Behavioral Economics: Choice Architecture in HIV Prevention

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- BE is a framework based on economics and complemented by psychology to
  - examine decision-making situations,
  - predict specific errors (biases), and
  - *create novel interventions*

Choice architecture

- **The design of different ways in which choices can be presented to decision makers**
- **Examples: default options, framing, simplification, social proof**
- **Cafeteria, Supermarket shelves**

Traditional view of interventions

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Access

Traditional view of interventions

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Information

Access

Traditional view of interventions

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Prices

Information

Access

A BE view of interventions

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Prices

Context matters

Information

Access

A BE view of interventions

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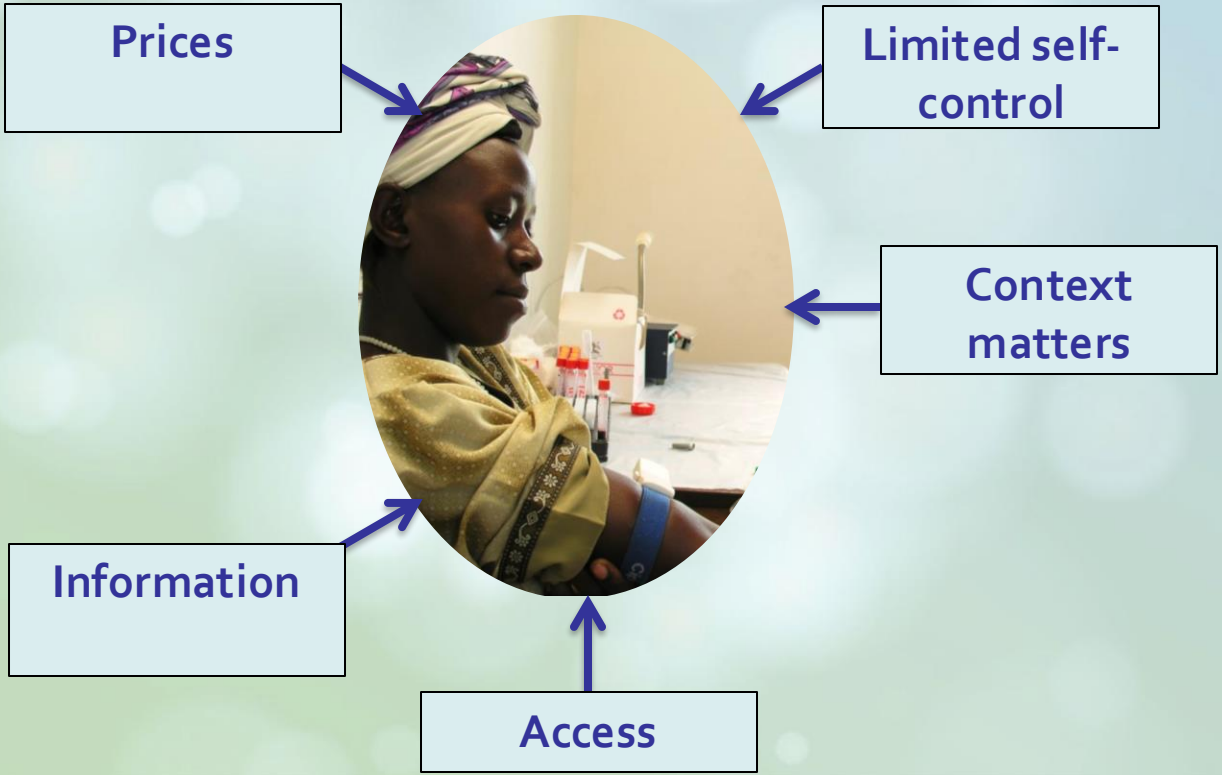

A BE view of interventions

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Prices

Limited self-control

Context matters

Information

Limited rationality

Access

A BE view of interventions

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Social influence

Prices

Limited self-control

Context matters

Information

Limited rationality

Access

How does this help with intervention design?

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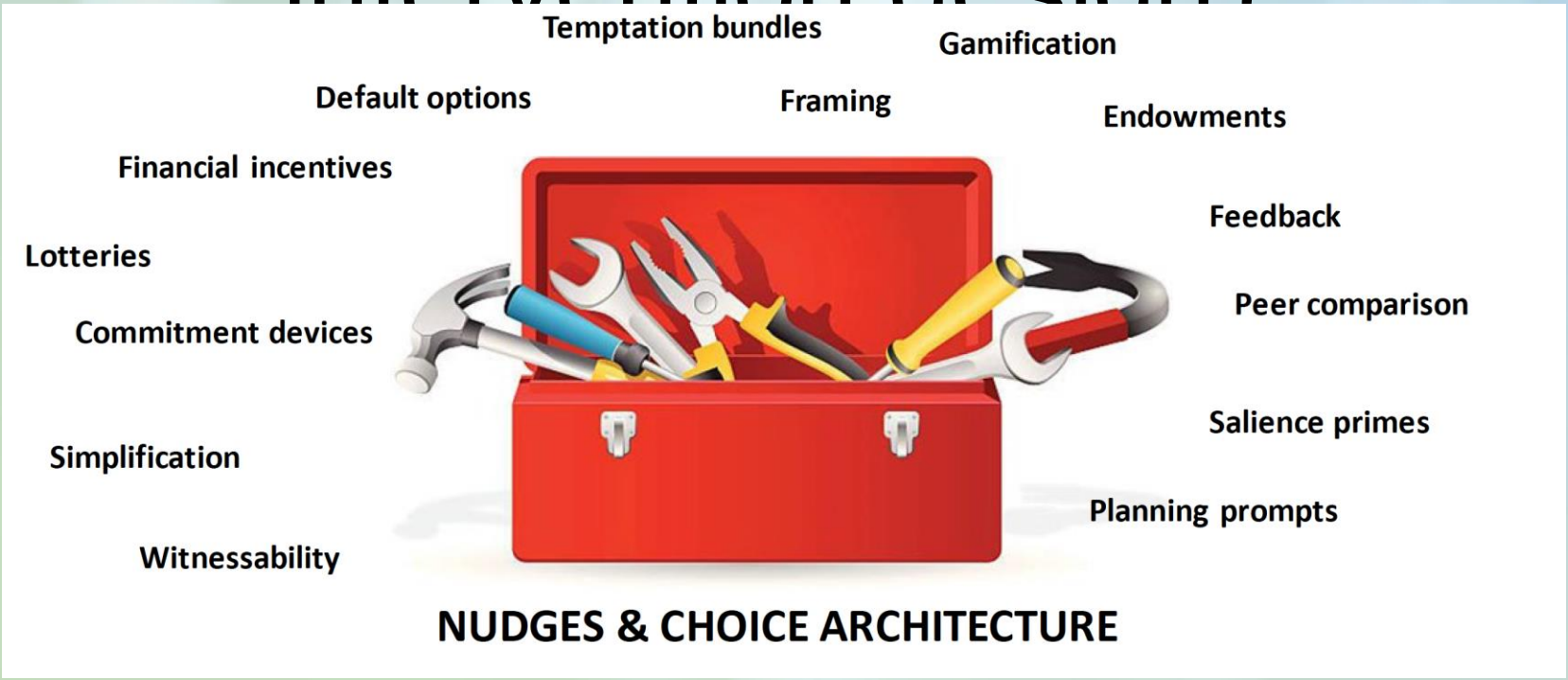

Key behavioral economics biases

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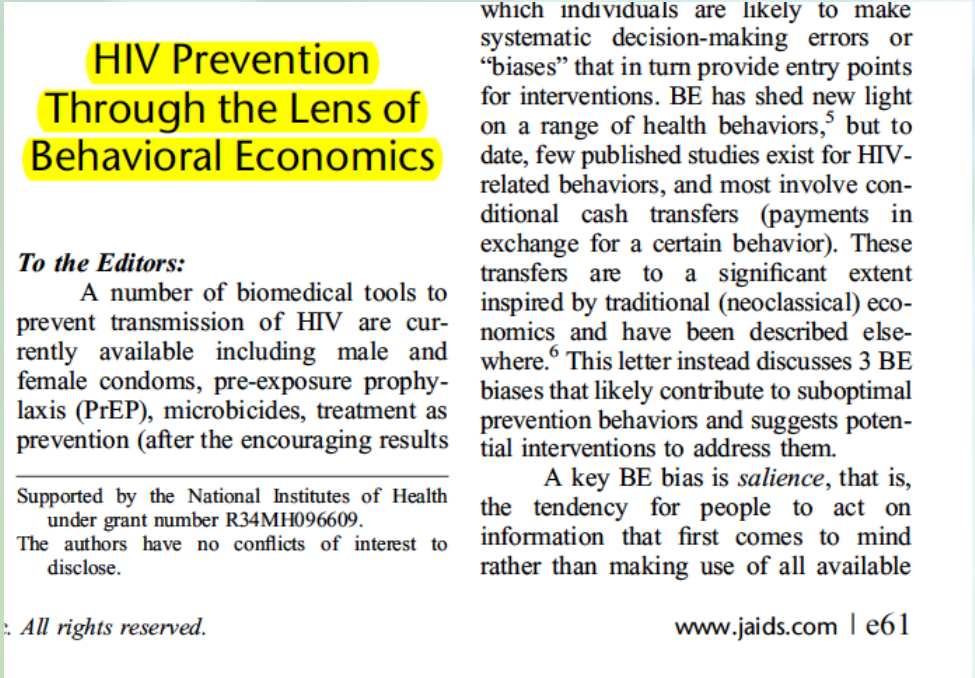

HIV Prevention Through the Lens of Behavioral Economics

To the Editors:

A number of biomedical tools to prevent transmission of HIV are currently available including male and female condoms, pre-exposure prophylaxis (PrEP), microbicides, treatment as prevention (after the encouraging results

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which individuals are likely to make systematic decision-making errors or "biases" that in turn provide entry points for interventions. BE has shed new light on a range of health behaviors,[5] but to date, few published studies exist for HIV-related behaviors, and most involve conditional cash transfers (payments in exchange for a certain behavior). These transfers are to a significant extent inspired by traditional (neoclassical) economics and have been described elsewhere.[6] This letter instead discusses 3 BE biases that likely contribute to suboptimal prevention behaviors and suggests potential interventions to address them.

A key BE bias is *salience*, that is, the tendency for people to act on information that first comes to mind rather than making use of all available

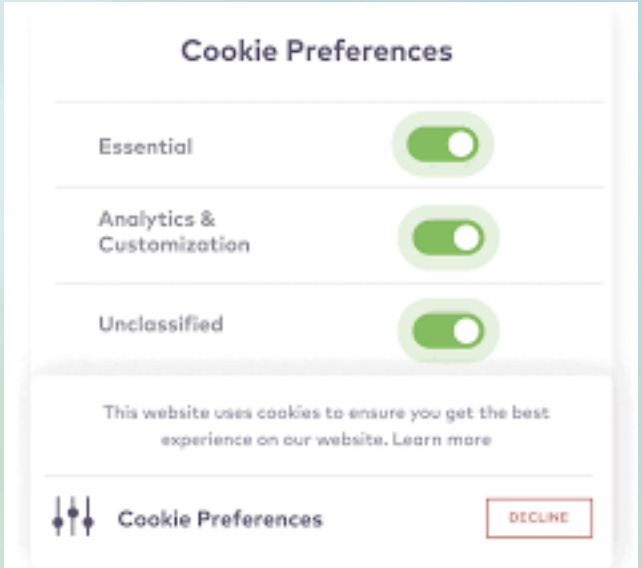
- **Salience**
- **Present bias**
- **Affect**

Intervention examples: Opt-out testing / PrEP initiation

- Montoy, Dow, and Kaplan (2016):
  - 38% acceptance with opt-in
  - 51.3% with active choice
  - 65.9% with opt-out

Opt-out is the CDC recommendation

PreP initiation?



Intervention example: Simplifying Choices and Reducing Decision Fatigue

Friction costs: seemingly small barriers can lead to outsized negative outcomes

Combination pills / fixed regimens to reduce number

Mail order pharmacy / automatic refills

Once daily doses associated with higher adherence

Non-daily pills, injections, …, but open questions about adherence

Intervention example: habits

- Habits are a key strategy among those successfully managing chronic diseases
- Reduce the cognitive burden of pill-taking
- Interventions fail to establish habits
- Promising area of research

Exploratory intervention examples

- BE and mHealth: salience, social norms, real-time feedback (fitbit, apple watch, …)

- BE and AI: framework to think through seemingly unrelated data

Intervention example: Improved design of incentives

	Traditional Economics	**Behavioral Economics**
Dealing with preferences	Overrides preferences	Supports individual's preferences Nudges towards those of the rational, 'cool' self 'Angel' (Dec 31) vs. Devil (Jan 1)
Type of incentive		Money (Can backfire!) In-kind Chance to be kind (self-identity) Social prestige ("Employee of the month") …
Allocation mechanism	Fixed (Quid pro quo) Ex-post	Contingent Unconditional Variable (Lotteries, raffles, …) Frequent!
Delivery	Does not matter	As a loss avoided (loss aversion) As a separate payment (salience)

Linnemayr S, Rice T. "Insights from Behavioral Economics to Design More Effective Incentives for Improving Chronic Health Behaviors, with an Application to Adherence to Antiretrovirals". *JAIDS* 2016, 72(2): e50-2 .

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