Free (Ad)vice

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Free (Ad)vice: A Theory of @KimKardashian and @charliesheen

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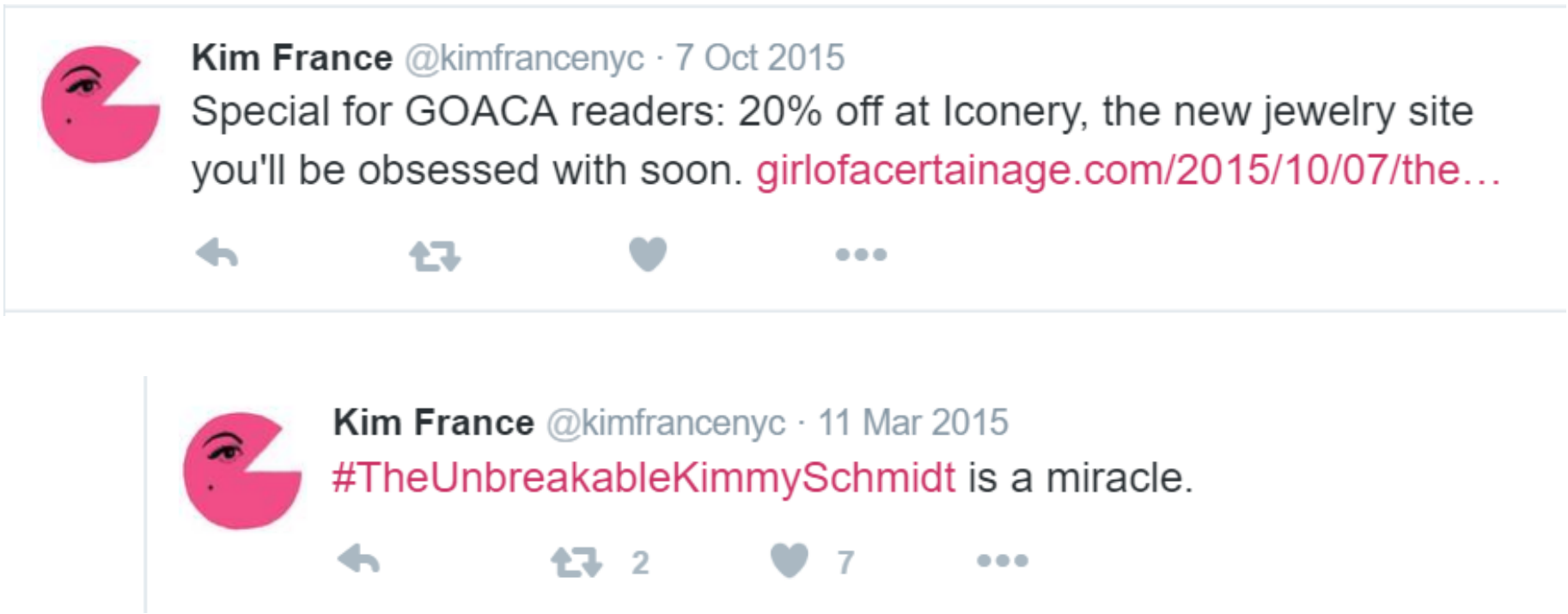
Broad Interest: The Market for "Free" Information

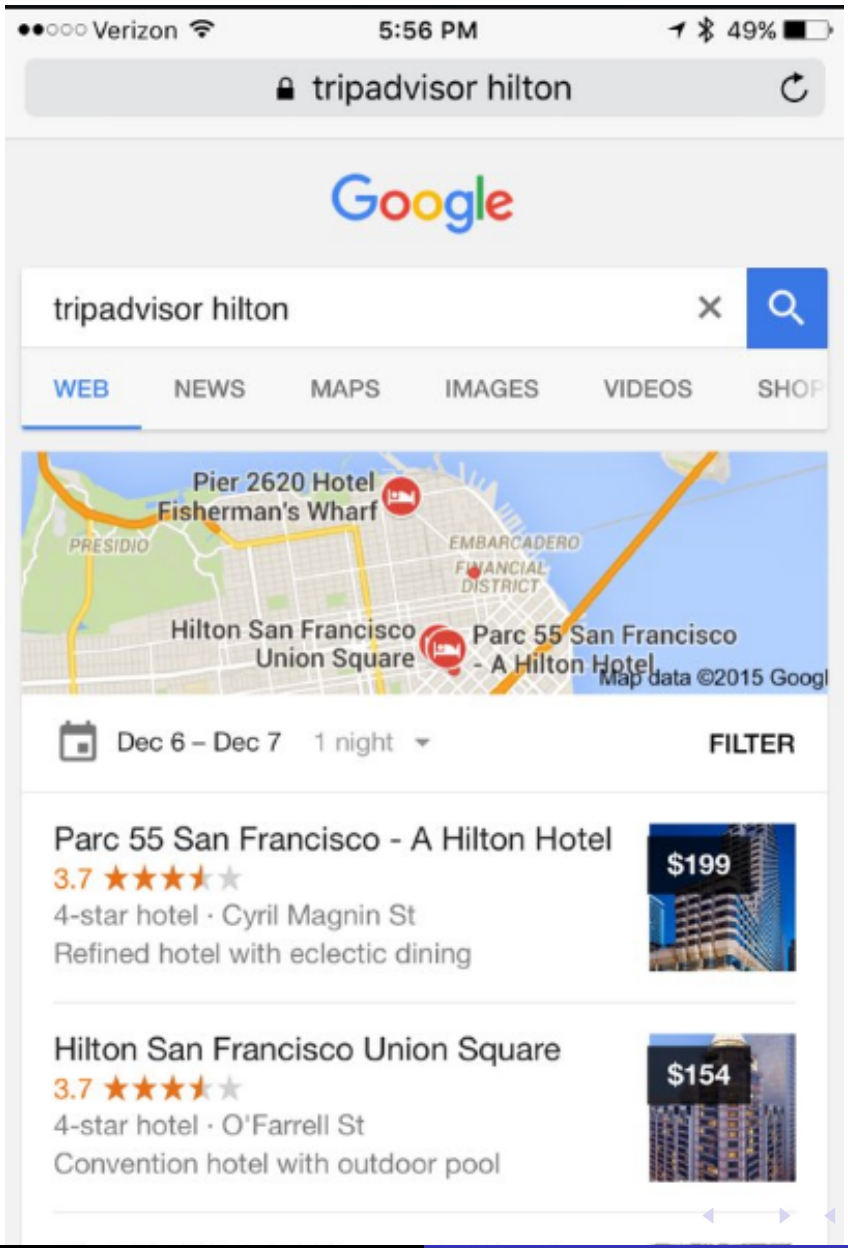
- The Internet means that content is everywhere
- Much of that content is information about other content
  - Suggestions for YouTube, SoundCloud, webpages themselves
  - Prices don't do most of the work in allocating either information or resources
  - Reputation even more important without prices
- This paper's narrow topic: People find content through free advice, but advice is often mixed with ads
  - Focus on FTC policy, especially disclosure policy, for influencers engaged in this business
- Related to "fake news"

Free (Ad)vice: Blog/Twitter



"I never, ever link to anything I wouldn't want to buy for myself, commission or no commission."

Free (Ad)vice: Google



This Paper

- Construct a simple model, capable of understanding basic trade-offs and some policies
  - Not meant to be a full model of Twitter or Google, but rather an abstract way to think about this kind of relationships
  - Borrow ideas from contracting literature without monetary transfers *especially Li, et al. (2015) and DeMarzo and Fishman (2003)*
- Show that this channel leads to different policy results: disclosure can be bad for consumers
  - Key: *Ads play two roles: as* temptation *for which incentives are needed (currently) and* reward *(in the future) by which those incentives are achieved*
- Alternative policy rule: opt-in disclosure

Basic Model

- Continuous time, infinite horizon, discount rate normalized to 1
- If *follower* follows *influencer* ($f_t = 1$, observable), good advice arrives to follower at rate $(1 - a_t)\lambda$
  - Influencer (privately) chooses ad level a_t
  - Influencer gets payoff λa_t from ad technology
  - Follower gets value 1 for each piece of good advice; follower's payoff is public
- If the follower chooses not to follow the influencer ($f_t = 0$), follower gets $s > 0$ (but $s < \lambda$) and influencer gets 0

Full Information Pareto Frontier

- Fixed level of a, together with $f = 1$ at all t traces out Pareto frontier
- Let V be follower's value and W be influencer's value:

$$V + W = \lambda$$

Contracts

- No monetary transfers, reward comes via (public) history dependent choice of f_t and a_t
  - Public history is the list of dates at which good advice was received, plus entire history of f
- No commitment for influencer. Consider both commitment and no commitment for follower
  - Qualitatively similar results
- Assume influencer needs a fixed level $\bar{W}$ of payoff ex ante to make advice technology feasible

Recursive Formulation

- Summarize the contract at t by $0 \leq d_t \leq 1$, the discounted number of expected periods of following in the future:

$$d_t = E \int_0^\infty e^{-j} f_{t+j} dj$$

- Describing contracts this way turns out to be WLOG
  - Influencer utility is a monotonic transformation of d

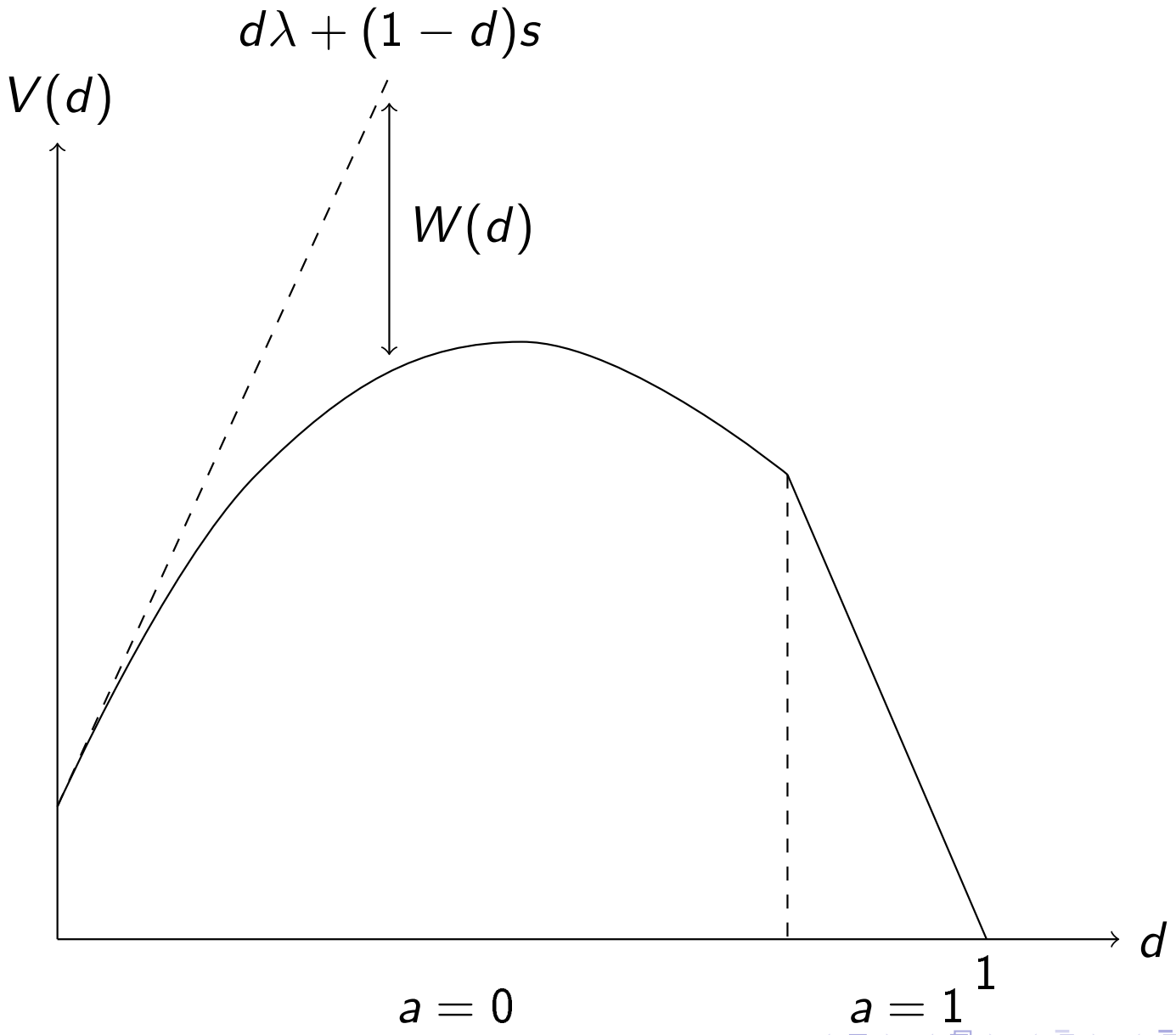
Intuition on role of d

- Expected discounted surplus is an increasing linear function of d:

$$TS(d) \equiv V(d) + W(d) = \lambda d + s(1-d)$$

- Higher d makes incentives on influencer more difficult
  - Incentives come from threat of not following in future, which is far off for high d
- Trade off for follower: higher total surplus vs. lower share
  - When $d = 0$, total surplus is s, all follower
  - When $d = 1$, total surplus is $\lambda > s$, all influencer
- For IC: Marginal return to a is $\lambda - \lambda(W(d') - W(d))$, so good advice $a < 1$ requires $W(d') - W(d) \geq 1$

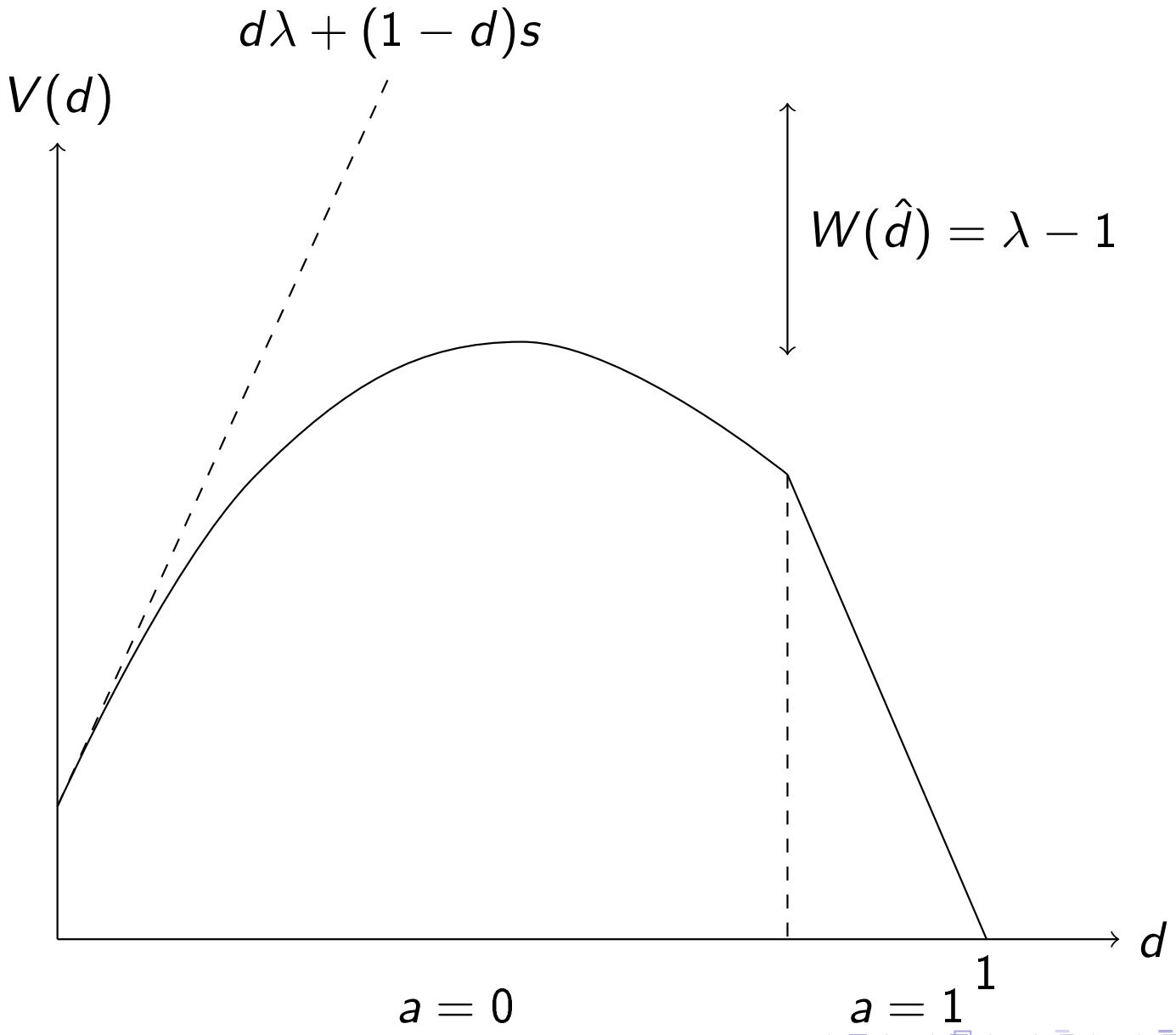
Value Function



Concavity of V Implies Always Incentivize Good Advice if Possible

- Concave V implies
  - W is increasing and convex
  - IC binds: $a < 1 \implies W(d') - W(d) = 1$
- If IC binds, value of good advice is exactly compensated with future value, so the gain in social surplus from $d' > d$ is the net benefit of the good advice for the influencer.
  - This is always positive
- Since $a = 1$ generates nothing for follower, they only choose it when even $d' = 1$ is not enough for $a < 1$, i.e. $\lambda - W(d) < 1$
  - $W(\hat{d}) = \lambda - 1$

Value Function



Varying Ad Return

- Suppose the influencer's payoff is taxed (for all t) to $\tau\lambda a$
  - Denote the solution by $W_\tau(d)$ and $V_\tau(d)$.

Proposition

$W_\tau(d) = \tau W(d)$, $V_\tau(d) = V(d)$

- Nothing about the allocation changes
- Intuition: τ impact on IC constraint present and future rewards equally

What is the FTC in the model?

- An additional technology, not available to influencer/follower
  - Perhaps requires returns to scale, and benefits spill-over across followers
- Technology can potentially detect true a and punish (upward) deviations
  - Does so by comparing "disclosed level" to chosen a

Disclosure Rules as Comparative Static on Ad Return

- When $a = 0$, ads (deviation) makes $u \leq 1$
  - Reflects potential penalty for non-disclosure
- When $a = 1$, ads (on path) make $max\{m, u\} < 1$
  - Assumption: disclosure lowers total value of message to influencer to $m < 1$
  - Disclosure might make ad less appealing, or just take up resources
  - In Inderst and Ottaviani (2012), disclosure can make impact of advice less in a way that lowers its informativeness
  - Can be made endogenous if some *paid advice* is also *good advice*.

Impact of Disclosure Rules: $m \leq u$

- If $m \leq u$ no ads are disclosed and every ad earns u
  - Just like taxation with $\tau = u$: reduces W and leads V unchanged
  - Could have a negative supply response, depending on elasticity

Impact of Disclosure Rules: $m > u$

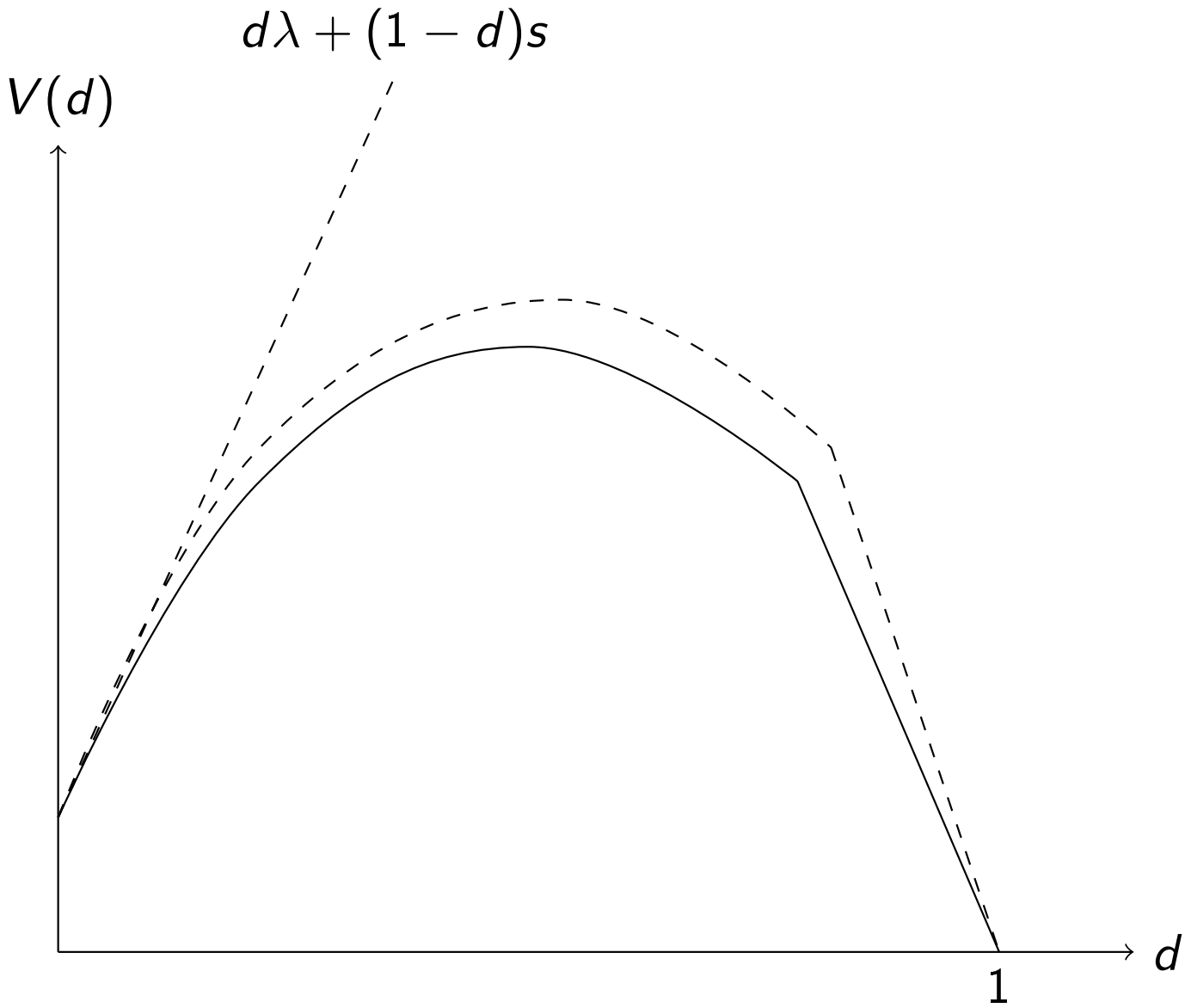
- If $m > u$, all disclosed ads for $d > \hat{d}$, no disclosed ads for $d < \hat{d}$

Proposition

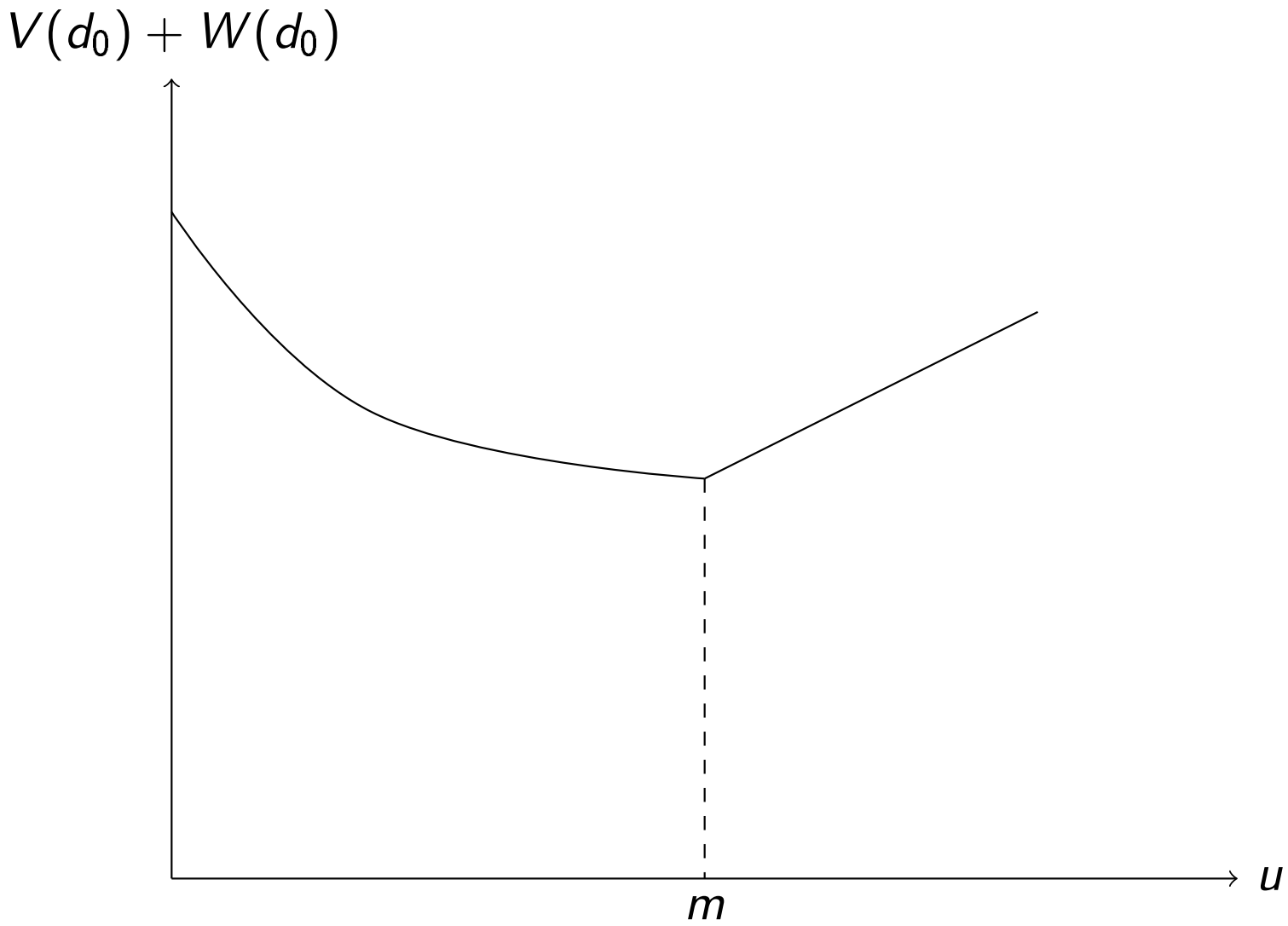
Suppose $u < m$. Then $V(d)$ is decreasing in u.

- Relaxes IC, so for any $d \in (0, 1)$, raises $V(d)$, lowers $W(d)$

The benefit of $u < m$



Welfare and u



Alternative Disclosure Policy

- A policy that "deregulated" top influencers (i.e. high d) would be better if $m < 1$
- Opt-in policy: if your Twitter account says you disclose, you must disclose. "All paid tweets disclosed with #ad"; could be turned off when you become a "top influencer" (high d)

Extensions

- Paid good advice: sometimes ads and good advice are not in conflict
  - Can help explain the taxation effect of disclosure: if consumers are rebated only if they don't pay full attention, they pay less attention to good paid advice
- Inherent value of followers: Google disclosed ads on RHS, attention seeking celebrity
  - Inherent value makes influencer more valuable to follower by strengthening incentives
- Bad advice: ads may lead to bad outcomes
- Lack of commitment for follower
  - Matters for contract, but qualitative features unchanged

Summary

- Dynamic model of one sided trading favors with "trust" form of reputation
  - Helpful for thinking about advice that is mixed with ads
  - That sort of advice is not new but growing, and we will need models to think about those markets, and regulation of these markets
  - Theory literature is already moving this way and can be adopted in IO
- Fundamental difference from monetary transactions: actions to be regulated are sometimes what the consumer wants to avoid (spam) but the way the consumer pays for services.
  - Can influence the way we think about disclosure, competition, taxes, etc.