

# PSYCHOLOGICAL OWNERSHIP OF MONEY: EVIDENCE FROM THE LAB AND FIELD

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Stephanie Tully

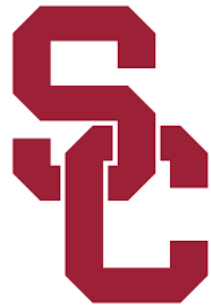
University of Southern California



# ABOUT MYSELF

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Academic training and experience:



# ABOUT MYSELF

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Selected industry and consulting experience:



# RESEARCH EXPERTISE



## Time

**Questioning The End Effect**  
*(JEP General, 2016)*

**Overestimating Memories**  
*(JPSP, 2017)*

**Expectations' Effect on  
Experience Recommendations**  
*(Working Paper)*



## Time & Money

**Context Dependent Debt: Borrowing for  
Experiences**  
*(JCR, 2018)*

**Financial Constraints & Preference for  
Material Goods vs. Experiences**  
*(JCR, 2015)*

**Financial Constraints & WOM**  
*(JCR, 2019)*



## Money

**Psych. Ownership of (Borrowed) Money**  
*(JMR, 2021)*

**Psych. Ownership of Gov't Benefits**  
*(PNAS, 2021)*

**Payment Frequency on Spending**  
*(JCR, forthcoming)*

**Subjective Wealth**  
*(CPR, forthcoming)*

**WTP for Social Responsibility**  
*(JR, 2014)*

**Scarcity and Myopia**  
*(R & R at JPSP)*

# TALK ROADMAP

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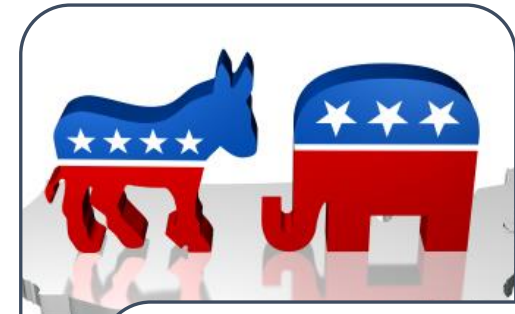
## Psych Ownership of Borrowed Money

- Sharma, Tully & Cryder (2021)



## Psych Ownership of Government Benefits

- De La Rosa, Sharma, Tully, Giannella, & Rino (2021)



## New Ideas and Directions

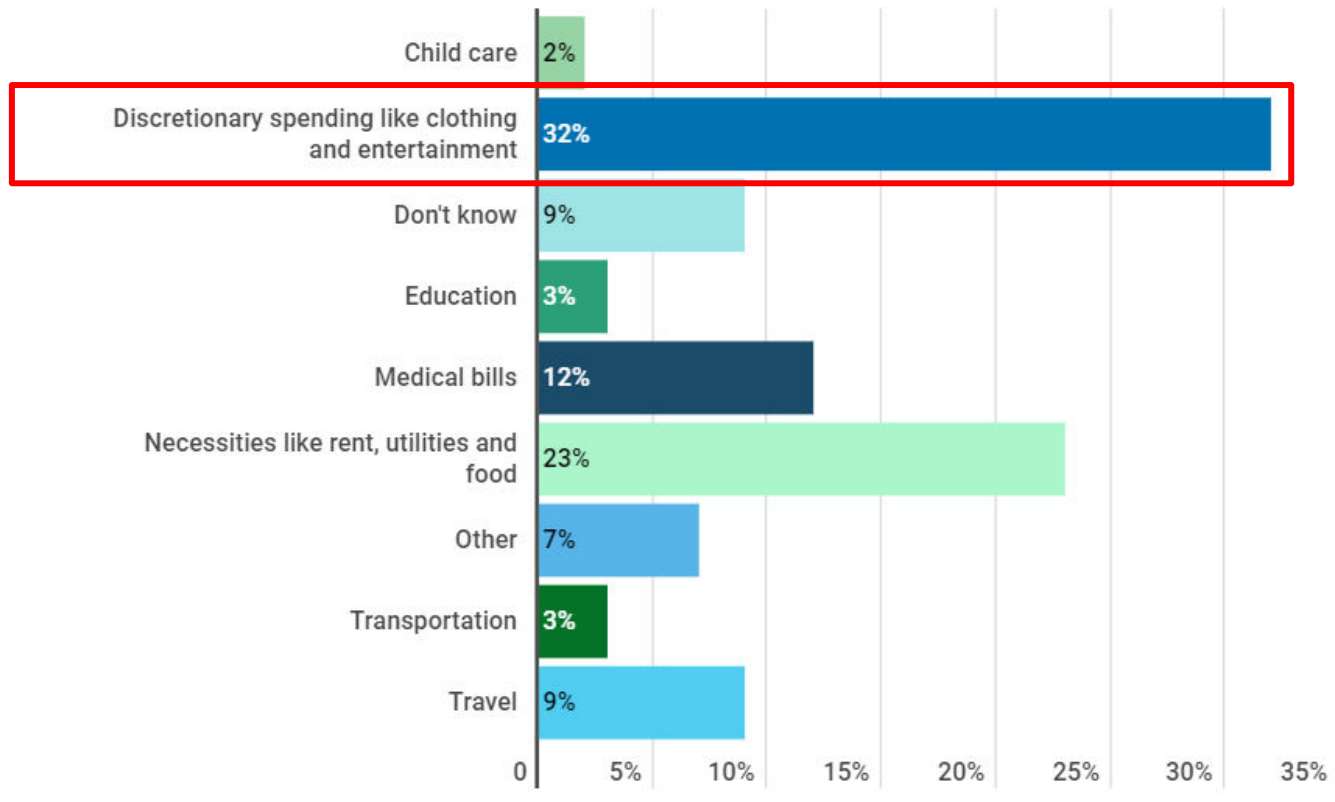
- E.g., Differences across the political spectrum

# PSYCHOLOGICAL OWNERSHIP OF (BORROWED) MONEY

Sharma, Tully, & Cryder (2021)

# “UNNECESSARY” DEBT

CNBC Make It, in conjunction with Morning Consult, recently asked 2,200 U.S. adults which of the following would you say most contributes to your credit card debt:



CONSUMERS  
OFTEN USE  
COSTLY FORMS  
OF  
BORROWING





# DEFINITION OF (ALL) DEBT

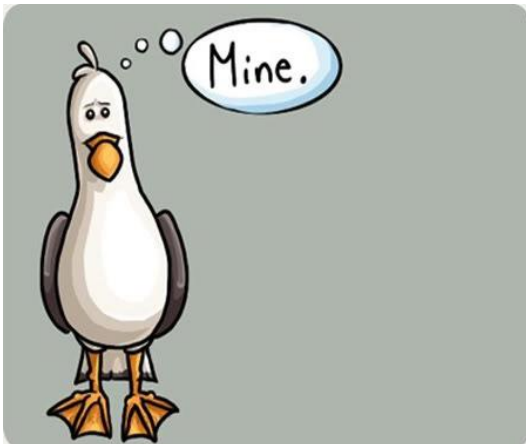
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“Something, typically money, that is owed or due.”

– Oxford dictionaries

“Debt is an amount of money borrowed by one party from another.”

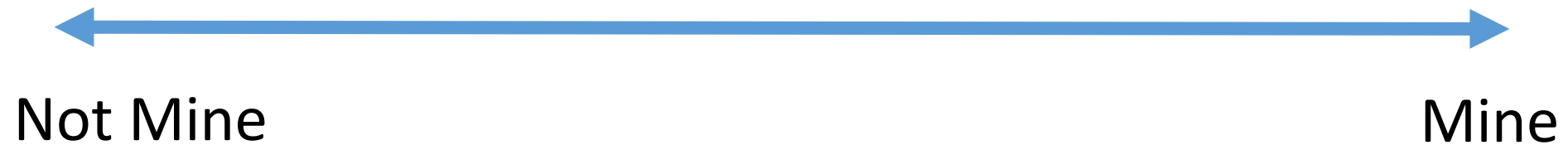
– Investopedia



# PSYCHOLOGICAL OWNERSHIP

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The extent to which a target feels like “mine”



# PRIOR RESEARCH: PSYCHOLOGICAL OWNERSHIP

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e.g., Liu et. al 2011; Pierce et. al 2003; Pierce et. al 2004; Peck and Shu 2009; Peck et. al 2020; Shu 2018; Morewedge et. al 2021

# PSYCHOLOGICAL OWNERSHIP OF BORROWED MONEY

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The extent to which borrowed money feels like “mine”



Not Mine

Mine

# PSYCHOLOGICAL OWNERSHIP & WILLINGNESS TO BORROW

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Indebtedness is an aversive state; people view obligations as unfavorable and burdensome (Goei, Lindsey, Boster, Skalski, and Bowman, 2003; Prelec and Loewenstein 1998). Hence:

Higher psychological ownership of borrowed money should increase willingness to use debt.

# PSYCHOLOGICAL OWNERSHIP OF BORROWED MONEY

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- Psychological ownership of borrowed money across individuals
  - Study 1: Predictive ability & discriminant validity
- Psychological ownership of borrowed money across contexts
  - Study 2 & 3: Visual representations – differences across debt types
  - Study 4: Beyond structural differences – differences across debt types
  - Study 5: Manipulating psychological ownership
  - Study 6: Online search behavior – differences across debt types

# STUDY 1: PSYCHOLOGICAL OWNERSHIP ACROSS INDIVIDUALS

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Examining natural variation in psychological ownership of borrowed money, its ability to predict differences in willingness to borrow, and to examine discriminant validity.

N = 501 online participants, Pre-registration: <https://aspredicted.org/ht7iw.pdf>

# MEASURES OF PSYCHOLOGICAL OWNERSHIP

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Three items ( $\alpha = .79$ ):

(1) Borrowed money feels like my money

(2) Spending borrowed money feels like accessing my own money early

(3) Spending borrowed money feels like spending money that's NOT mine to spend

(all scales 1 = completely disagree, 9 = completely agree).



# PRIMARY DEPENDENT MEASURES

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Willingness to borrow using a credit card:

$B = .364$ , 95% CI (0.26, 0.47),  $t(483) = 7.13$ ,  $p < .001$ ,  $R^2 = .095$

Willingness to borrow using a personal loan:

$B = .379$ , 95% CI (0.29, 0.47),  $t(483) = 7.99$ ,  $p < .001$ ,  $R^2 = .117$

# SECONDARY DEPENDENT MEASURES

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## Past use – credit card:

B = .127, 95% CI (.012, .242), Wald  $\chi^2 = 4.71$ ,  $p = .030$

## Past use – personal loan:

B = .254, 95% CI (.126, .383), Wald  $\chi^2 = 15.03$ ,  $p < .001$

## Past use – any debt:

B = .134, 95% CI (.039, .228), Wald  $\chi^2 = 7.72$ ,  $p = .005$

Note: Psychological ownership of borrowed money was the only construct to predict all 5 outcomes

# OTHER MEASURED CONSTRUCTS

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Tightwad-spendthrift tendencies (Rick, Cryder, & Loewenstein 2008)

Debt aversion (Calendar and Jackson 2005)

Propensity to plan for money – long run (Lynch et. al 2010)

Self-control (Tangney, Baumeister, and Boone 2004)

Financial literacy (Lusardi and Mitchell 2011)

Materialism (Richins 2004)

Intertemporal discount rate (titration converted using hyperbolic model, Hardisty et. al 2013)

Spare money (Berman et. al 2016)

Demographics (age, gender, income)

**All correlations  $\leq$  .34**

# HIERARCHICAL STEPWISE REGRESSION WTB CREDIT CARD

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Model		B	SE	Beta	<i>t</i>	<i>p</i>	95% CI	
							Low	High
1	(Constant)	1.860	.473		3.93	.000	.931	2.790
	Tightwad-Spendthrift	.131	.024	.241	5.46	.000	.084	.178
	Debt Aversion	-.356	.121	-.128	2.93	.004	.117	.595
	Gender (Female)	.541	.196	.119	2.76	.006	.156	.926
	Discount Rate	.099	.043	.099	2.30	.022	.014	.184



# HIERARCHICAL STEPWISE REGRESSION

## WTB PERSONAL LOAN

Block		B	SE	Beta	<i>t</i>	<i>p</i>	95% CI	
							Low	High
1	(Constant)	.406	.577		.70	.483	-.729	1.540
	Debt Aversion	-.492	.115	-.189	4.26	.000	.265	.719
	Discount Rate	.126	.042	.133	3.03	.003	.044	.207
	Age	.027	.009	.134	3.02	.003	.009	.045
	Materialism	.250	.116	.097	2.16	.031	.022	.477
2	(Constant)	.770	.561		1.37	.171	-.333	1.872
	Debt Aversion	-.267	.118	-.102	2.26	.024	.035	.499
	Discount Rate	.115	.040	.122	2.85	.005	.036	.194
	Age	.019	.009	.093	2.13	.034	.001	.036
	Materialism	.139	.113	.054	1.23	.219	-.083	.362
	Psychological Ownership	.303	.051	.272	5.90	.000	.202	.403

# DIFFERENCES ACROSS CONTEXTS

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Likely to be systematic differences across financing opportunities

- We consider a basic difference across financing opportunities: debt form
- The most common forms available to consumers for discretionary purchases are “credit” and “loans” (Federal Reserve, 2006).
- In economic terms, credit and loan can be interchangeable (and sometimes are). However, debt types are often named in part due to common differences in structural properties.

**Prediction:**

**Psychological Ownership of Credit > Psychological Ownership of Loan**

# STUDY 4:

## “FLEX” LOANS VS. CREDIT

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(1) Isolate the impact of debt type on psychological ownership from differences in debt structure or understanding of how each debt type functions. (2) Examine whether psych ownership can explain differences in debt uptake interest across debt types.

N = 503 on Prolific Academic, Pre-registration: <https://aspredicted.org/mw8jq.pdf>

ASK ABOUT OUR

# FLEX LOAN!



QUALIFY AND GET UP TO  
\$2,500\*

©2016 Check Into Cash of Tennessee, Inc. All rights reserved. Flex loan is an open-end line of credit. \*Limit of credit amount limit and eligibility are based on ability to repay and other underwriting criteria. Restrictions apply. See store for details.





# INDEPENDENT VARIABLE: FLEX LOAN VS. FLEX CREDIT

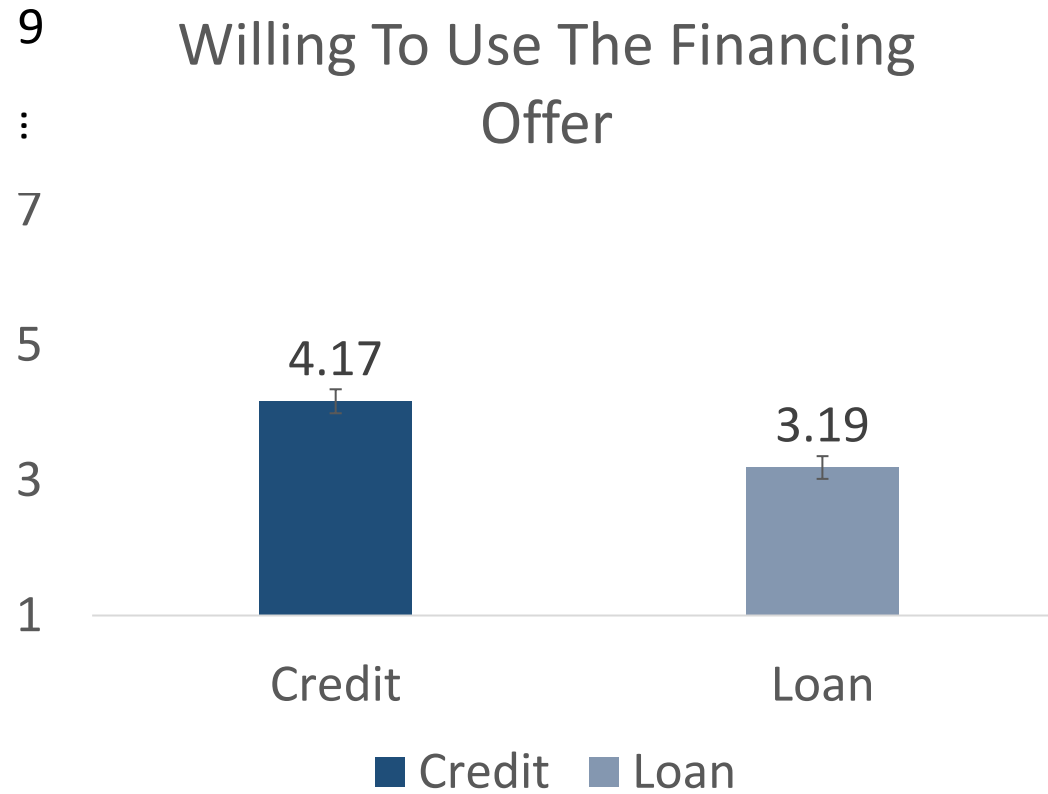
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A flex **[loan/ credit]** gets you the right amount of cash for every situation and gives you the flexibility and control you need. A flex **[loan/ credit]** gives you the ability to apply once and withdraw cash at any time (up to a specified limit). With a flex **[loan/ credit]**, you pay it back at your own pace, with conveniently scheduled payments, or installments.

Flex **[loan/ credit]** are available from \$25 up to \$4,000, and have competitive interest rates. Here's how it works. **You only owe money once you spend it.** On your **[loan/ credit]** due dates, if you have used any portion of the **loan**, you will have the option to pay only a minimum amount due or pay an additional amount so you can pay down your **[loan/ credit]** balance quicker. There's never any late fees. This is a **revolving [loan/ credit]**, which means that as you pay down your balance, you will have the ability to take out additional funds as long as you are within your **[loan/ credit]** limit. You can pay off your **[loan/ credit]** early without penalty. Your **[loan/ credit]** money will be available on a convenient card and can be used wherever Visa/Mastercard are accepted.

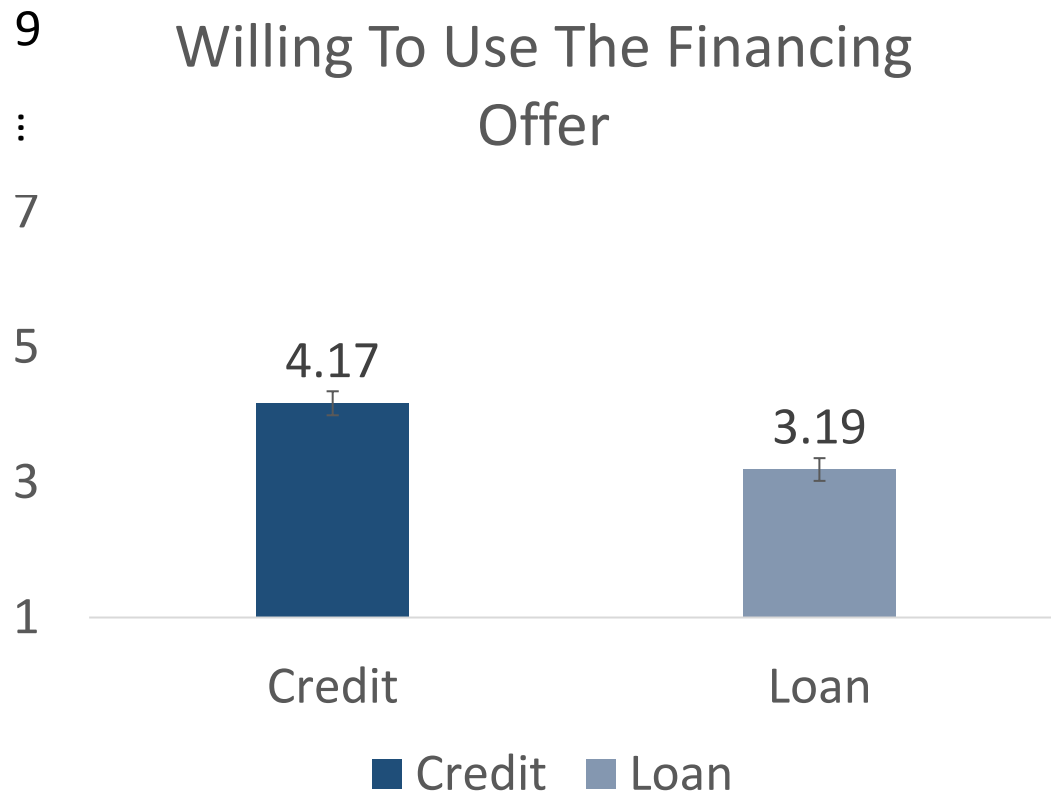
# RESULTS

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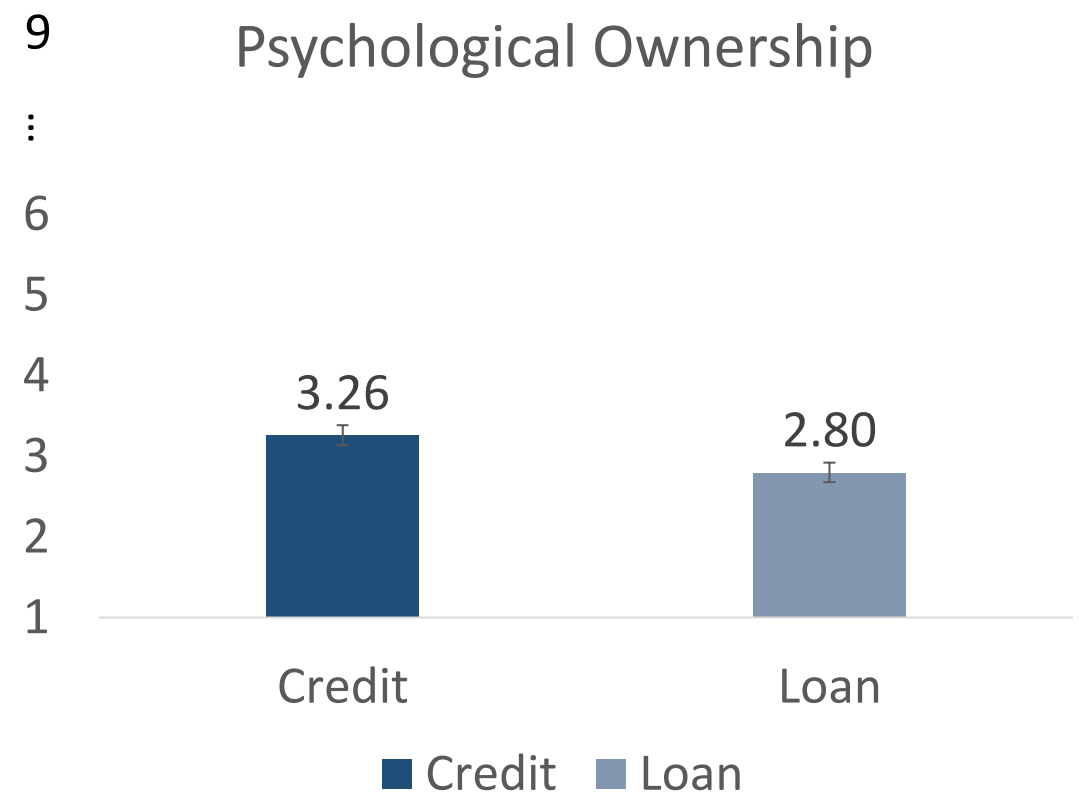


$F(1, 501) = 16.04, p < .001$

# RESULTS



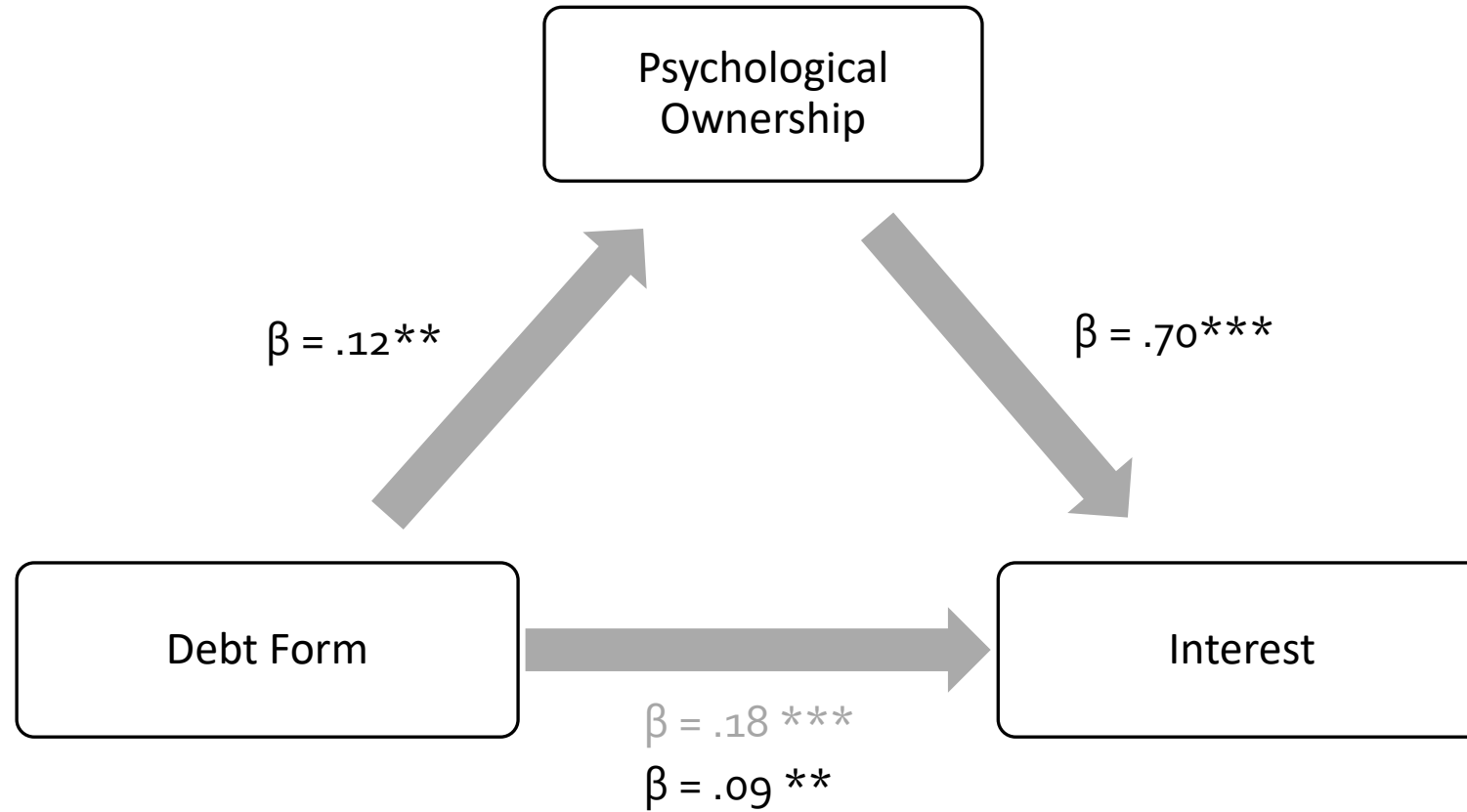
$F(1, 501) = 16.04, p < .001$



$F(1, 501) = 7.53, p = .006$

# MEDIATION

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95% CI = .07, .40; 20,000 re-samples (*Preacher and Hayes 2008, model 4*)

# COMPREHENSION CHECKS

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To ensure similar understanding across conditions:

- Whether the Flex loan/credit is revolving or not. (98% correct)
- Whether you start paying the Flex loan/credit immediately or only after you have spent the funds. (98% correct)
- Whether the Flex loan/credit is available on a convenient card that is accepted anywhere Visa is accepted. (96% correct)
- Whether they correctly recalled the debt type to which they were assigned. (99.6% correct)

None of the responses varied by condition,  $\chi^2 < 1$ .

# STUDY 5:

## MANIPULATING PSYCHOLOGICAL OWNERSHIP

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Explore process: If differential interest across debt type is in part driven by differences in psychological ownership, manipulating psychological ownership should impact interest.  
2 (debt type: credit vs. loan) X 2 (psychological ownership: control vs. lower)

N = 1607 individuals on Prolific; pre-registration: <https://aspredicted.org/tg4sv.pdf>

# MANIPULATING PSYCHOLOGICAL OWNERSHIP

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## CONTROL CONDITION

### A [LOAN / CREDIT LINE]

Imagine that in addition to your current savings, checking, and credit card accounts, your bank gives you an additional flex [loan / credit line] of \$500. With this [loan / credit line], you can spend up to \$500 per month. You can pay back as little or as much as you would like. Any remaining balance will incur a [10% / 15%] interest rate.

## LOWER PSYCHOLOGICAL OWNERSHIP

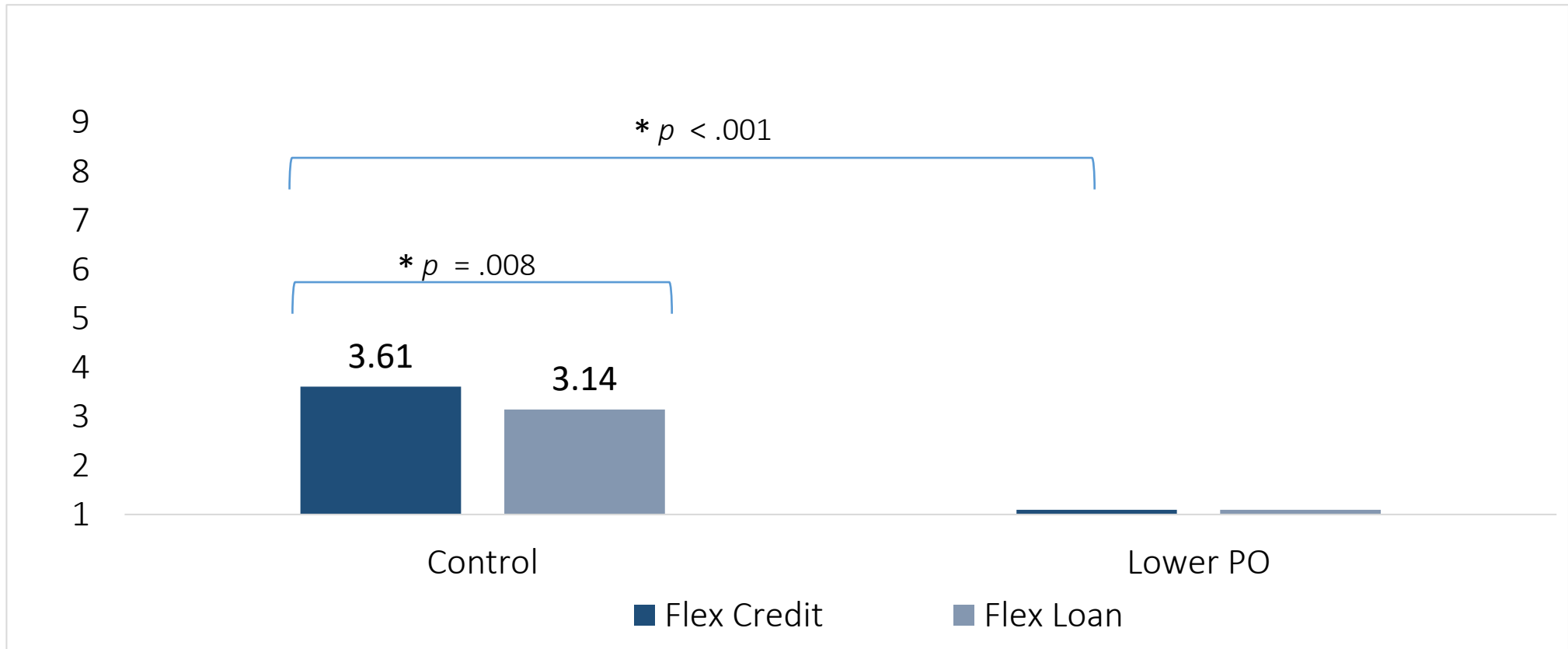
### BORROW MONEY WITH A [LOAN / CREDIT LINE]

Imagine that in addition to your current savings, checking, and credit card accounts, **your bank lets you borrow money with** an additional flex [loan / credit line] of \$500. With this [loan / credit line], you can **borrow** up to \$500 of the bank's money per month. You can pay back as little or as much **of their money** as you would like. Any remaining balance will incur a [10% / 15%] interest rate.

This [loan / credit line] lets you temporarily borrow money that belongs to the bank.



# WILLINGNESS TO USE THE OFFER



# STUDY 6: ONLINE SEARCH BEHAVIOR

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Examine whether online searches for credit cards and loans differ systematically in the use of high versus low psychological ownership language.

Pre-registration: <https://aspredicted.org/3ya44.pdf>

# STUDY 6: PAIRS OF SEARCH TERMS

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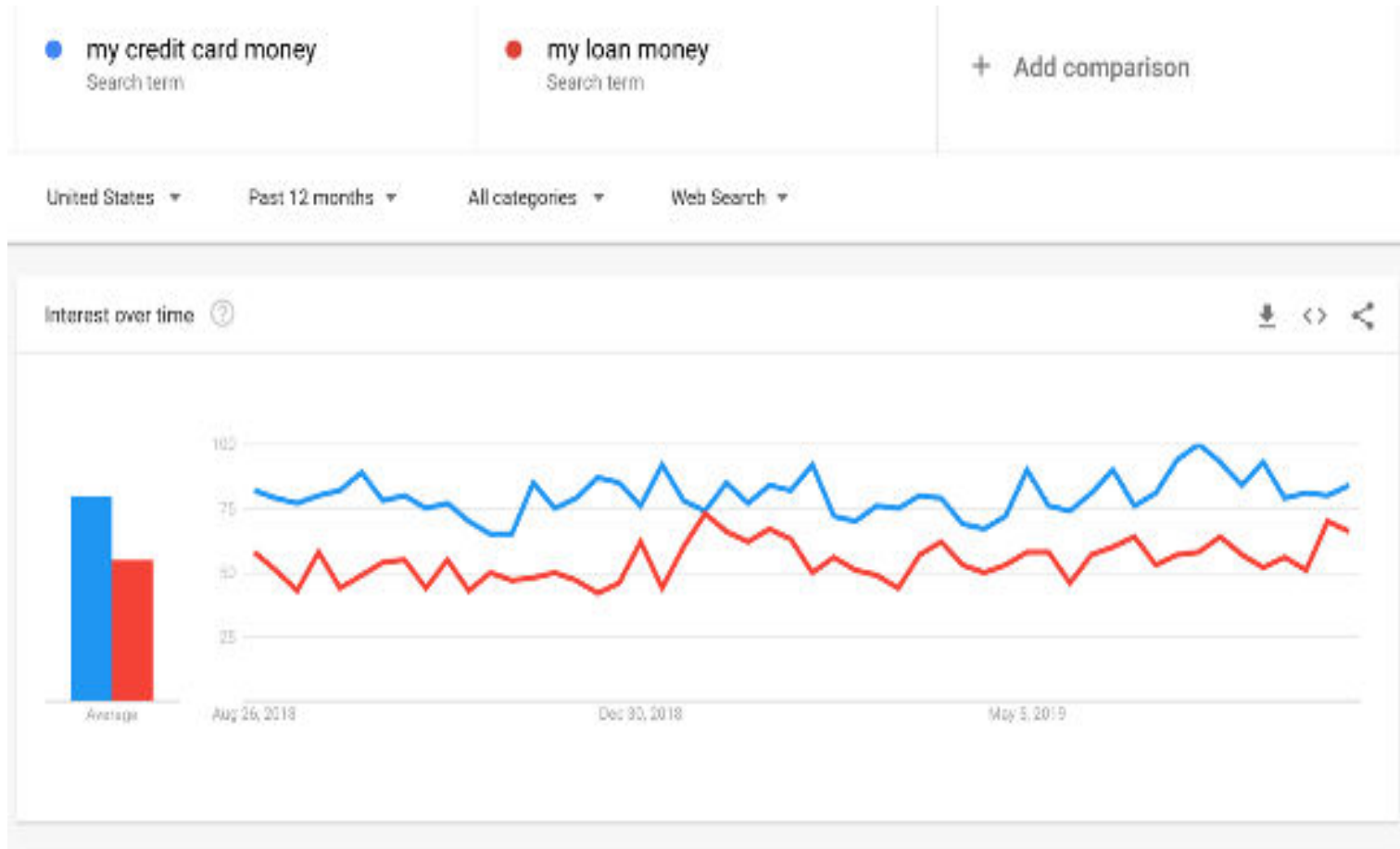
Higher Psych Ownership	Lower Psych Ownership
1. my money	1. borrowed money
2. my cash	2. repaying a ...
3. my funds	3. borrowing on a ...
4. my own money	4. borrowing
5. spending my...	5. debt

As pre-registered, we identified the 5 highest and 5 lowest rated search terms in terms of psychological ownership through pre-testing.

These terms significantly differed from each other in average psychological ownership.

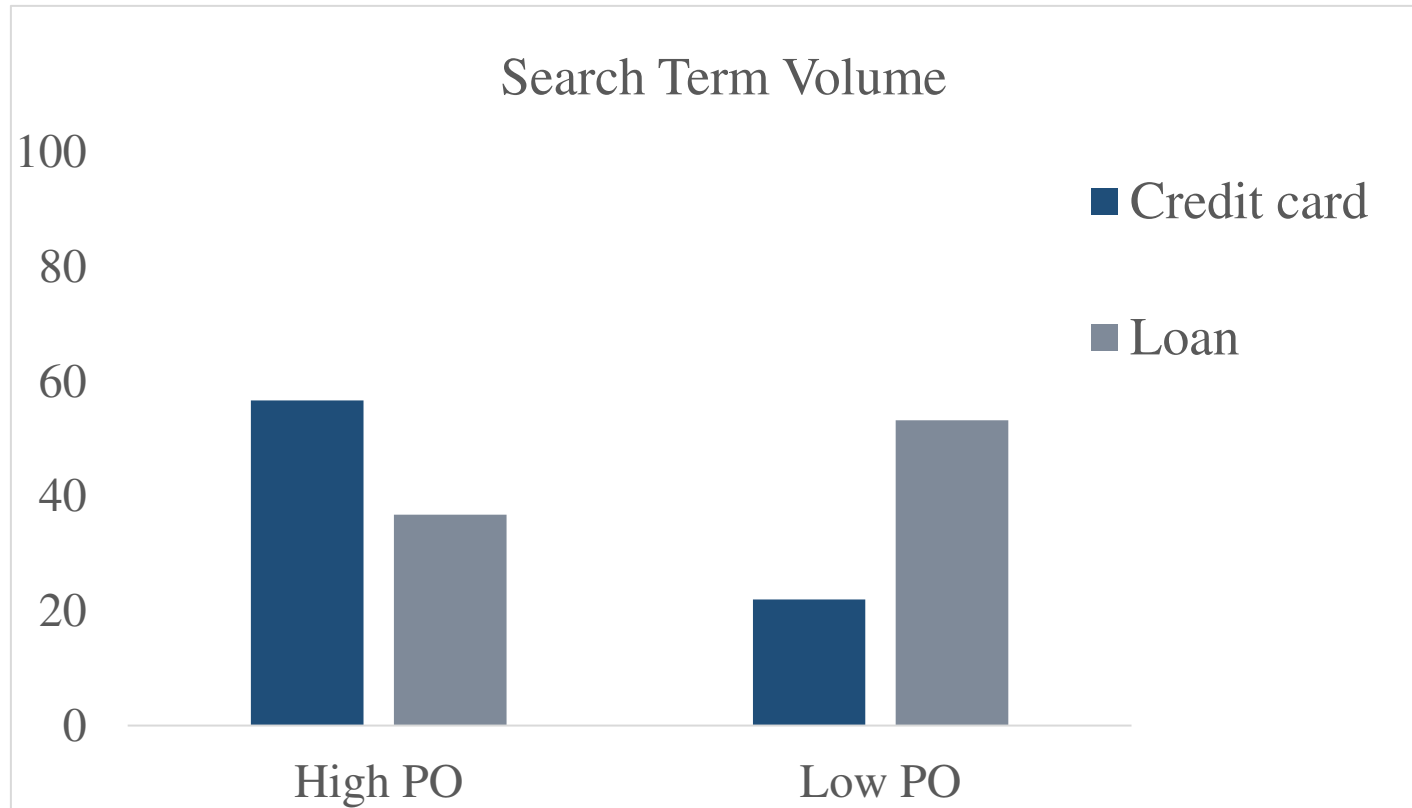
$$t(50) = 11.60, p < .001.$$

# SAMPLE SEARCH TERM PAIR



Each point on the graph represents relative search volume for the given week

# RESULTS: SEARCH TERM VOLUME



- Credit cards are searched more often than loans when accompanied by higher psychological ownership terms
- Loans are searched more often than credit cards when accompanied by lower psychological ownership terms

Interaction,  $B = 51.45$ ,  $SE = 1.95$ ,  $Wald \chi^2 = 687.72$ ,  $p < .001$

# TALK ROADMAP

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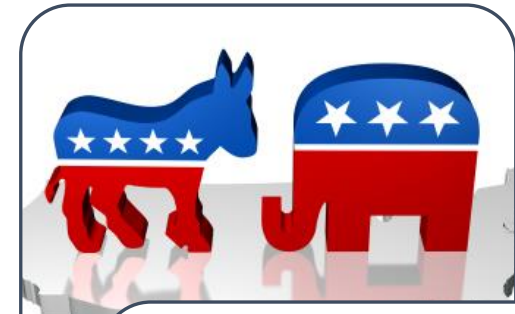
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- Sharma, Tully & Cryder (2021)



## Psych Ownership of Government Benefits

- De La Rosa, Sharma, Tully, Giannella, & Rino (2021)



## New Ideas and Directions

- E.g., Differences across the political spectrum

# PSYCHOLOGICAL OWNERSHIP INTERVENTIONS INCREASE INTEREST IN CLAIMING GOVERNMENT BENEFITS

De La Rosa, Sharma, Tully, Giannella, Rino (2021)



# GOV'T BENEFIT NON TAKE-UP

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Means-tested government benefits contribute to a range of positive outcomes, including lifting millions out of poverty, elevating educational outcomes, and improving health and wellness.

Many eligible individuals do not apply for these benefits.

Over 25% of the people living in poverty in the United States receive no government benefits.

Most work focuses on increasing awareness/knowledge, reducing application complexity, minimizes structural barriers.

e.g., Bhargava and Manoli (2015); Currie (2004); Linos et. al (2020); IRS (2020); Marr et. al (2015); Minton and Giannarelli (2019)



# GOV'T BENEFIT NON TAKE-UP

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Our idea:

Psychological ownership interventions may increase interest in applying for government benefits.

# EXPLAINING THE EFFECT

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Psychological ownership decreases discomfort towards asking for help,  
increasing interest in obtaining relief funds

# PSYCHOLOGICAL OWNERSHIP OF BORROWED MONEY

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- Field experiments

- Study 1: Psychological ownership interventions for EITC benefits
- Study 2: Psychological ownership interventions for stimulus checks
- **Study 3: Comparing psychological ownership to other interventions**

- Process Evidence

- Study 4: Psychological ownership reduces assistance resistance



# FIELD STUDY: PSYCHOLOGICAL OWNERSHIP & EITC

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Examine whether increasing psychological ownership can increase interest in claiming EITC tax credit. Explore the relative effectiveness of such an intervention relative to known nudges.

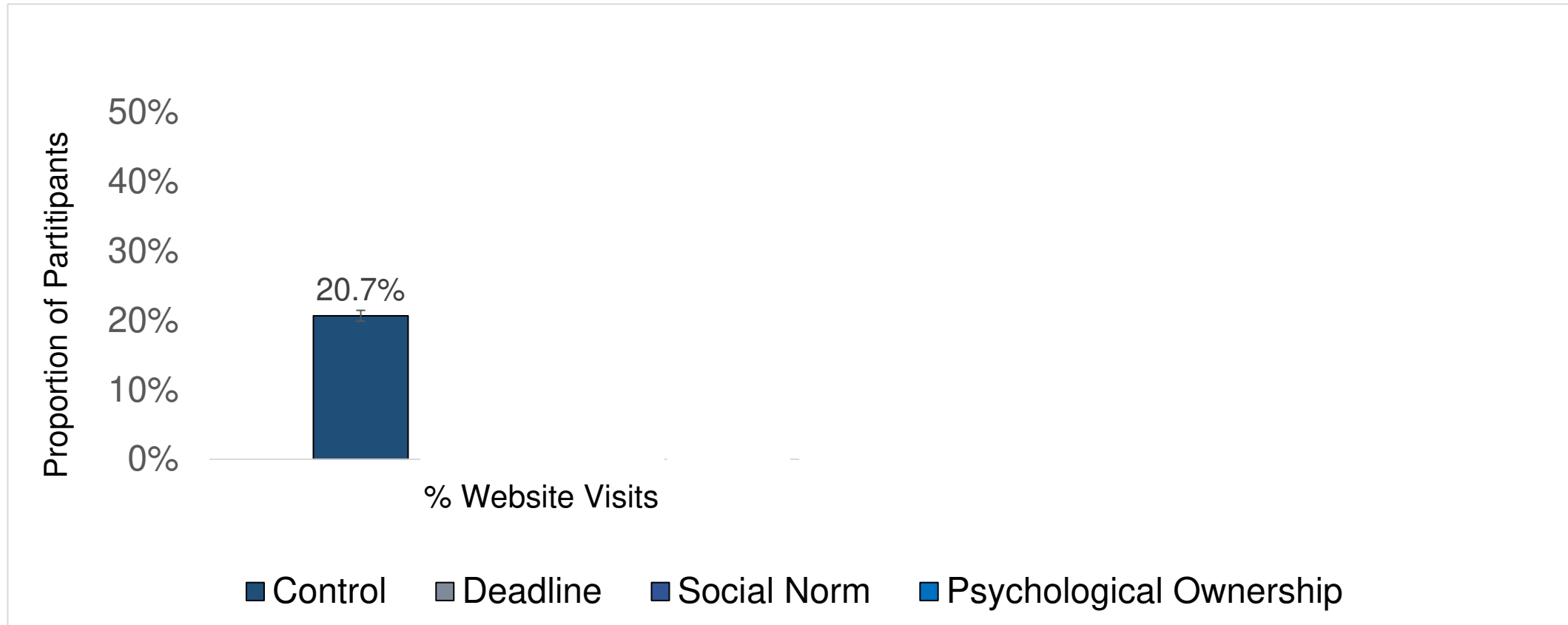
N = 10,000 individuals who qualify for EITC credit based on C.F.A. information; pre-registration: <https://aspredicted.org/3hv9x.pdf>

# CONDITIONS

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**Control:** We believe you are eligible for a \$XXX tax credit. It's easy to file. If you haven't filed your taxes yet, you can do it online for free. Visit [website]

# RESULTS: CLICK THROUGH RATES



Psychological ownership outperformed all other conditions, all  $p < .001$



# PROCESS STUDY: PSYCH OWNERSHIP & COVID FUNDS

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Examine whether increasing psychological ownership can increase interest in claiming available COVID funds. Explore the underlying process.

N = 810 individuals who self-identified as being negatively financially impacted by COVID; pre-registration: <https://aspredicted.org/hm94k.pdf>

# CONDITIONS

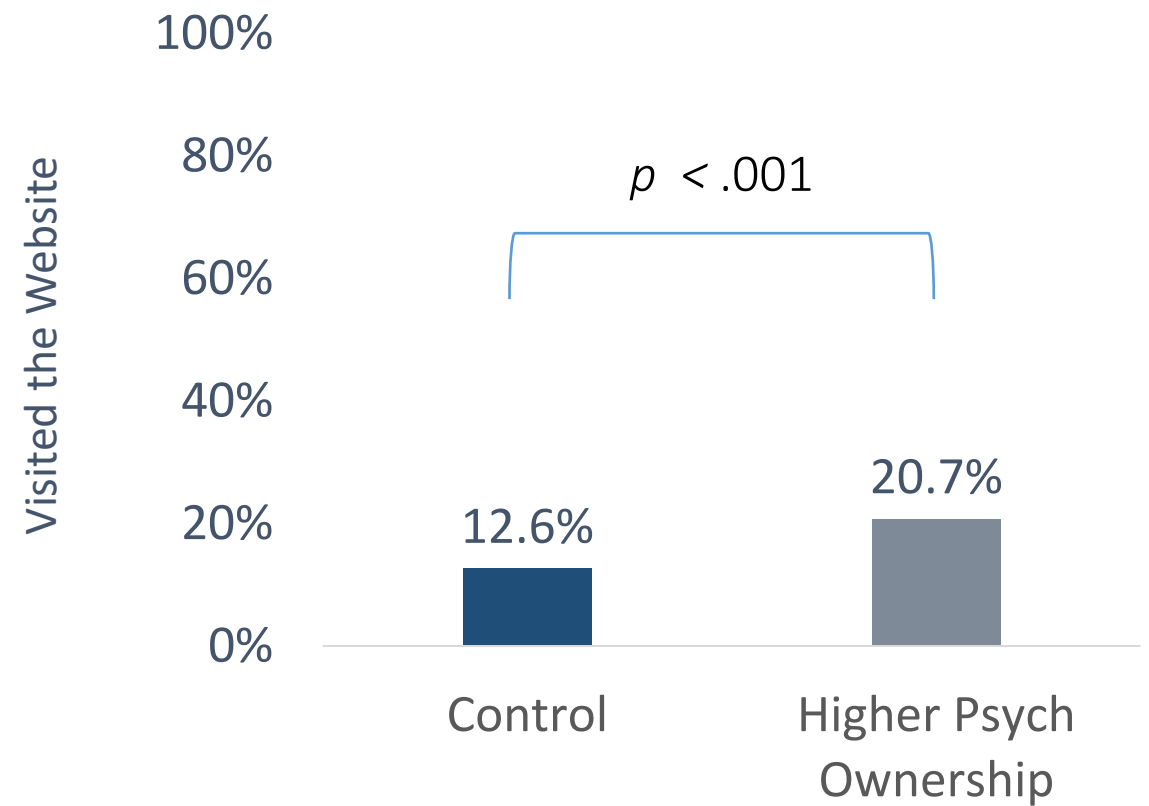
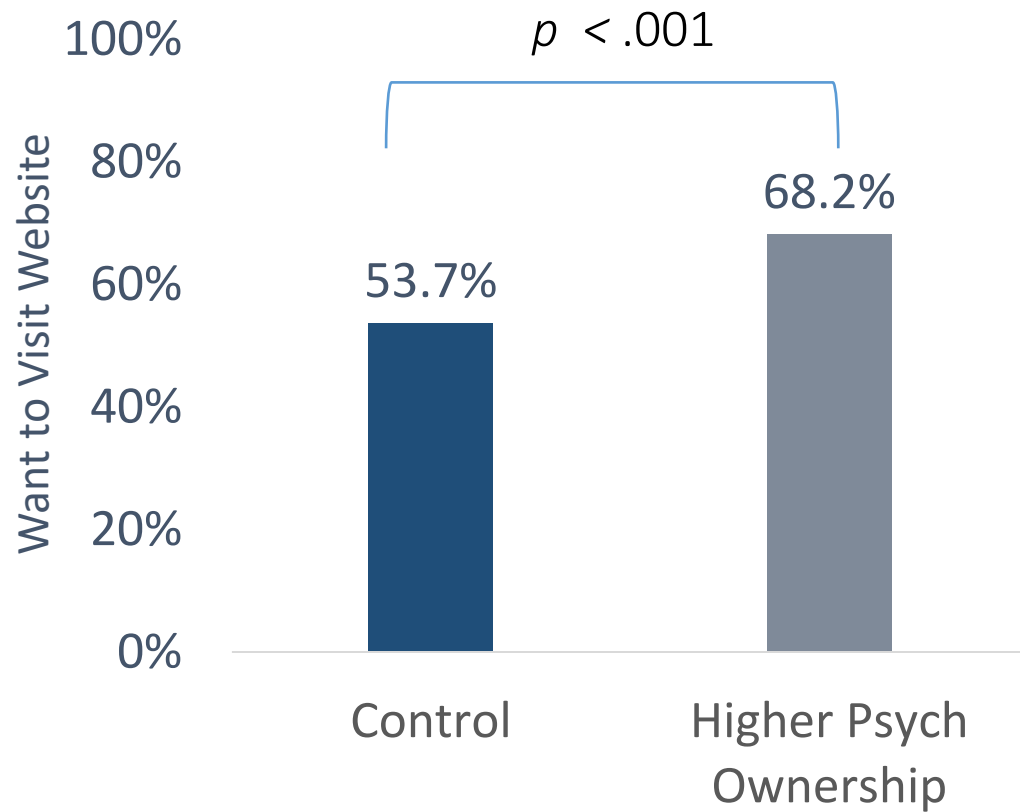
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**Control:** Many organizations have COVID funds. These organizations are giving away their COVID funds to people in need. It is not hard to apply for their money. We can provide a link to a website that shows a list of potential COVID funds at the end of the study.



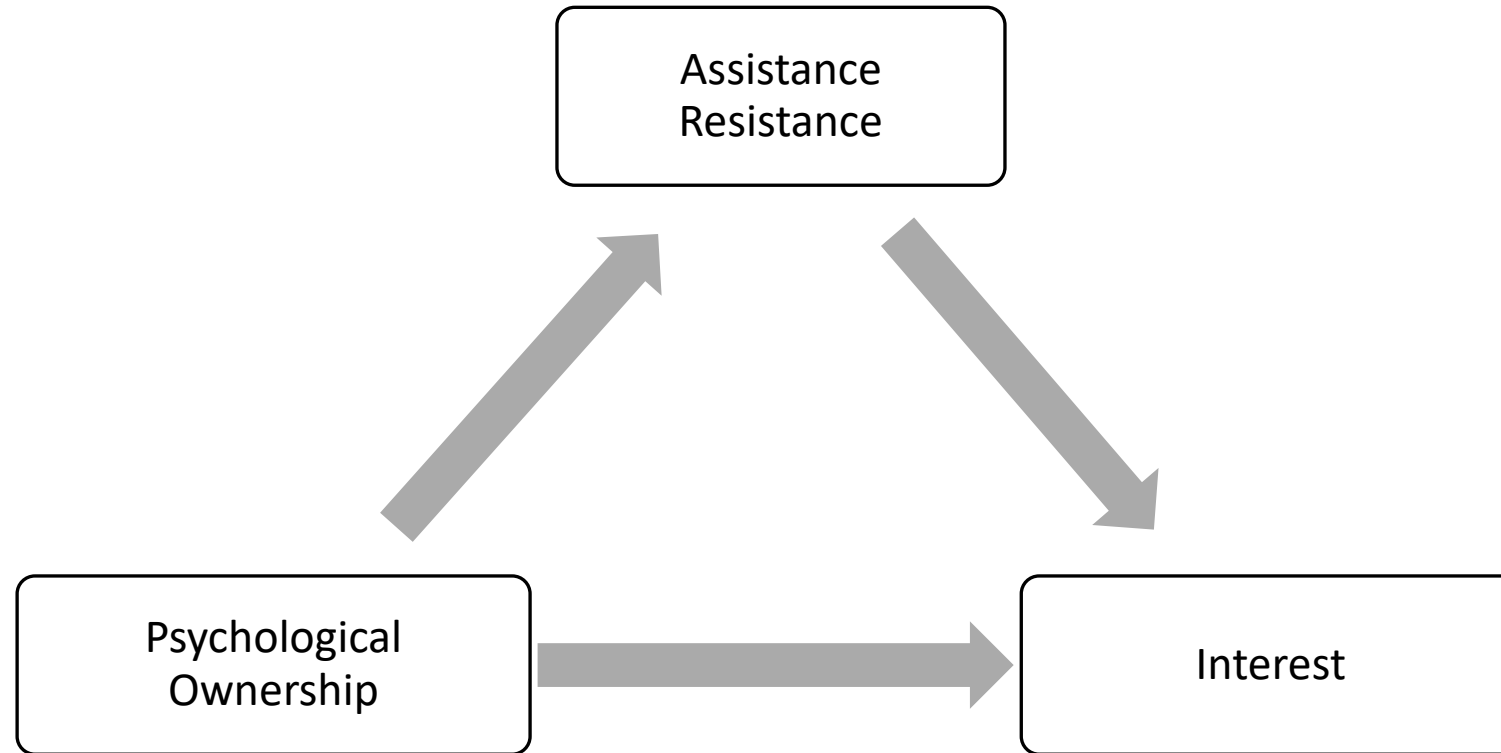
# RESULTS: RESPONSE RATES

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# MEDIATED BY DISCOMFORT TOWARDS ASKING FOR ASSISTANCE

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95% CI = .009, .126; 20,000 re-samples (*Preacher and Hayes 2008, model 4*)

# TALK ROADMAP

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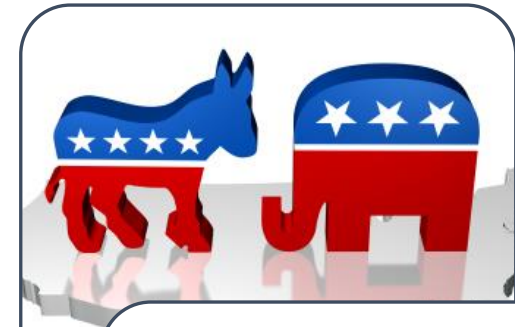
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## New Ideas and Directions

- E.g., Differences across the political spectrum

# NEW IDEAS AND DIRECTIONS

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Other contexts and outcomes of psychological ownership of money:

- Repayment of borrowed money (w/ Daniel Schwartz)
- Taxes (w/ Suzanne Shu)
- Joint finances (w/ Margaret Echelbarger)
- Petty cash / company money
- Grant / research money

# NEW IDEAS AND DIRECTIONS

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Other contexts and outcomes of psychological ownership of money:

- Repayment of borrowed money (w/ Daniel Schwartz)
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# REPAYMENT OF BORROWED MONEY

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Some evidence that higher psychological ownership of borrowed money is associated with lower repayment.

Designing studies to examine the causal order of psychological ownership and repayment.

Exploring opportunities to test psychological ownership messaging in repayment contexts.



# NEW IDEAS AND DIRECTIONS

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Other contexts and outcomes of psychological ownership of money:

- Repayment of borrowed money (w/ Daniel Schwartz)
- **Taxes (w/ Suzanne Shu)**
- Joint finances (w/ Margaret Echelbarger)
- Petty cash / company money
- Grant / research money

# POLITICAL IDEOLOGY & PSYCHOLOGICAL OWNERSHIP

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Conservatives (vs. liberals) have **higher** psychological ownership of **tax money**,  $p < .001$ .

Conservatives (vs. liberals) have **lower** psychological ownership of **benefit money**,  $p < .001$ .

\* Results hold controlling for demographic differences & when using political party instead of ideology.





# OPEN QUESTIONS

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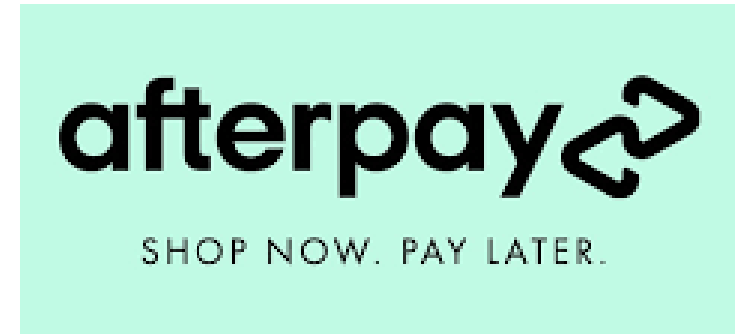
## Antecedents of Psychological Ownership of Money:

- Nature vs nurture: parental influence, marketing, **policy (e.g., loan forgiveness)**?
- Linguistic associations? Familiarity? Autonomy of use? Ease (or difficulty) of acquisition?
- For borrowed money: Relationship with the lender? Beliefs of repayment abilities (confidence)?
- Societal influences

Dynamic processes of psychological ownership (before apply/get, after spent, after repaid)

# PAYMENT TYPE AVAILABILITY AND USAGE

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# SUMMARY & IMPLICATIONS

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- Seemingly basic financial decisions (going into debt, applying for government benefits) are to some extent discretionary.
- Psychological ownership of money is an important determinant of consumers financial decisions.
  - Psychological ownership predicts interest in accessing different monetary resources and can be more influential than monetary factors (e.g., interest rates).
  - These perceptions can vary at the individual and contextual level.
  - Naming conventions and changes to messaging may impact psychological ownership & can be used to **either** increase or decrease interest in accessing funds.
- Psychological ownership interventions may be a useful behavioral science intervention.

# Thank You!

Please send collaboration inquiries, questions, or comments to:  
**tullyste@marshall.usc.edu**

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Cindy Cryder  
Wash U in St. Louis



Wendy De La Rosa  
U of Pennsylvania



Eric Giannella  
Code for America



Gwen Rino  
Code for America



Suzanne Shu  
Cornell University