

Assessment of Self-Regulation and Related Constructs

Prospects and Challenges

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Intra-Personal Skills

- **talents or abilities that aid the individual in personal problem solving**
- **reside within the individual; operate across contexts & situations**
- **applied across life domains**
 - **social**
 - **health**
 - **academic**
- **contribute to adaptive behavior and productivity**
 - **counteract undesired influences in the person and environment**
 - **support volitional behavior**

Intra-Personal Skills

- **examples**
 - **planfulness**
 - **self-discipline**
 - **delay of gratification**
 - **ability to overcome distractions**
 - **able to adjust strategy or approach as needed**
- **common thread: self-regulation**

Self-Regulation: Definitions

- “the capacity of individuals to guide themselves, in any way possible, toward important goal states” (Fitzsimons & Bargh, 2004)
- “the capacity to plan, guide, and monitor one’s behavior flexibly in the face of changing circumstances” (Brown, 1998)
- “self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals” (Zimmerman, 2000)
- “the process by which one monitors, directs attention, maintains, and modifies behaviors to approach a desirable goal” (Ilkowska & Engle, 2010)

Self-Regulation: Definition

- **the set of processes by which individuals remain on course in their pursuit of goals they have adopted**
- **key considerations**
 - **short- and long-term goal pursuit**
 - **goal pursuit is frequently challenged**
 - **counterproductive impulses**
 - **situational hurdles**
 - **competing goals**
 - **loss of motivation**
 - **remaining on course requires a set of strategies that, collectively, constitute self-regulation**

Self-Regulation: Definition

- **behavior over which the individual exercises discretion**
- **not behavior that is . . .**
 - **contingent on cues in the environment**
 - **attributable to impulse**
 - **strongly influenced by normative pressure**
 - **determined by social, political, or religious dictates**

Self-Regulation: Importance

- **U.S. consumers' revolving credit debt**
 - \$54 billion in the late 1970s
 - more than \$600 billion by the end of the 1990s
 - now approaches \$1 trillion
- **obesity rates by state**
 - in 1990 no state with prevalence rate above 15%
 - by 2007 only one state had a prevalence rate less than 20%; 30 states with prevalence rate of 25% or more

Self-Regulation: Importance

- **2000 CDC report on causes of death in the U.S.**
 - **33% attributable to obesity, physical inactivity, and tobacco use**
 - **8% attributable to a cluster of behavioral causes—alcohol consumption, motor vehicle crashes, incidents involving firearms, sexual behaviors, and use of illicit drugs**
- **economic crisis attributable in part to excessive borrowing and lending and high-risk investments made with little or no concern for potential long-term consequences**

Self-Regulation: Importance

- **delay of gratification**
 - **self-imposed delay paradigm**
 - preschool child presented with preferred object but told must wait until experimenter returns to get it
 - experimenter does not return
 - delay until gratification = time until child reaches for the object

Self-Regulation: Importance

- **delay of gratification**
 - **individual differences in self-imposed delay**
 - parents of child participants contacted 10-12 years later and asked about adolescents' academic and social competence
 - significantly predicted by duration of self-imposed delay in preschool
 - correlated with personality characteristics associated with self-regulation
 - attentiveness
 - planfulness
 - reasoning ability

Self-Regulation: Importance

- **temperament to personality to behavior**
 - **complete birth cohort in Dunedin, NZ assessed every 2-3 years beginning at birth**
 - **at age 3, categorized according to temperament**
 - **at 18, those classified as undercontrolled at age 3**
 - **high on impulsivity and danger seeking**
 - **high on aggression and interpersonal alienation**

Self-Regulation: Importance

- **temperament to personality to behavior**
 - **at 21, those classified as undercontrolled at age 3 significantly higher on**
 - **unsafe sex**
 - **dangerous driving**
 - **violence**
 - **alcohol dependence**
 - **likelihood double that of remainder of cohort**

Self-Regulation: Importance

- **early deficits in self-regulation translate to reduced personal, social, and economic productivity in adulthood**
 - **noncognitive factors: attentiveness, persistence, impulse control, social competence**
 - **cognitive factors: intelligence, academic achievement**
 - **disadvantage in childhood produces gap in both that widens with age**

Self-Regulation: Importance

- **early deficits in self-regulation translate to reduced personal, social, and economic productivity in adulthood**
 - **deficit in noncognitive abilities (i.e., self-regulation) adds to and often exceeds prediction by deficit in cognitive abilities**
 - dropping out of high school
 - time in jail before age 30
 - smoking
 - teenage pregnancy

Self-Regulation: Importance

- **early deficits in self-regulation translate to reduced personal, social, and economic productivity in adulthood**
 - **Heckman estimates that early childhood investments that narrow gap in noncognitive abilities (i.e., skill at self-regulating)**
 - **offer ninefold return on investment**
 - **yield 15-17% increase in adult economic productivity**

Self-Regulation: Importance

- **currently accumulating at a rate of about 120 published articles per year**
- **ratio of articles on self-esteem (consistently about 375/yr) to articles on self-regulation**
 - **1970s—14:1**
 - **1980s—9:1**
 - **1990s—6:1**
 - **2000s—3:1**

Self-Regulation: Importance

- edited volumes (total of 114 chapters)
 - 1998: *Motivation and Self-Regulation Across the Life Span*
 - 2000: *Handbook of Self-Regulation*
 - 2003: *Self-Regulation of Health and Illness Behaviour*
 - 2004: *Handbook of Self-Regulation: Research, Theory, and Applications*
 - 2006: *Self-Regulation in Health Behavior*
 - 2010: *Handbook of Personality and Self-Regulation*

Self-Regulation: Conceptualization

- currently no consensus regarding definition
- in 114 chapters in edited volumes
 - definition sometimes not provided
 - no evidence of even minimal acceptance of a common definition
 - the same authors sometimes state different definitions in different chapters
- many variables are referred to as self-regulation, raising concern as much about what it is *not* as what it is
- the current state of the conceptualization of self-regulation is the primary obstacle to assessment of it

Self-Regulation: Conceptualization

Foundations	Processes	Consequences
<ul style="list-style-type: none"> Ø executive function <ul style="list-style-type: none"> • inhibition • working memory • shifting Ø temperament <ul style="list-style-type: none"> • effortful control • reactive control Ø personality <ul style="list-style-type: none"> • higher-order • lower-order 	<ul style="list-style-type: none"> Ø receiving information Ø evaluating information Ø triggering change Ø searching for options Ø formulating a plan Ø implementing the plan Ø assessing effectiveness 	<ul style="list-style-type: none"> Ø normative Ø domain specific Ø idiosyncratic

Self-Regulation: Foundations

- **executive function**

- inhibition

- working memory

- shifting

- **temperament**

- effortful control

- reactive control

- **personality**

- higher-order

- lower-order

Self-Regulation: Processes

- **no consensus favoring a particular model**
- **an example**
 - receiving relevant information
 - evaluating information and comparing to norms
 - triggering change
 - searching for options
 - formulating a plan
 - implementing the plan
 - assessing the effectiveness of the plan

Self-Regulation: Consequences

- **normative**
- **domain specific**
- **idiosyncratic**

Approaches to Assessment

- **self-report**

- **advantages**

- inexpensive

- individual would seem to be in best position to report his/her mental activity

- **disadvantages**

- subject to biases

- evidence indicates that people cannot report accurately on their mental activity

- requires abilities not present in young children

Approaches to Assessment

- **informant report**

- **advantages**

- free of self-referential biases
 - observer may be able to accurately infer mental activity
 - does not require understanding of item content and response scale by the respondent

- **disadvantages**

- most informants only see target in selected contexts and situations
 - may be difficult to extract information about specific skills and abilities from complex behavioral sequences

Approaches to Assessment

- **behavioral task performance**

- **advantages**

- do not require verbal skill
 - do not require the respondent to report on his/her mental activity
 - scores tend to be objective –e.g., time to completion, number of mistakes

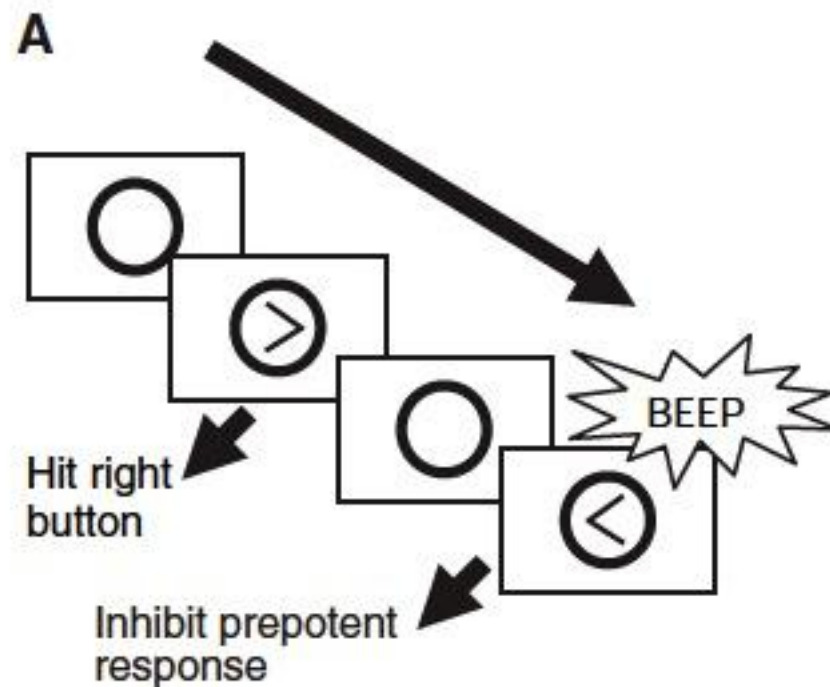
- **disadvantages**

- tasks must be tailored to the age of the respondent
 - tasks often tap more than one skill or ability

Examples: Foundations

- **executive function**
 - **stop signal task (inhibition)**
 - **star counting task (working memory)**
 - **delay of gratification (multiple capacities)**

Examples: Foundations



Examples: Foundations

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Fig. 1. An example of an item of the SCT.

Examples: Foundations



Examples: Foundations

- **conscientiousness**

- “I’m pretty good about pacing myself so as to get things done on time.” (self-discipline facet)

- “I think things through before coming to a decision.” (deliberation facet)

- **impulsivity**

- “I act on the spur of the moment.”

- “I say things without thinking.”

Examples: Processes

– Self-Regulation Questionnaire

- “I usually keep track of my progress toward my goals.”
- “I have personal standards, and try to live up to them.”
- “I am willing to consider other ways of doing things.”
- “I have sought out advice or information about changing.”
- “Once I have a goal, I can usually plan how to reach it.”
- “I get easily distracted from my plans.” (reverse-scored)
- “I don’t seem to learn from my mistakes.” (reverse-scored)

Examples: Consequences

- **Behavioral Indicators of Conscientiousness**
 - “play sick to avoid doing something” (avoid work)
 - “make a grocery list before going to the store” (organization)
 - “buy something on the spur of the moment” (impulsivity)
 - “clean the inside of the microwave oven” (cleanliness)
 - “work or study on a Friday or Saturday evening” (industriousness)
 - “clean up right after company leaves” (appearance)
 - “allow extra time for getting lost when going to new places” (punctuality)

Examples: Consequences

FIG. 1. An outline for evaluating volitional behavior and self-control.

FIXED DAILY ROUTINES ON HABIT LEVEL	
Eating	Grossly Irregular..... Careless..... Regular
Sleeping, Arising	Grossly Irregular..... No schedule..... Regular
Personal Toilet	Completely Indifferent..... Careless..... Very Particular
Elimination	Very Irregular..... Regular
Personal Hygiene	Unclean..... Clean
PERIODIC ROUTINES INVOLVING SELF-REGULATION	
Work Schedules	Irregular Undependable..... Dependable..... Very Regular
Recreation Schedules.....	Never Plays..... Occasional..... Regular Play
Relaxation	Excessive Rest Periods..... Regular Rest..... Never Rests
Attitudes	Reactionary.. Conservative .. Middle-of-the-Road .. Liberal.. Radical
Energy Mobilisation	Neurasthenic..... Moderate..... Abundant Energy
CONTROL OVER EMOTIONAL EXPRESSION	
Temper	Excessive... Uncontrolled ... Infrequently..... Only Intentionally
Reaction to Fear and Frustration	Goes to Pieces..... Completely Controlled
Control over Mood.....	Very Unstable..... Very Stable
Reaction to Pain or Unpleasantness	None..... Able to Compensate
	Excessive Unstability..... Fortitude
INITIATING ACTION	
Independence	Follows Others..... Follows Own Plans
Rational Planning	No Planning..... Careful Planning
Indecision	Never Able to Decide..... Quick, Sure Action
Procrastination	Puts Off Starting..... Starts on Schedule
Emergency Action	Loses Head..... Quick Certain Action
PERSEVERANCE	
Concentration	Easily Distracted..... Intense Concentration
Patience	Discouraged by Obstacles..... Unswerving Effort
Constancy of Goals	Follows Roads of Least Resistance..... Unchanging Goals
Dependability	Requires Constant Supervision..... Works Alone Dependably
Efficiency	No Effort to Improve..... Constantly Improving
REGULATION OF CONDUCT	
Alcohol	Intemperate..... Temperate
Tobacco	Chain Smoker..... Never Smokes
Sex	Excessive Indulgence..... Complete Control
Delinquency	Premeditative..... Impulsive..... Morally Responsible
Saving	Spendthrift..... Thrifty

Prospects

- strong evidence that self-regulation is consequential for adaptive and productive behavior beyond academic and physical skills
- burgeoning empirical literature points to many variables that play a role in self-regulation of behavior
- measures of foundational constructs are well established and, in many cases, have been adapted for use with infants and children
- measures of the self-regulation process are few and generally have not been adapted for use outside the research context
- behavioral consequences of skill at self-regulating have not been considered in efforts at conceptualization and assessment

Challenges

- **develop a well-articulated model of self-regulation on which an assessment battery could be based**
 - **pinpoint the most critical elements**
 - **establish what self-regulation is not**
- **design rigorous research focused specifically on assessment of self-regulation**
 - **reliable**
 - **valid**
 - **meaningful metric**

Questions and Comments