

On Integrating the Components of Self-Control

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Self-Control





Integrative Model of Self-Control (Kotabe & Hofmann, 2015, PPS)





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On Integrating the Components of Self-Control

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Abstract
 As the science of self-control matures, the organization and integration of its key concepts becomes increasingly important. In response, we identified seven major components of “order” in current theories and research bearing on self-control: desire, higher-order goal, desire-goal conflict, control motivation, control capacity, control effort, and enactment commitment. To unify these diverse and interdisciplinary areas of research, we formulated the interplay of these components in an integrative model of self-control. In this model, desire and an at least partly incompatible higher-order goal generate desire-goal conflict, which activates control motivation. Control motivation and control capacity interactively determine potential control effort. The actual control effort exerted is determined by several moderators, including desire strength, perceived skill, and competing goals. Actual control effort and desire strength comprise a determining governing force, which ultimately determines behavior, provided that enactment commitments do not impede it. The proposed theoretical framework is useful for highlighting several new directions for research on self-control and for classifying self-control failures and self-control interventions.

Keywords
 self-control, self-regulation, willpower, desire, temptation

Science is built up with facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house.
 —John Dewey, *Human Nature and Conduct*

Self-control has fascinated and perplexed many of the great thinkers of our past, dating back to Socrates (470–399 BC), Plato (427–347 BC), and Aristotle (384–322 BC). For millennia, many giants have asked the same questions: How does self-control work? Why do we act on passion when reason knows better? Contemporary psychologists have been investigating the question anew for almost half a century, beginning with Walter Mischel and his colleagues studying the ability of children to delay gratification (Mischel & Ebbesen, 1970; Mischel, Zeiss, & Ebbesen, 1972). Since then, many insights have been made, shedding light, bit by bit, on this unique part of the human condition.

Yet, researchers find themselves overwhelmed by a large collection of facts that do not easily cohere. One major challenge is a consequence of “learning in” so that self-control involves several components that are often studied and discussed in isolation, making it difficult to grasp their interconnectivity. For example, the construct of desire itself has recently received theoretical treatments on how it emerges and operates (Shallice & Van Dellen, 2012; Kuroki, Andrich, & May, 2005; see also Hofmann & Roelofs, 2015). Goals and goal pursuit have a long history in psychology (Carver & Scheier, 1998; Kugelschaid et al., 2012). Interceptive conflict, pertinent to understanding incompatibilities between desire and higher-order goals, has received considerable attention by cognitive neuroscientists (Harmon-Jones, Taylor, Carter, & Gehring, 2003; Carter & Van Veen, 2007). Self-control motivation is a major topic in self-control research (Fazio, 2011; Marston & Swanson, 2010), with some explicitly pitting it against the idea that self-control refers to some depletable (physiological) resource or capacity (Sheeran & Lane, 2012; Inzucht, Schmeichel, & Marten, 2014; Mikkilineni et al., 2012). Others assume depletable self-control resources explain

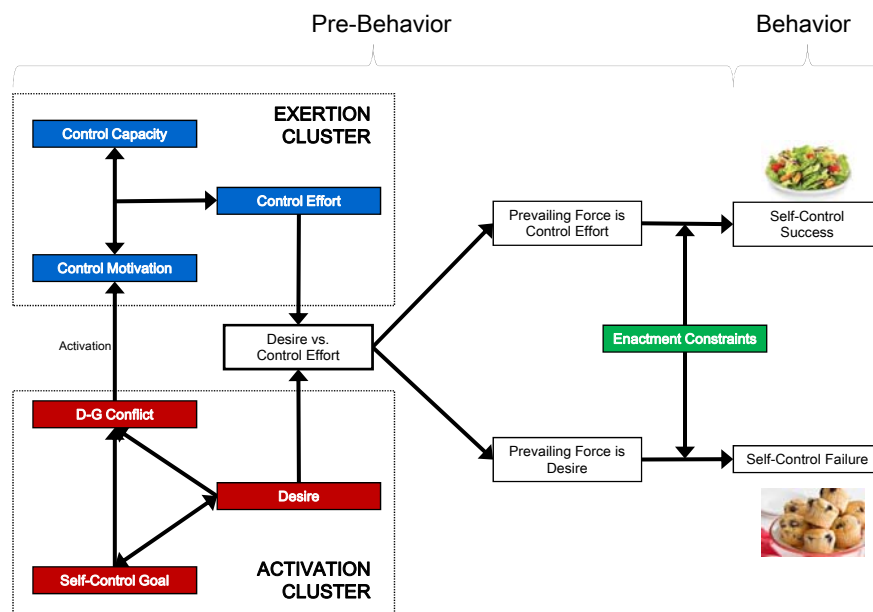
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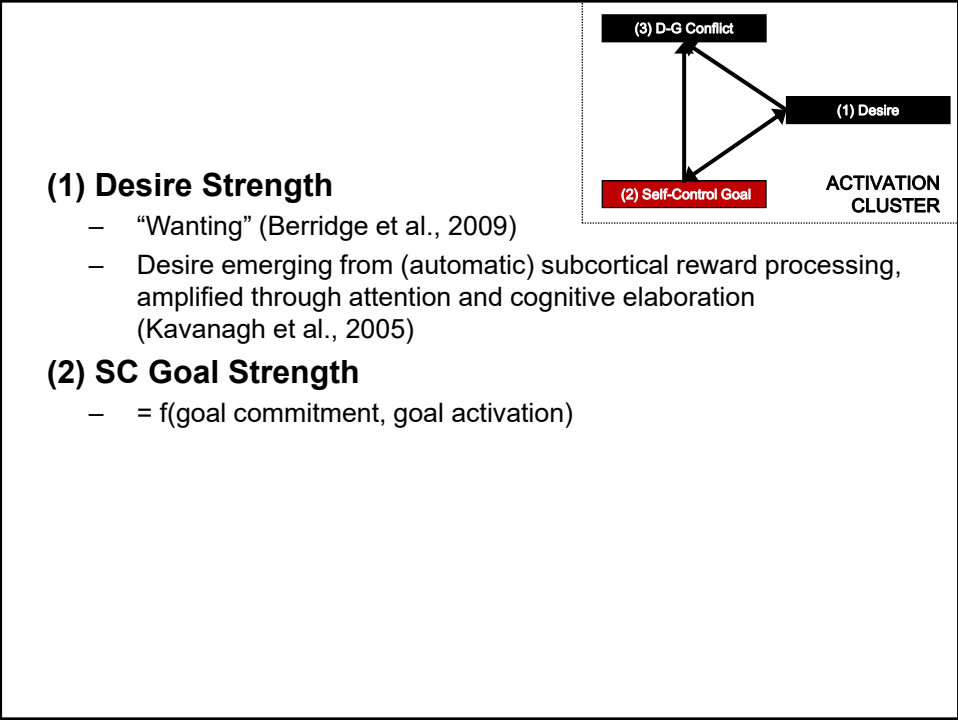
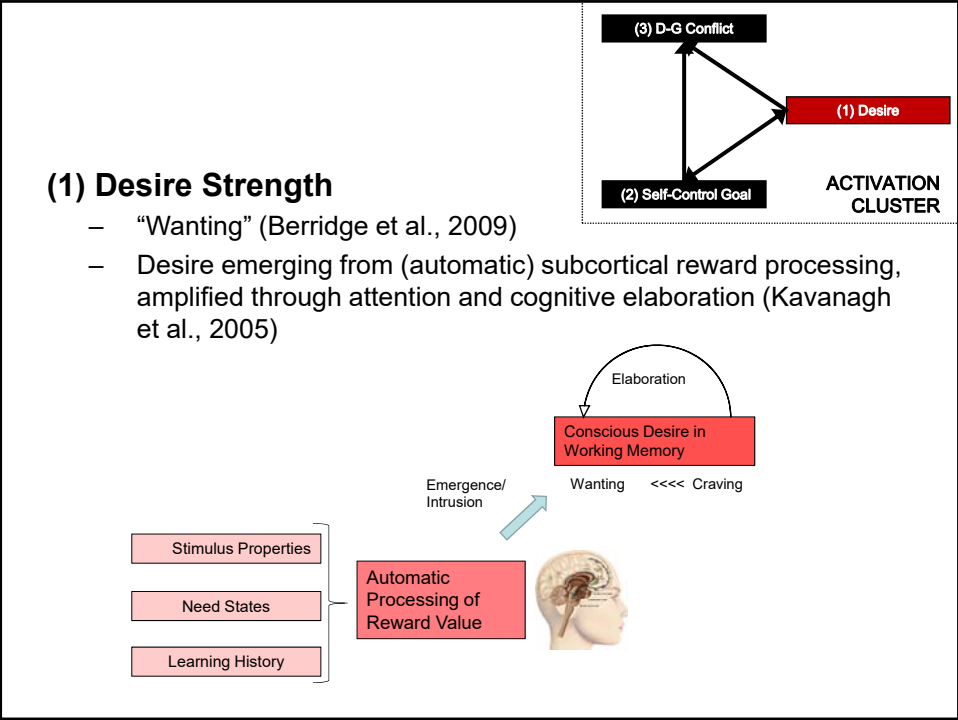


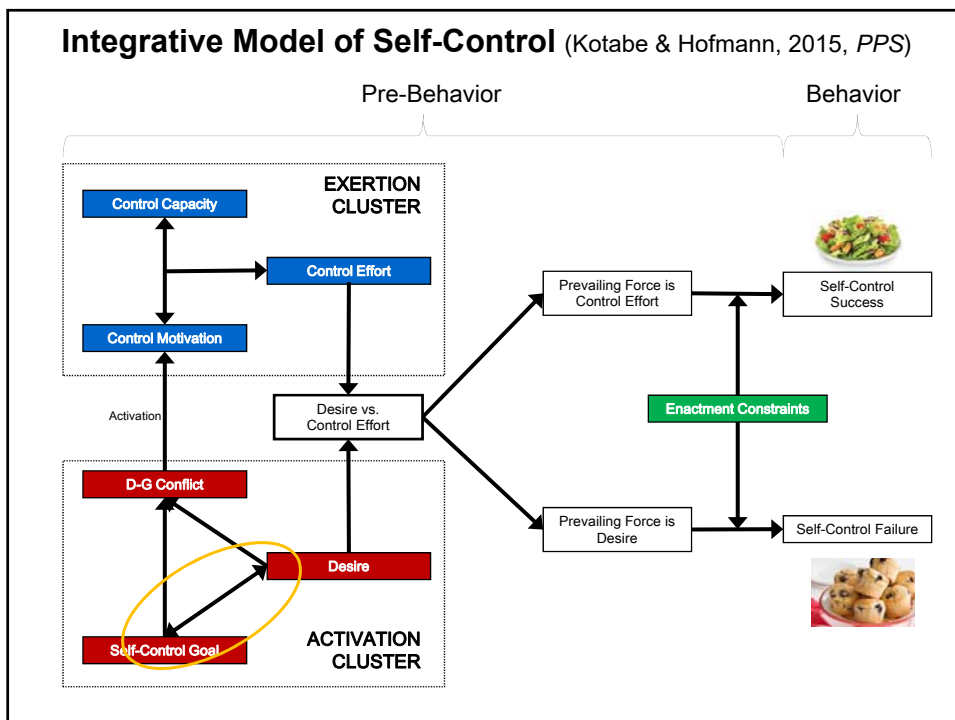
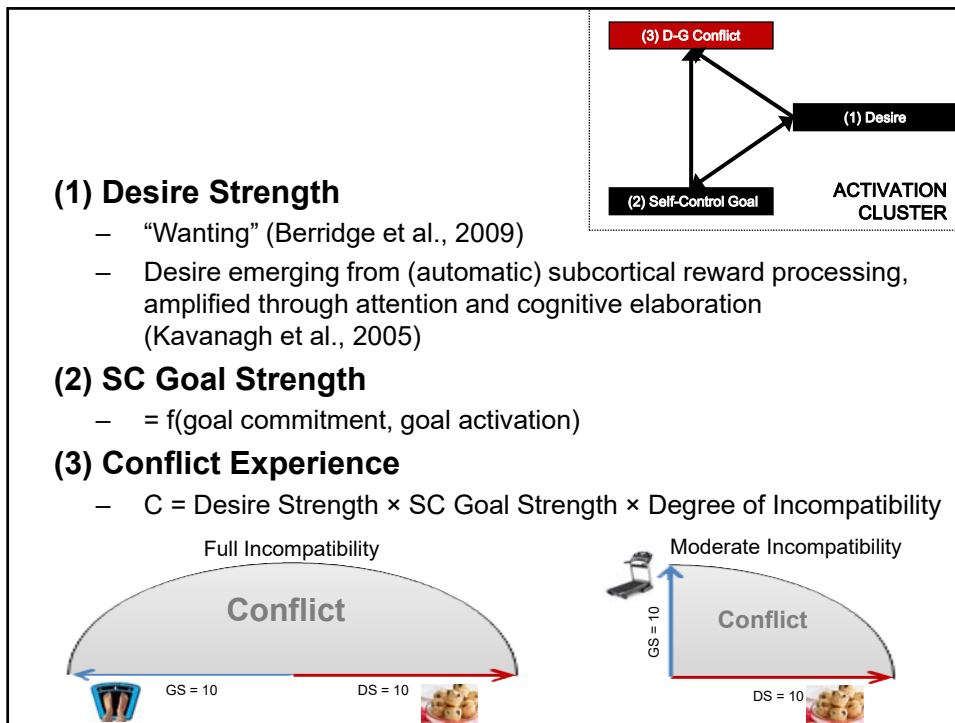
Building on Earlier Insights

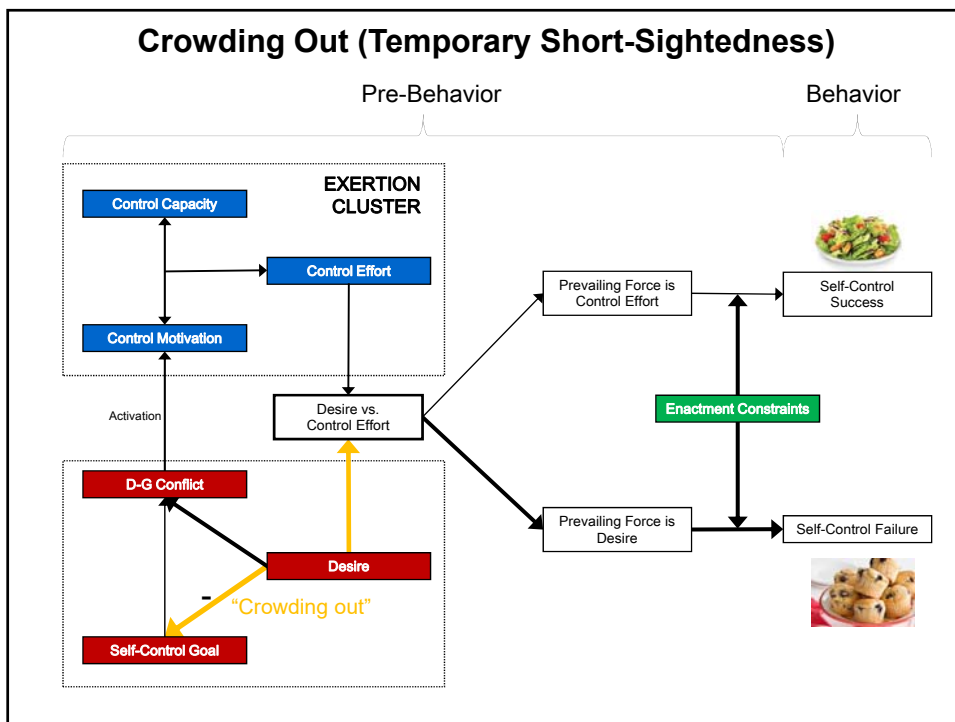
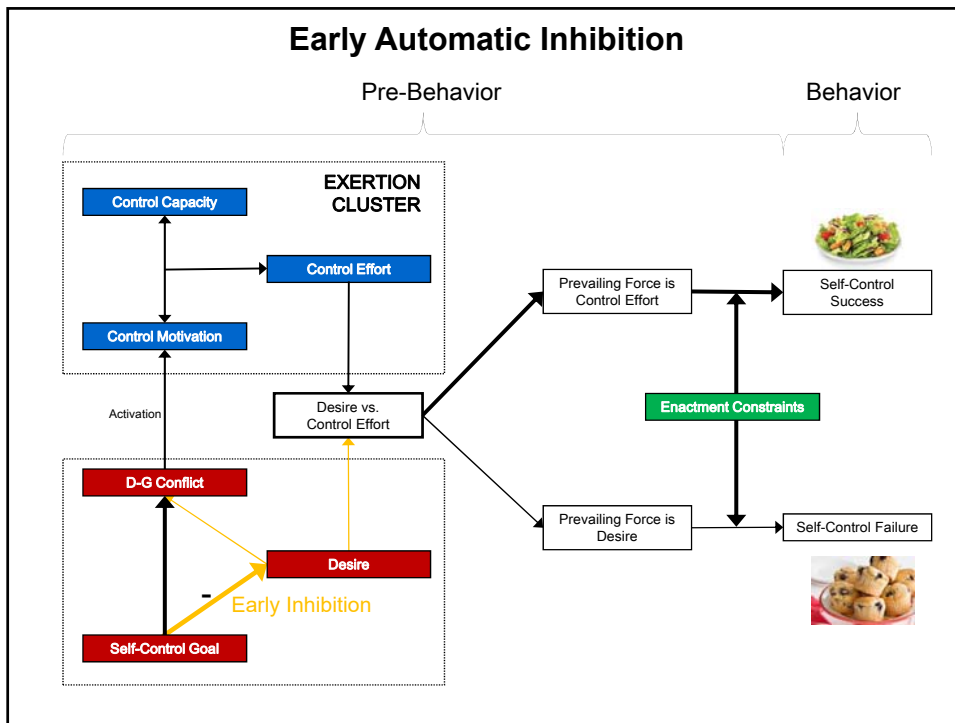
- Elaborated intrusion theory of desire (Kavanagh et al., 2005) & incentive salience model of wanting (Berridge & Robinson, 1998)
- Cybernetic approaches (Carver & Scheier, 1981; Baumeister & Heatherton, 1996)
- Work on conflict monitoring/conflict detection (Botvinick et al., 2004; Inzlicht & Legault, 2014; Myrseth & Fishbach, 2009)
- Executive functioning and resource depletion research (Kane & Engle, 2002; Baumeister et al., 1998; Inzlicht & Schmeichel, 2012)
- Four-component framework of self-control (Hofmann et al., 2012)
- Principles of effort allocation (Brehm & Self, 1989; Gendolla & Richter, 2010)
- Lewinian (1951) field theory principles; cognitive energetics theory (Kruglanski et al., 2012)
- Work on choice architecture (Thaler & Sunstein, 2009) and proactive self-control (Fujita, 2011; Hofmann & Kotabe, 2012)
- [...]

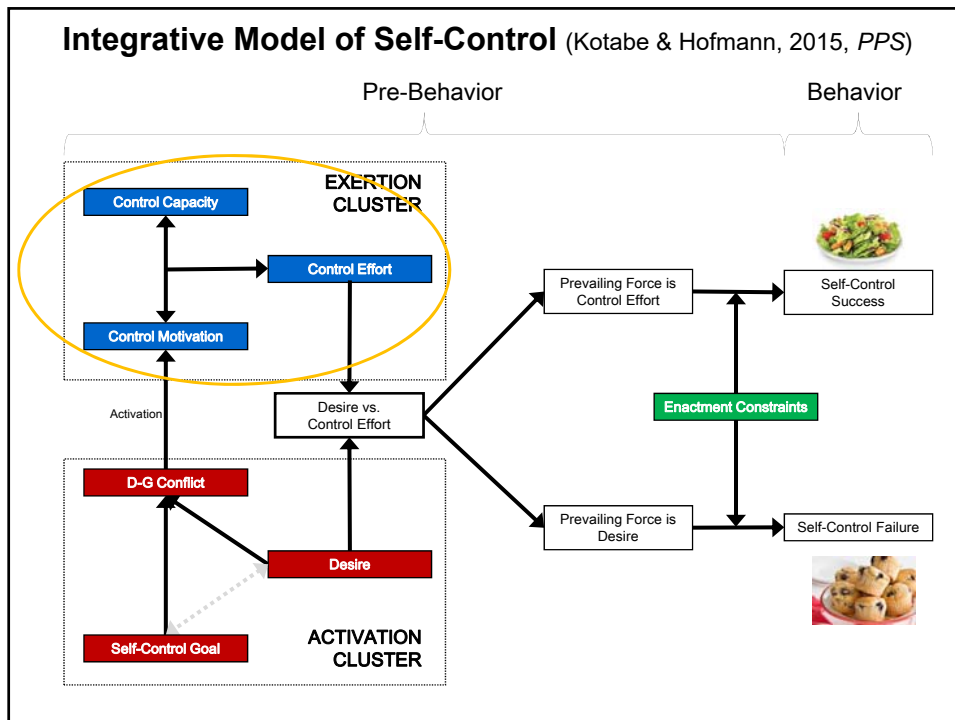
Integrative Model of Self-Control (Kotabe & Hofmann, 2015, PPS)











(4) Self-Control Motivation

- Motivation to control a given desire; willingness to invest SC effort at a given point in time (not identical with SC goal strength)
- Link to self-efficacy (Bandura, 1977)
- Role of lay theories / beliefs (Job, Dweck, & Walton, 2010)
- Problem of motivated reasoning / self-licensing (e.g., De Witt Huberts, Eves, & De Ridder, 2014)
- Problem of balancing (Inzlicht et al., 2014)

EXERTION CLUSTER

The diagram shows the Exertion Cluster with Control Capacity at the top, Control Motivation at the bottom, and Control Effort to the right. Arrows indicate that Control Capacity and Control Motivation both influence Control Effort.

The icon shows a balance scale. The left pan is labeled 'Exploration Leisure Want-to' and the right pan is labeled 'Exploitation Labor Have-to', illustrating the concept of balancing desires and obligations.

EXERTION CLUSTER

(5) Self-Control Capacity

- Link to executive functions (Hofmann, Schmeichel, & Baddeley, 2012)
- Trait and state-level (i.e., temporary) effects

EXERTION CLUSTER

(6) Self-Control Effort

- **Potential Effort** (E_p): Control Motivation \times Control Capacity
- **Actual Effort** allocated to match demands (e.g., desire strength) (e.g., Kruglanski et al., 2012; CET; Gendolla & Richter, 2010) in accordance with principles of effort conservation. People disengage when (perceived) demands $>$ E_p

Control Capacity

Control Motivation

Full potential

Control Capacity

Control Motivation

State capacity reduction

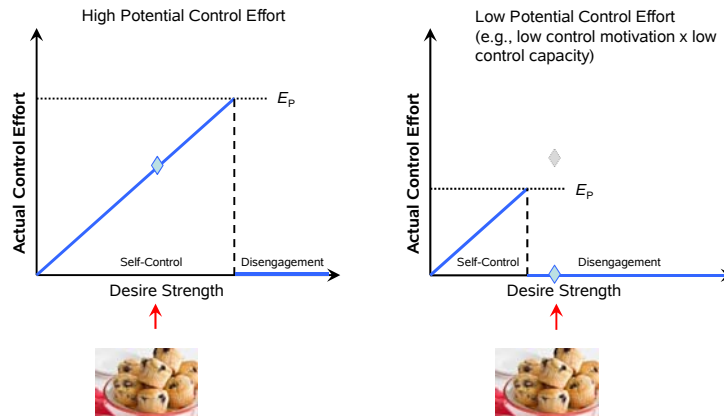
Control Capacity

Control Motivation

State capacity and motivation reduction

Actual Effort Allocation and Disengagement

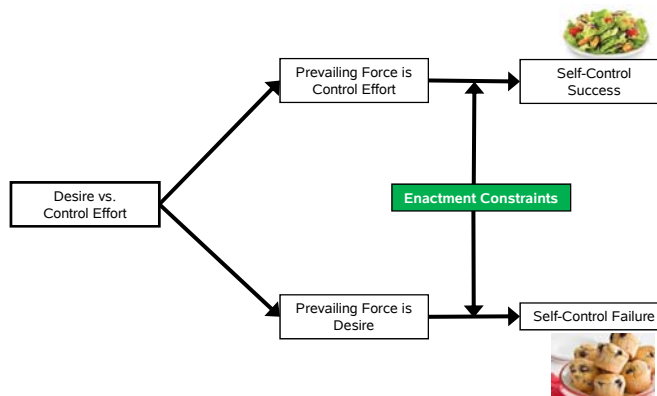
(Brehm & Self, 1989; Gendolla & Richter, 2010)



Kotabe & Hofmann, in E. Hirt (in press) *Self-Regulation and Ego Control*

(7) Enactment Constraints

- Choice architecture/Nudging: Typically a paternalistic (i.e., imposed) measure but can also be self-imposed





Enactment Constraints

(7) Enactment Constraints

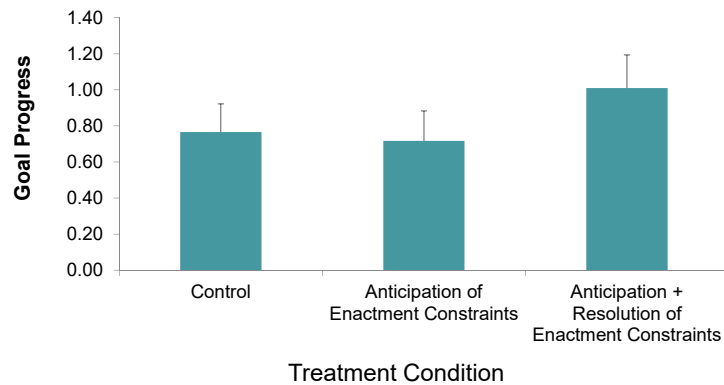
- Desire enactment constraints
 - Situation and stimulus control to forfeit problematic choice options
 - Social interventions (e.g., relationship partner)
 - Help from technology, e.g., smart geospatial sensing (e.g., “you’re too close to a casino”)
- SC enactment constraints
 - Implementation intentions to overcome enactment obstacles (Gollwitzer, 1999; Oettingen & Gollwitzer, 2010)

Nudging Success

(Fishbach & Hofmann, 2016, *Motivation Science*)

High challenge goal domains (80.2% of goals:

Health/fitness, academic/work, financial, activism/volunteering, emotion management, maintenance)



Wrapping Up

- Self-control is not a unitary phenomenon or single essence, but rather an interplay of several components
- Accordingly, there are many routes to self-control failure and multiple soft spots for intervention

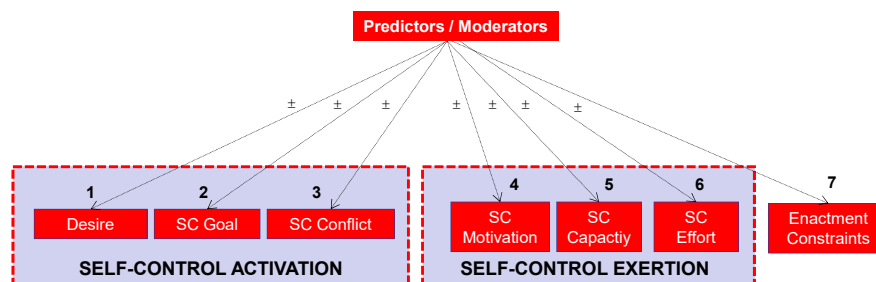
Cause of SC Failure	Intervention Example
Overpowering Desire	Craving reduction techniques
Weak Commitment to SC goal	Risk Education
Low Conflict Awareness	Stop Drinking
Low Control Motivation	Increase Stakes
Low Control Capacity	Train Executive Functions
High SC Enactment Constraints/ Low Desire Enactment Constraints	Lower SC Enactment Constraints/ Increase Desire Enactment Constraints

Connecting the Dots

- Need to better understand interplay among components, such as
 - Desire strength ↔ goal strength dynamics: when do we see activation vs. inhibition?
 - Principles of effort allocation
 - Exact interplay of internal factors and environmental constraints

Applications

- Develop a more complete map of the (many) predictors of core model components
- Pinpoint how certain moderators of self-control success operate



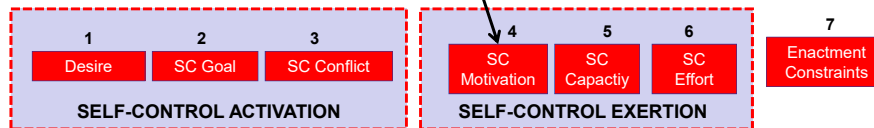
Applications

- Develop a more complete map of the (many) predictors of core model components
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Presence of Enactment Models in Environment



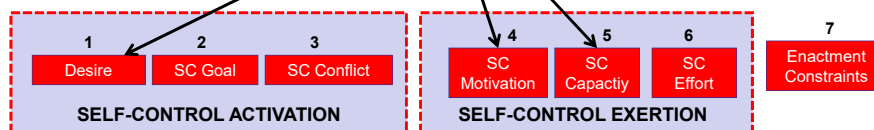
Hofmann et al., 2012



Applications

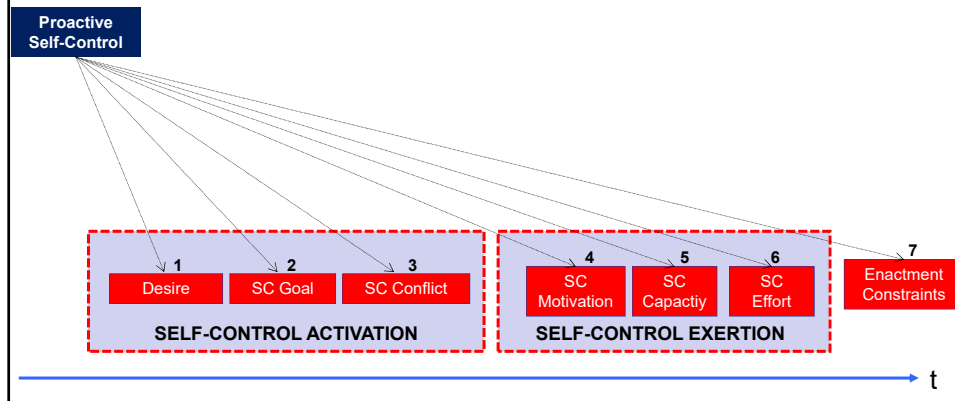
- Develop a more complete map of the (many) predictors of core model components
- Pinpoint how certain moderators of self-control success operate

Ego Depletion/
Prior Self-Control Effort
Investment



Applications

- Classify/identify proactive self-control strategies (Fujita, 2011; Hofmann & Kotabe, 2012)



Thank you very much for your attention!

Collaborators on the research presented:
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Ayelet Fishbach, University of Chicago
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Lotte Van Dillen, Leiden University
Kathleen Vohs, University of Minnesota