Behavior change interventions for changing & forming habits

Trajectory: mere educ. to environment:

- Education only efforts
- Psychological states (beliefs, norms, attitudes, importance, intentions) to motivate change
- Self-regulation processes
- Automaticity: past behavior + associated context (e.g., Ouellette & Wood, 1998; Wood 2017)
- Structural solutions: i.e., changing the setting (& skills/strategies for navigating setting)
  - Architectural... to situated cognition (Smith & Semin, 2004)
The Psychology of Situations

The call for a psychology of settings
(Cacioppo, 2015; Rauthmann et al., 2015; Reiss, 2008)
- &: in parallel, a call for behavior DVs: Agnew et al., 2008; Baumeister et al., 2007
  • Taxonomies derived from high-level interpretations of processes/relations (e.g., Kelley, Atlas of situations)
  • Taxonomies derived from personality theory (DIAMONDS, Rauthman, Sherman & Funder)
  • Agnostically descriptive (e.g., “what is one doing at 7pm, world?”, Guillaume, et al. <Funder + 31>, 2015)
  • Goals and Affordance (“opportunities & obstacles”) (Brown, Neel, & Sherman, 2015; Yang, Read, & Miller, 2009; Yang et al., 2014 -- Neuberg, Neel - fundamental motives & afford. mainten.)

Deep Dive into Affordances & Situations

• Affordance theory: grounded theory of meaning (Gibson, 1977, 1979)
  • Gibsonian and dynamical systems approach to action & perceiving
    • Stable configurations of affordances: behavior settings (e.g., Barker & Wright, 1955)
      - Dynamic structures: collective, purposive actions, plus milieu features that support. Meaning: congruence between these (Heft, 2001)
    • Implications for habit research
      - E.g., what in a location matters for eliciting teen behavior

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**Gibson’s Ecological Approach**  
*(Gibson, 1979, Carello & Michaels, 1981)*

- Mutuality of perception and action; circular causality  
  *(Shaw & Kinsella-Shaw, 1988)*
- Coevolution of animal & environ → perception detect key invariants in environment, especially information specifying action possibilities (affordances).

- Insights from dynamical systems *(Kelso, 1995; Kugler & Turvey, 1987; Warren 2006)* - trajectory matters; emergence

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**Affordances: Grounding meaning**

Affordances: “opportunities and obstacles”  
*(e.g., Neuberg et al., 2010): valenced down*  
but add: FOR ACTION.

RELATIONAL and OBJECTIVE property of environment, taken with respect to an organism with certain capabilities.

**Social affordances:**

“What other animals afford is specified by its permanent features and its temporary state, and it can afford eating or being eaten, copulation or fighting....What other animals afford an observer is not only behavior but also social interaction.” *(Gibson, 1979)*
Affordances: Grounding meaning

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Quantifying Affordances

• **Creativity and flexibility:** New modes of action emerge with environmental constraints (Warren, 1984).
• **Objectivity:** New modes of action can be precisely predicted (e.g., riser height / leg length)
• Tested for solo to social action modes (Richardson et al., 2006)
Application of Affordance to Habits: Question 1

- Conscious intention; long-term, high-level goals and plans
- Consciousness of mechanics of detailed actions in sequence
- Habit performance
- Agency at the level of the situation in flux
- Affordance Enactment

Tightly responsive to the “detailed mechanics” throughout sequence (e.g., outfielder)
Application to Habits: Affordances “Geography?” or “Invitation”

- Objects have multiple affordances
  - Salience affected by: sociocultural, past behavior
- Situations involve multiple affordances
- Affordance “landscape” or... force field?

Landscape of Affordances

- Jump to-able
- Affords support
- Step up-able
- Affords sitting
- Affords shelter
- Affords leaning against
- Fall off-able

Doesn’t afford support
The environment as “calling out to us” or soliciting us
In describing behavior settings in a small Kansas town:

“The children of Midwest appear to see a smooth, level area which is free from obstructions, such as the football field, the Courthouse lawn, the school gymnasium, or the American Legion hall, as place for running and romping in unorganized, exuberant activity. The milieu features of such behavior settings appear via perception to demand this kind of behavior” and further: “the displays and arrangements of the stores, the order of the church services, the ceremony at weddings, the guide lines painted on streets, the furnishings of homes are all calculated to coerce behavior to the pattern appropriate for the setting” (Barker & Wright, 1955, pp. 55-56)

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Using Affordances to Undercut Habits: 2 More Questions

1. If affordances “solicit” then could they be used to compete with habits?

2. Can an affordance analysis help us understand the what in context is essential/nonessential for habit triggering?
   - Change habits: MOVE! (Wood et al., 2005)
   - UNPACK the who n where of habit performance:
     - ALL people associated with past expression matter?
     - ALL features of the location elicit?
   - Or: affordance-relevant? & behavior setting relevant?

Using Affordances to Undercut Habits: 2 Questions

- Eating popcorn in habitual context (Neal et al., 2011)
  - Would ANY cue associated repeatedly with habit do?
    - Color of the room you are always in? Color of bag?
    - Or only: affordances of the bag? (meaning matters)

- Similar questions can be asked about aspects of the location as well (e.g., consider: “behavior settings”).
Using Affordances to Undercut Habits: 2 Questions

• Others present who are associated with the past repeated behavior
  - **WHO?** Tied to “habit strength” (frequency in past)?
  - Or again, could it be tied to “meaning” (affordances, meaningful aspects of action)
    - Digression: more details on defining behavior setting
• If it is the latter → novel predictions regarding habit changing or establishing!
  - What if I’m in charge of showing the movie or taking the tickets (Neal et al., 2011 example)!

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Promise of this approach

- Perception of affordances explain/undercut:
  - Cues (plate/wine glass/portion size, placement)
- Promise for interventions: use affordances to
  - Disrupt
  - Attract

In addition, increase ATTRACTION to non-habit associated settings:
- Use invitational aspects to increase pull to new settings that better promote healthier lifestyle:
  - Novel, creative/imaginative spaces (& behavior settings)

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Many thanks!

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