Validating the Visual Conjoint, with an Application to Candidate Evaluation on Social Media

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Conjoint Experiments and External Validity

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▶ Current paradigm: external validity

▶ Can talk about theory/mechanism testing

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- ▶ How similar are the treatments in the study and in the target context?

- ▶ Findley et al (2021): analogous treatment of external validity, "scope conditions"

- ▶ What is the scope condition of a candidate choice conjoint? Which target contexts are they similar to?

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▶ Match race, gender etc of US Congress

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- ► "Our external validation test takes advantage of a unique behavioral benchmark provided by data from a natural experiment in Switzerland"

- ► *Empirically* find closest match with paired choice conjoint

Figure S2: Sample leaflet sent out to voters (English translation)

Agenda item 2

Decision on the naturalization application of the Italian citizen, APPLICANT, born November 30, 1962 in Schwyz, residing in 6440 Brunnen, STREET.

The municipal request is as follows:

The applicant was born on November 30, 1962, in Schwyz, as the son of APPLICANT'S FATHER and APPLICANT'S MOTHER. He grew up in Brunnen since his birth, together with his younger brother and parents. Following Kindergarten he completed 6 years in the local primary school and 3 years in the secondary school. He then decided to become a teacher and passed the entry exam. Since early 1979, he is completing his teacher training in Rickenbach. The applicant and his family have a good reputation and nothing negative is known about them. Since he lived in Switzerland since his birth and visited the local schools, the applicant is well familiar with the Swiss and local conditions and can be regarded as assimilated. The formal and material requirements for naturalization in the canton Schwyz and the municipality of Ingenbohl are met.

Bitte schauen Sie sich das Profil des Gesuchstellers gründlich an und treffen Sie dann Ihre Entscheidung.

	Gesuchsteller 1
Geschlecht	weiblich
Herkunftsland	Italien
Alter	55 Jahre
In der Schweiz seit	Geburt
Bildungsstand	obligatorische Schule
Sprachkenntnisse	spricht akzentfrei Schweizerdeutsch
Integrationsstatus	unterscheidet sich kaum vom Schweizer

Wollen Sie, dass Gesuchsteller 1 das Schweizer Bürgerrecht erteilt wird?

○ Ja

○ Nein

The External Validity Paradox

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- ▶ "No Free Lunch" Theorem from machine learning

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▶ Distribution of treatment modalities should match the distribution in the target context

▶ ...but what is that?

Ecological Validity, Mundane Realism

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- ▶ Ecological Validity: the "methods and materials"

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▶ Ecological Validity: the "methods and materials"

▶ Mundane Realism: is it a weird experience?

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► Original term referenced specific perceptual cues

► Also discussed "representative design"

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▶ Higher in T-validity with respect to the context of citizens evaluating politicians on social media

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▶ Mechanically, two pathways by which this could affect AMCE
  ▶ Differential attribute salience
  ▶ Realism (or *possibility*) of encoding a given attribute

	Candidate 1	Candidate 2
Religion	Evangelical Protestant	Mainline Protestant
Profession	High School Teacher	Farmer
Age	75	68
Annual Income	$54,000	$210,000
Race / Ethnicity	Caucasian	Black
Gender	Male	Male
Military Service	Served in U.S. military	No military service
College Education	BA from small college	BA from Baptist college

Congressman Smith
@CongressmanSmith

I'm a Democratic candidate for the House of Representatives. Born in 1959, I'm a College graduate, I served, and currently I am a lawyer.

📍 Washington, DC   🔗 www.congress.gov   📅 Joined November 2010

344 Following   **3K** Followers

Tweets	Tweets & replies	Media	Likes

Follow

Congressman Smith
Free and fair elections are a cornerstone of our democracy, plain and simple.
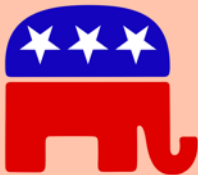
💬 205   🔁 732   🤍 393

Congressman Smith
The wealthy already pay far less in taxes than everyday Americans. It's time they pay their fair share.

💬 229   🔁 350   🤍 508

Congresswoman Smith
@CongresswomanSmith

I'm a Republican candidate for the House of Representatives. Born in 1987, I'm Jewish, a Ivy League graduate and currently I am a doctor.

📍 Washington, DC   🔗 www.congress.gov   📅 Joined November 2010

863 Following   **12K** Followers

Tweets	Tweets & replies	Media	Likes

Congresswoman Smith

It's #NationalFarmersDay, so #ThankAFarmer!

💬 651   🔁 1747   ♡ 5330

Congresswoman Smith

While violence and threats of violence have no place in our society, parents have a right to be heard and voice their concern about what their children are being taught in the classroom.

💬 349   🔁 1130   ♡ 4064

Differential attribute salience

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- ▶ Box conjoints!

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- Lesson of T-validity: there is no one "best" ranking of attribute salience

Differential attribute salience

▶ In what context do citizens encounter information where candidate income and candidate race have equal salience?

▶ Box conjoints!

▶ Much more natural that attribute salience varies

▶ Lesson of T-validity: there is no one "best" ranking of attribute salience–it always depends on the target context

Realism (or indeed *possibility*) of encoding a given attribute

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- ▶ Standard candidate choice conjoints include income: would be *awkward* in the visual conjoint

- ▶ Visual conjoint includes *social feedback*

- ▶ Appearance of candidate is crucial

- ▶ Abrajano et al (2018) show differential evaluation of candidates when race is encoded with a picture than just with a box

Experimental Design

- ▶ Selected 500 respondents from a representative sample of Twitter/Facebook users with YouGov

- ▶ Respondents asked to evaluate two images/profiles

- ▶ 10 tasks per type of conjoint

- ▶ Final sample 10,000 observations $\rightarrow$ MDE 0.045, less than median for conjoints

- ▶ Included three attention checks: two after consent form, and one after demographics (97% qualified)

Pre-Registered Hypotheses

▶ More salient attributes (race, gender): *larger* AMCE in visual conjoint
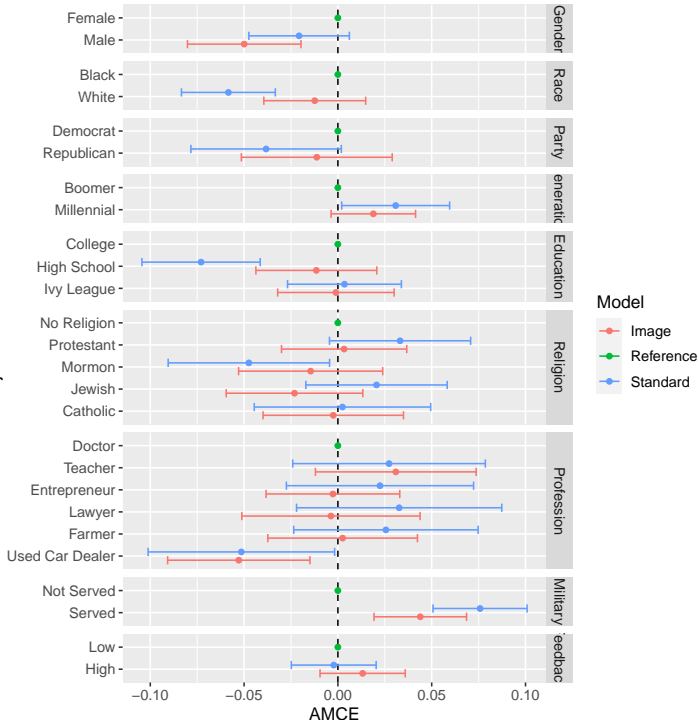
Pre-Registered Hypotheses

▶ More salient attributes (race, gender): *larger* AMCE in visual conjoint

▶ Less salient attributes (education, profession, age, veteran, religion): *smaller* AMCE in visual conjoint

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- ▶ Social feedback HTE in respondent age and respondent digital literacy in the visual but not box conjoint
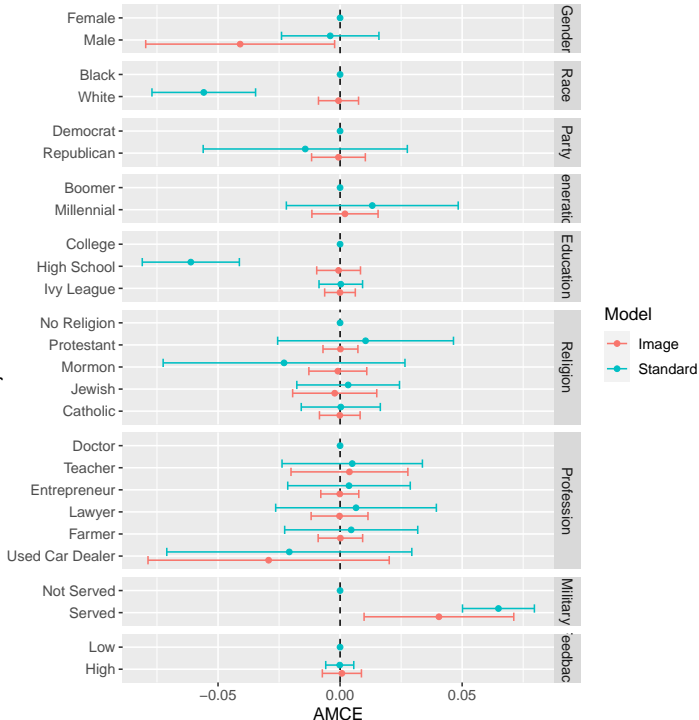
Results

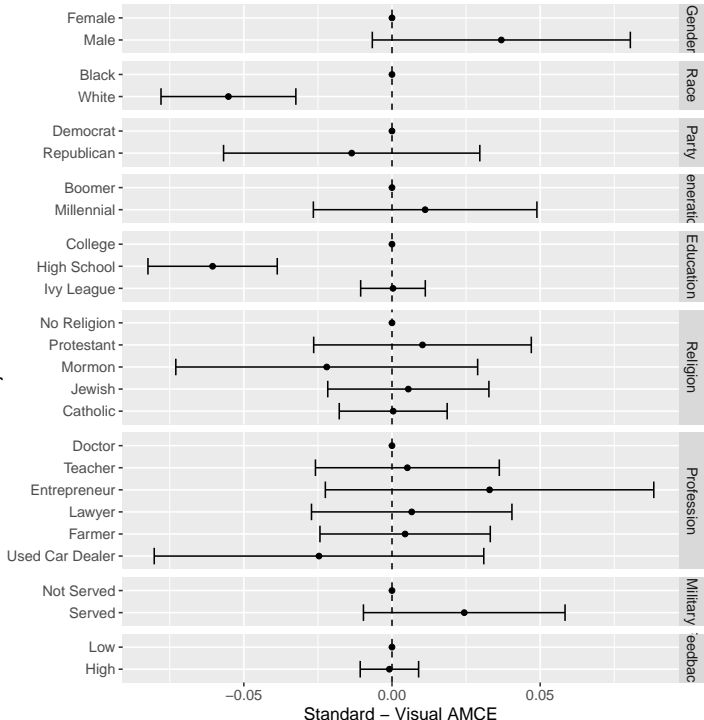Figure showing marginal means for Image and Standard models across two panels: "Millennial or younger" and "Gen X or older"

Feature Level (y-axis, top to bottom):
Gender: Female
Gender: Male
Race: White
Race: Black
Party: Republican
Party: Democrat
Generation: Millennial
Generation: Boomer
Education: High School
Education: College
Education: Ivy League
Religion: Catholic
Religion: Jewish
Religion: Mormon
Religion: Protestant
Religion: No Religion
Profession: Doctor
Profession: Entrepreneur
Profession: Farmer
Profession: Lawyer
Profession: Teacher
Profession: Used Car Dealer
Military: Not Served
Military: Served
Feedback: Low
Feedback: High

X-axis: Marginal Means (0.40, 0.45, 0.50, 0.55, 0.60, 0.65)

Model legend: Image (red), Standard (teal)
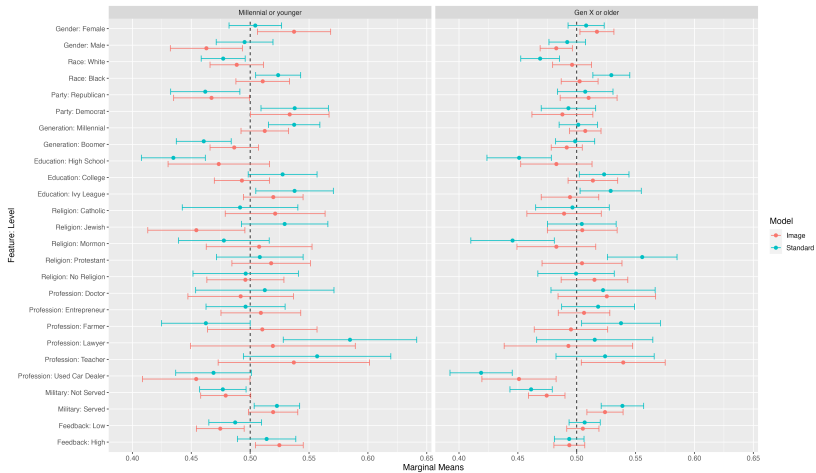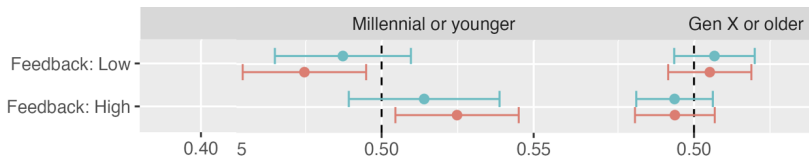
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- ▶ External validity is *not like internal validity*: moving target

Thank you!