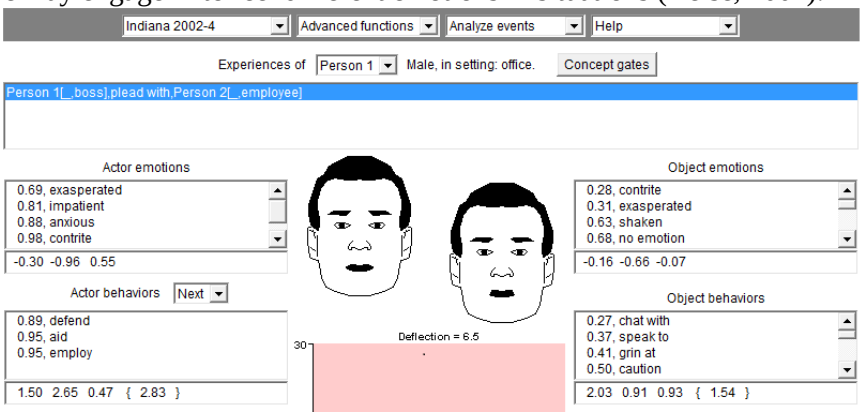

Figure 5: Interact simulation of the event 'a boss pleads with an employee in an office'

3 INITIAL POSSIBILITIES FOR DESIGN

This section outlines some initial proposals about how Affect Control Theory may have utility for design and, more specifically, the area of affect, emotion and design. As indicated previously, the intention here is not to be prescriptive but to explore and open up some possibilities for how design practitioners and researchers could use or develop the theory. In this discussion I will draw and refer to previous research that has started to explore some specific intersections between design and Affect Control Theory (Lulham 2007; Shank 2010; Troyer 2004).

3.1 Exploring affective qualities of social scenarios

The development of a broad understanding of the context is regarded as an important process when tackling a design problem (Dorst 2011). Affect Control Theory, and more specifically the program Interact, may be a useful and novel method for designers to explore social scenarios related to design problems (Postma, Lauche & Stappers 2012). For example when tasked with designing office chairs for a company, Interact could be used to explore the differences and similarities of common office identities such as bosses, managers, secretaries, project workers and employees. In another example of designing alternative shopping checkout systems, Interact could be used to simulate purchasing

scenarios to explore behavioral and emotional interactions expected between a checkout attendant and customers. Further, the impact of assigning additional traits or moods such as friendly, agitated or confused to the attendant or customers could be explored to see how these modifiers impact on the affective qualities of interactions. This type of exploration could be undertaken using the online version Interact, and while it is not going to specify a design solution, it may assist designers in thinking about the social context of the design problem, and in so doing, facilitate its resolution (Dorst 2011; Postma, Lauche & Stappers 2012).

3.2 Affective correlates of design objects

A simple but interesting use of the Affect Control Theory research data in design is to explore those concepts that affectively correlate with the qualities of design objects. This approach would involve exploring what identities, behaviors and modifiers in the ACT concept libraries have similar affective characteristics to particular design objects in terms of goodness (evaluation dimension), powerfulness (potency dimension) and liveliness (activity dimension).

To provide an example data collected by Shank (2010) on university students' fundamental sentiments about technology related concepts and the Indiana ACT concept library are used to explore what concepts affectively correlate (have similar affective qualities) with sentiments for Mac and Windows PCs. Descriptively, fundamental sentiment for Mac computers were very good, powerful and very active, while for Windows PC computers sentiments were still affectively good, powerful and active, but somewhat worse, more potent and less active than Mac. Table 1 provides the results of this exploration with the identities, behavior and modifier concepts with the most similar affective qualities to MAC and Windows PC computers out of the more than 1000 concepts in the Indiana library. Concept similarity was defined based on concepts having underlying numerical values on the three affective dimensions close to those for either MAC or Windows PCs. As shown in the table, the concept correlates for Mac and Windows PCs start to tell a story about the differences between how people affectively view these two products. Mac computers are close to concepts such as 'playmate', 'dance with' and 'young', while Windows PCs are similar to concepts such as 'schoolteacher', 'talk to' and 'cooperative'. Similar analyses for affective qualities of cars verses sport utility vehicles (SUV) also develop meaningful correlates with cars associated with the concepts 'organizer', 'ask out' and 'dependable' and SUVs the concepts 'boss', 'celebrity' and 'authoritarian'.

Table 1: Affective correlates of Mac and Windows personal computers.

	MAC computer very good, powerful and very active	**Windows computer** good, powerful and active
identities	honeymooner	uncle
	playmate	schoolteacher
	wife	heterosexual
	buddy	guy
behaviours	drink to	reply to
	dance with	talk to
	joke with	collaborate with
	play with	join up with
modifiers - adjectives	young	White
	horny	euphoric
	playful	cooperative
	cheerful	moved

The use of ACT data in this way could assist designers in developing metaphors to facilitate their understanding of how products are currently perceived, but also as a basis for thinking about alternative meanings and experiences of products. Indeed, while in the above examples I explored the affective correlates of different product categories, with additional data on the affective qualities of different design features, it would be possible to explore the correlates of actual design features within product categories (i.e. different SUVs). Such an approach to using Affect Control Theory data would have some similarities with the Kansei engineering approach (see Harada et al (2000)).

3.3 Incorporating and understanding design in the model

Integrating design elements into the Affect Control Theory model may open up some important possibilities for exploring people's affective experience of products in social contexts. By incorporating products into ACT event structures it would be possible to explore how design influences the impressions of other elements in social contexts, and how control processes influence our behavior and the assignment of meaning (labels) towards designed products. In this section I outline thoughts about how this may be done, and the potential implications for understanding how people's affective experience relates to product design.

Currently the basic elements specified in the ACT event frame are the people, behavior and setting. It is, however, plausible that products could be included in event frames as elements people interact with. Troyer (2004) and Shanks (2010) both conducted research that explored whether people interacted with technology products such as computers, phones and recording devices as social actors or objects. They both found strong support for the notion of people interacting with technology products in a similar way to people – participants had fundamental sentiments and affective experiences of these products similar to those in human interaction. Based on this research it is reasonable to assume that other types of products could be considered elements in event frames.

Impressions of design objects in context

When products are conceptualized as elements in the ACT framework it necessitates considerations of how the product influences, and is influenced by, the affective characteristics of the people, behavior and setting through impression formation processes. In the literature on affect and design there is some recognition of the impact of context on affective experience of products, but it is rarely explored or articulated in any depth. Within the Affect Control Theory framework, understanding impression formation processes related to the product would be central to explaining affective experience and is a very interesting area for research. For example, in the event of a teacher working on a Mac computer at a school, it suggests exploring how people's affective sentiments for a Mac computer impacts on impressions of the teacher, pupils and the school (and vice versa).

In some social situations and for some products, however, it may not be plausible to consider products as actors or person-objects in event frames. Products may be better considered items or tools that are associated with specific people, behaviors or the setting in the event. For example in the event 'a doctor wearing an Armani suit abuses a waiter in a café', the Armani suit may be best considered as a modifier with affective meaning that when combined with the 'doctor' identity leads to a different fundamental sentiment for the person in the situation. Similarly products associated with behaviors, such as the type of car (Honda sedan, Ferrari) being associated with the behavior driving, may be best considered behavior modifiers.

Affective control of design objects

Situating products within the Affect Control Theory framework also provides the opportunity to examine affective control processes as they relate to our experience of products and other design objects. In terms of understanding and explaining the experience of products, the affective control construct has many potential implications. In this instance rather than explore a number of different possibilities, I will use the construct of affective control to re-interpret a common presumption made about people's interaction with products. Norman (2004) makes the assertion that people are better able to use products, and resolve problems of use, when product design elicits positive emotions in the user. It draws on research that suggests when people receive a gift in a laboratory environment, eliciting positive affect, they are better able to solve problems than those who do not receive a gift (Isen, Daubman & Nowicki 1987). In the design literature it is the positive emotion that is attributed with resulting in the user being better able to resolve problems when using the product.

A hypothetical example applying this rationale can be constructed of a person operating a Mac computer that has delightful aesthetic product design, and a person operating a standard Windows computer, with the assumption that all other aspects (operating system etc.) of the computers are the same. They both experience a problem with the operating system. When using the Mac computer the person is better able to resolve problems with the operating system in comparison to when the person uses the Windows computer. The typical explanation is the delightful design of the Mac computer elicits positive emotions such as 'pleased' leading to a cognitive state in which they are better able to solve problems. While there may be a basis for this proposition based on cognitive functioning, Affect

Control Theory offers an interesting alternative explanation when the computer is regarded as an element in a social event.

The Affect Control Theory explanation is the person using the Mac computer is better able to solve problems with the operating system because they are controlling positive fundamental sentiments for the delightfully designed Mac computer. When the Mac computer 'creates a problem' (acts badly), the person's transient impressions of the computer will be worse than their fundamental sentiments creating a deflection. It is the tension created by the deflection that motivates the person to solve the problem with the computer so their experience of the Mac computer is again positive and consistent with their fundamental sentiments. Conversely the person operating the normally designed Windows computer will have less positive fundamental sentiments so that the Windows computer 'acting badly' leads to a smaller deflection and less intrinsic motivation to solve the problem.

4 CONCLUSION

In the literature on design, affect and emotion there are a number of similar opening narratives to the one I provided in this paper. Many recent articles start by establishing the importance of affect for design, but then suggest the literature is characterized by a number of competing or unclear concepts and gaps in understanding (Demir, Desmet & Hekkert 2009; Desmet & Hekkert 2007; Van Gorp & Adams 2012). Most often a framework or model is then suggested to resolve some of these issues. In the current instance I propose Affect Control Theory as an alternative theory for conceptualizing affect, emotion and design. This pattern of critique, concept clarification and generation is likely indicative of the relative newness of the (more explicit) focus on affect in design, and as such is critical to the development of the field. It is in this developing context I present Affect Control Theory as an explanatory theory that may add to the discourse while resonating strongly, and possibly integrating, some of the key concepts in the field.

Affect Control Theory is an explanatory theory that integrates understanding about people's affective experience in situations. While the design field has a number of frameworks that highlight important concepts for designing, there are only a few explanatory theories of affective experience. Affect Control Theory elevates the control of affective experience as central to understanding how people feel, what they do and think, and the emotions they experience in social situations. It provides a way of understanding how the affective meanings we develop through past experience operate as reference levels for future experience. Much of the design literature focuses on emotion as the outcome in considering the affective experience of products (Desmet 2002) – Affect Control Theory provides a way of thinking about other affective concepts and how they interrelate in affective experience to motivate behavior and cognition.

The application of Affect Control Theory in design research and practice, however, requires additional development, research and input from designers. This paper has provided a basic description of the theory and started to outline some possibilities for its application in design. A more detailed analysis of current frameworks, models and perspectives in design as they relate to Affect Control Theory is required to better situate the theory in the field. I am sure there are resonances and parallels to ACT in product design that I am not fully aware of. There is a need for initial research to obtain more data on people's fundamental sentiments for a variety of designed products, and people's transient impressions of these design objects in social events. Analysis of this data would be central to exploring how design objects are best conceptualized in terms of impression formation and affective control processes in the Affect Control Theory framework. Finally, if the Affect Control Theory framework is found to have utility for design research, the theory will need 'handles' (Postma, Lauche & Stappers 2012) that anchor the key constructs of the theory for designers. These 'handles' will provide designers with way of thinking about the key concepts that will resonate with how they design and provide a basis for interpreting the design research in product design practice.

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