

West Chester University

Digital Commons @ West Chester University

Sustainability Research & Practice Seminar
Presentations

Sustainability Research & Creative Activities @
WCU

12-1-2021

Why Science is Important to Us All: Identity and Environment

Anita K. Foeman

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Part of the [Gender, Race, Sexuality, and Ethnicity in Communication Commons](#), and the [Sustainability Commons](#)

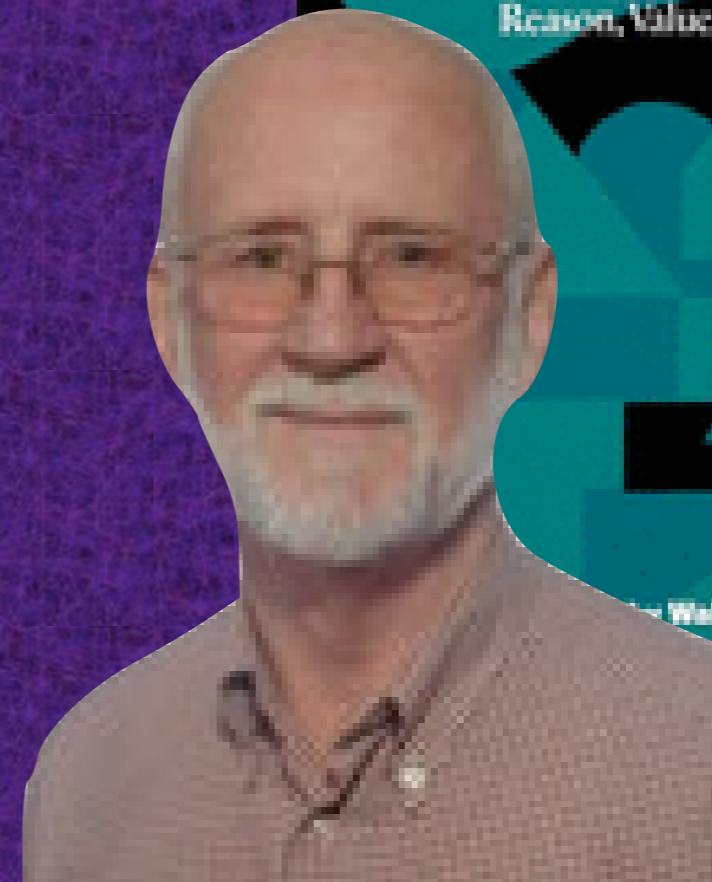
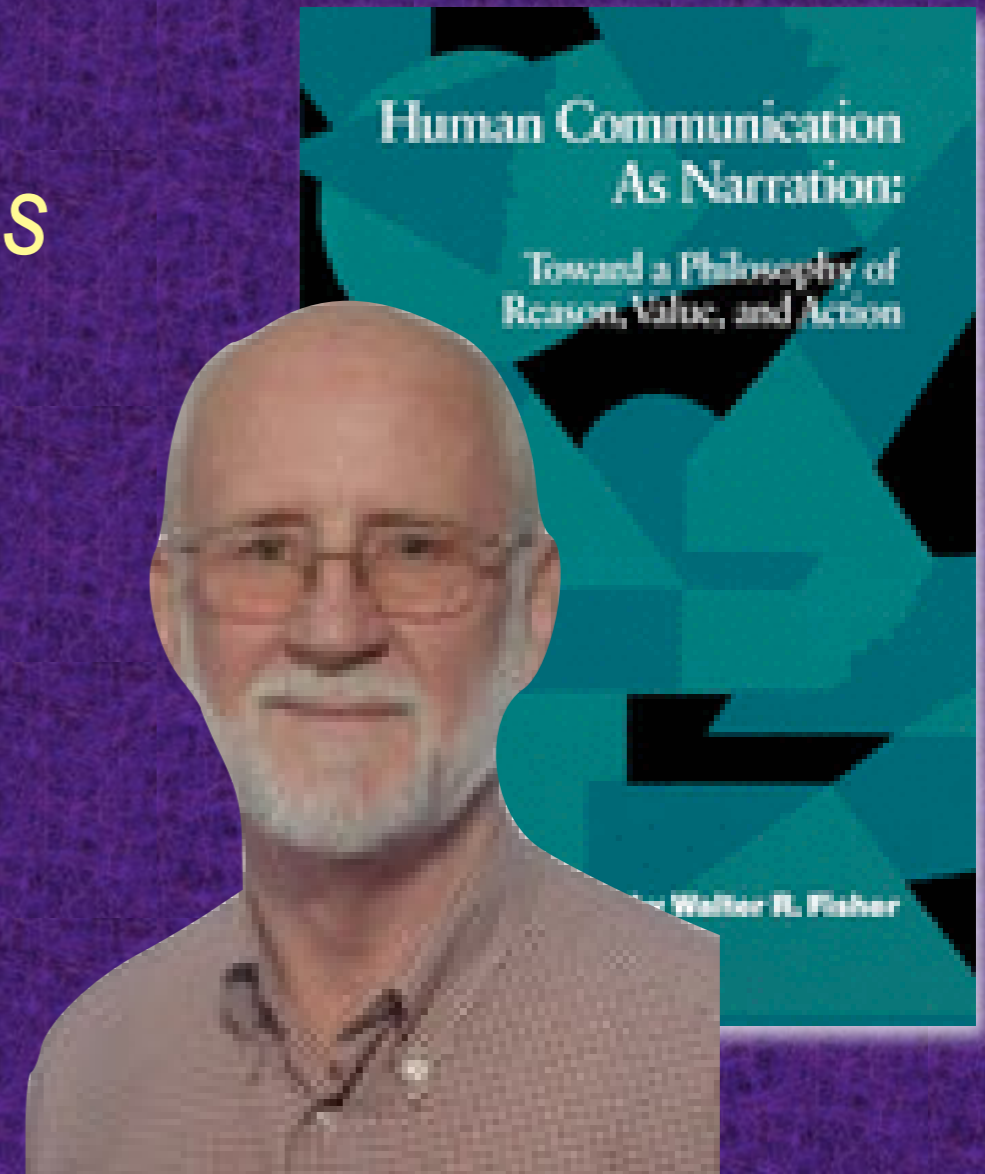
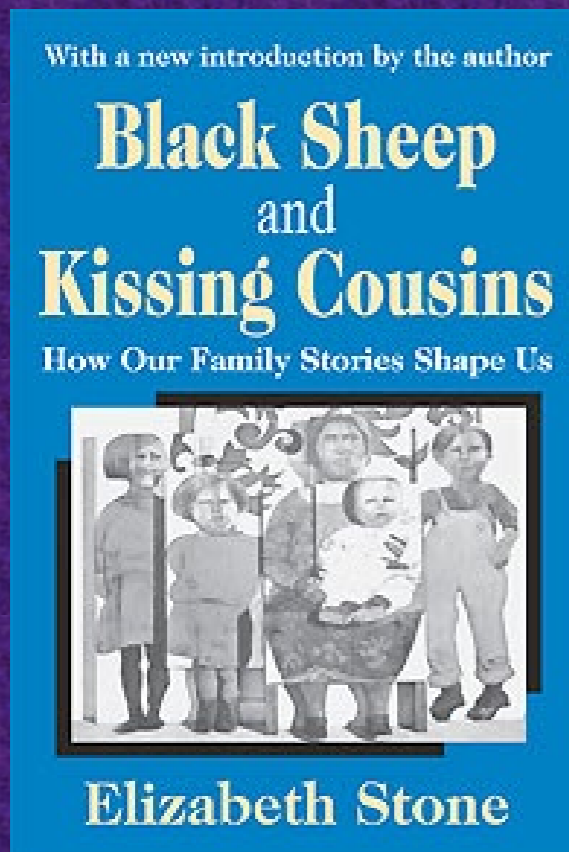


The Nature of Narrative

People are storytelling animals.

Walter Fisher

Narratives often read more like fairytales than genealogy. Elizabeth Stone



"A lovely, rollicking book, direct and clear... [A] fascinating glimpse into anthropology in the era of the genome." — *Wall Street Journal*

THE SEVEN DAUGHTERS OF EVE

THE SCIENCE THAT REVEALS OUR GENETIC ANCESTRY



BRYAN SYKES

BRYAN SYKES





Marie Mosley...
had exactly the same DNA
as the [5000 year old]
Iceman.

*That could mean
only one thing.*

Marie was a relative
of the Iceman himself...





One of the strangest, and at first, surprising things about this story...is that Marie began to feel something for the Iceman.

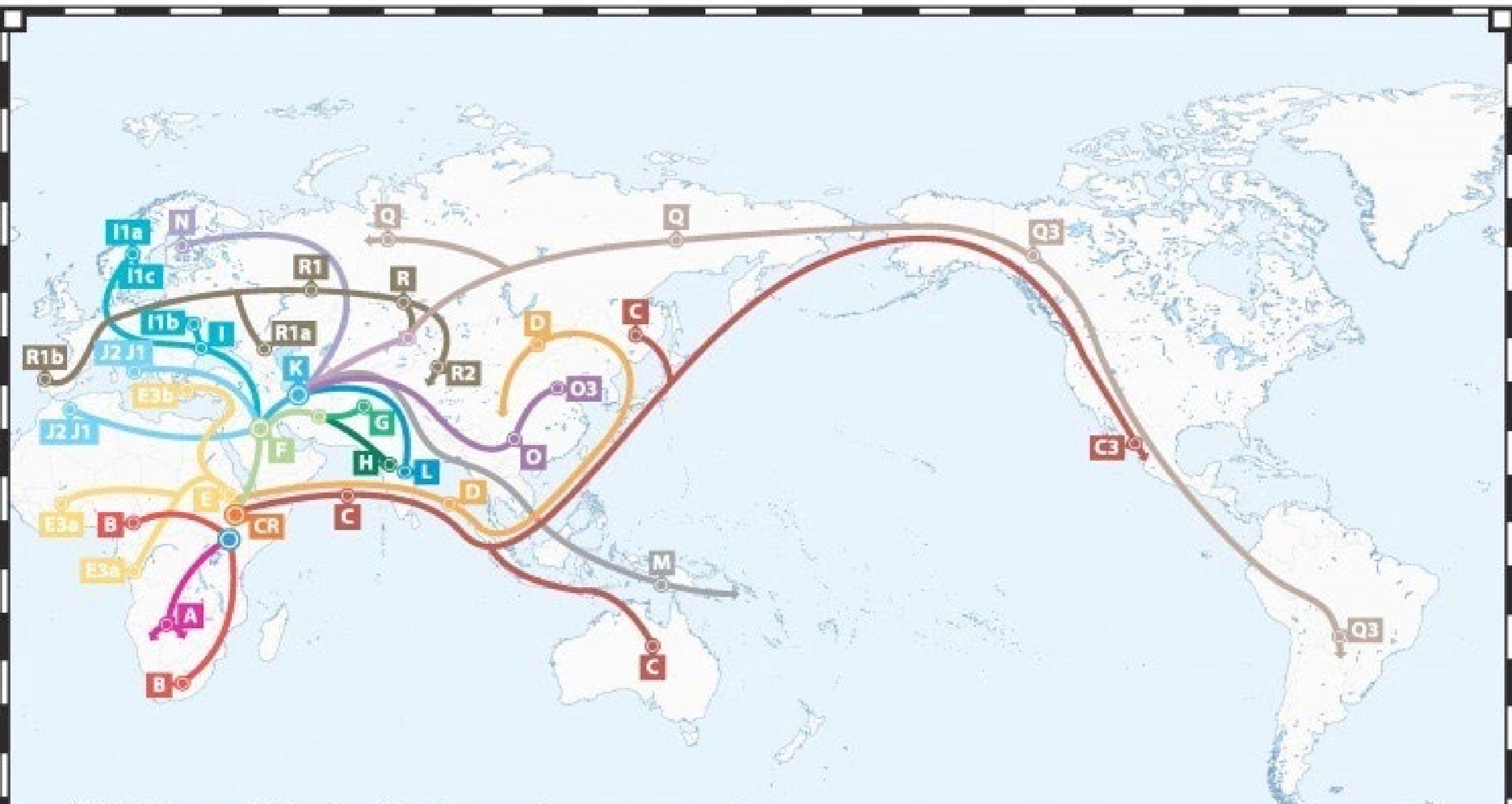
She had seen pictures of him being shunted around from glacier to post-mortem room, poked and prodded, opened up, bits cut off.



To her, he was no longer just the anonymous curiosity whose picture had appeared in the papers and on television.



She had started to think of him as a real person and as a relative – which is exactly what he was.



Y-DNA Human Migration (Haplogroups)

Thousands of Years Ago

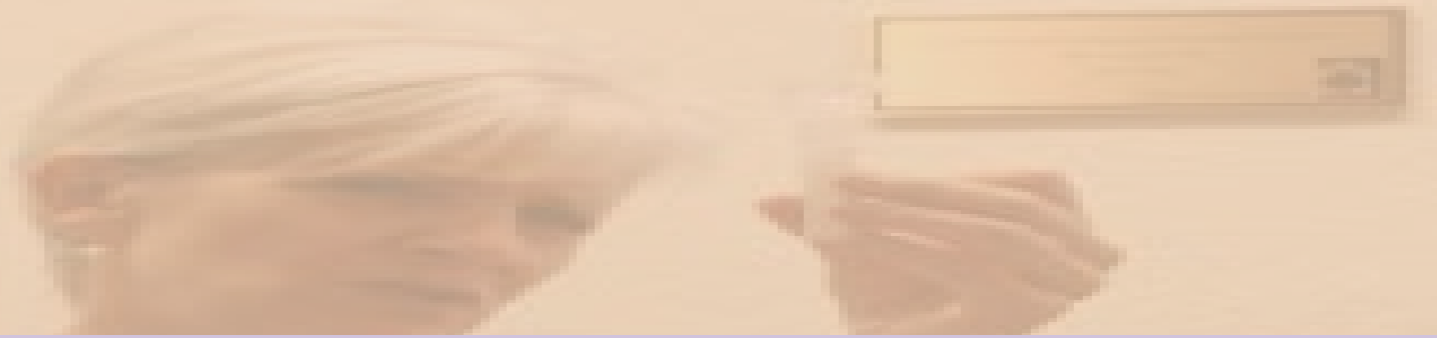
A	60	I	25	O	35
B	50	J1	25	O3	10
CR	50	J2	20	P	35
D	50	G	20	Q	20
C	50	H	30	Q3	10
E	50	K	40	R1	30
E3a	20	L	30	R1a	10
E3b	30	M	10	R1b	25
F	45	N	10		



*WE
CONTINUE
TO CHANGE
AND EVOLVE*



Protocol



Results



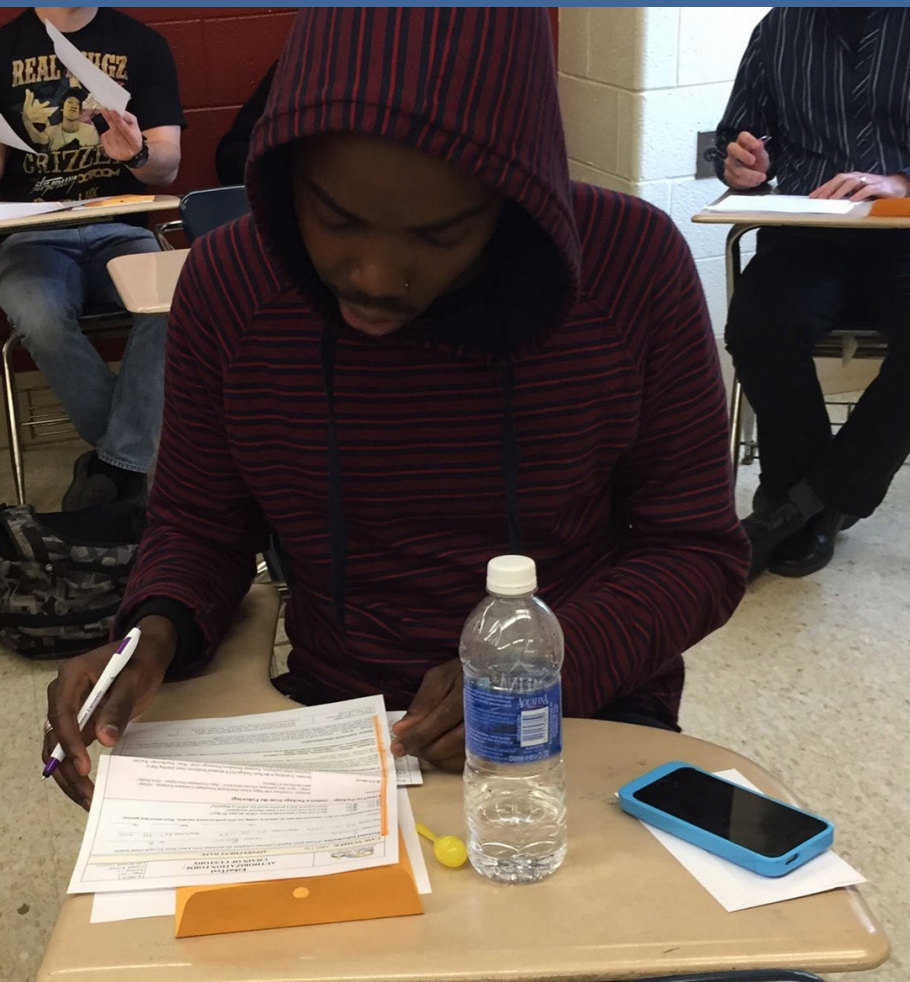
Discussion



Protocol



Pre-test
Questionnaire



DNA Test

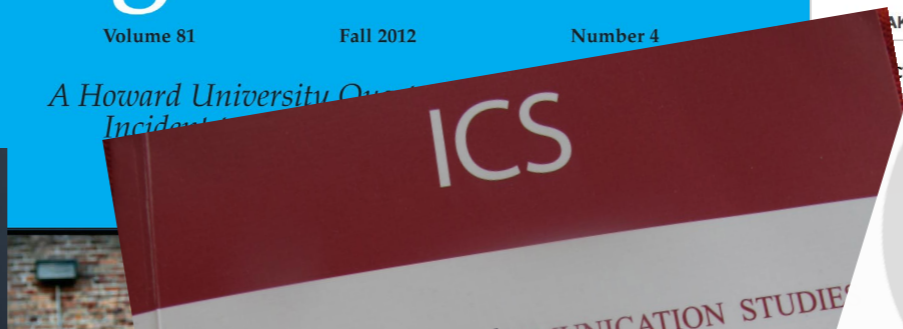
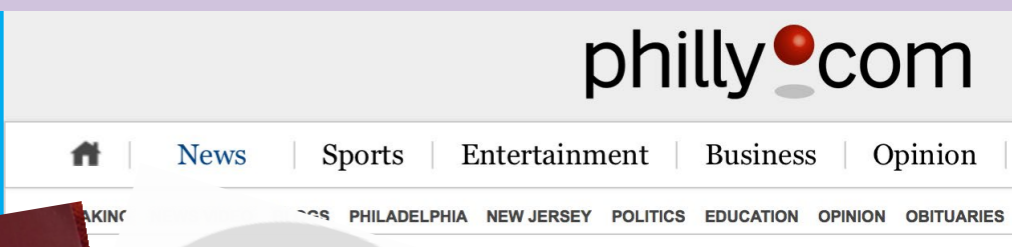
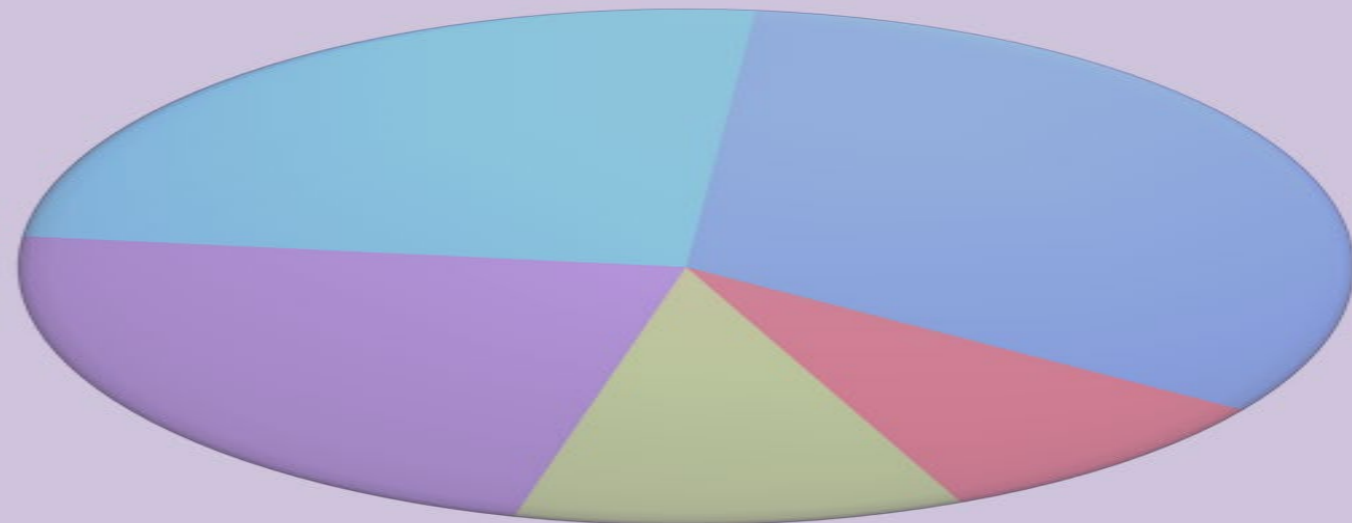


Post-test
Conversation



Results

We've published our findings in a wide variety of publications.



The DNA Discussion Project at West Chester University









XXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

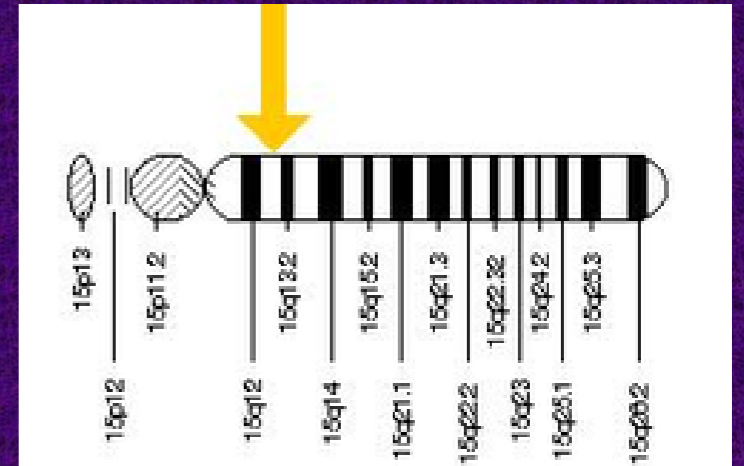
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXX

One tenth

Race is a construction and
ancestry is a construction.
The science describes the
world and as humans we
judge, often to our own
detriment.

One interesting ancestry informative marker is HERC2. It is associated with European heritage, but not always...



Scientists studying the genetics of eye color have identified that a mutation called HERC2 turns brown eyes blue.

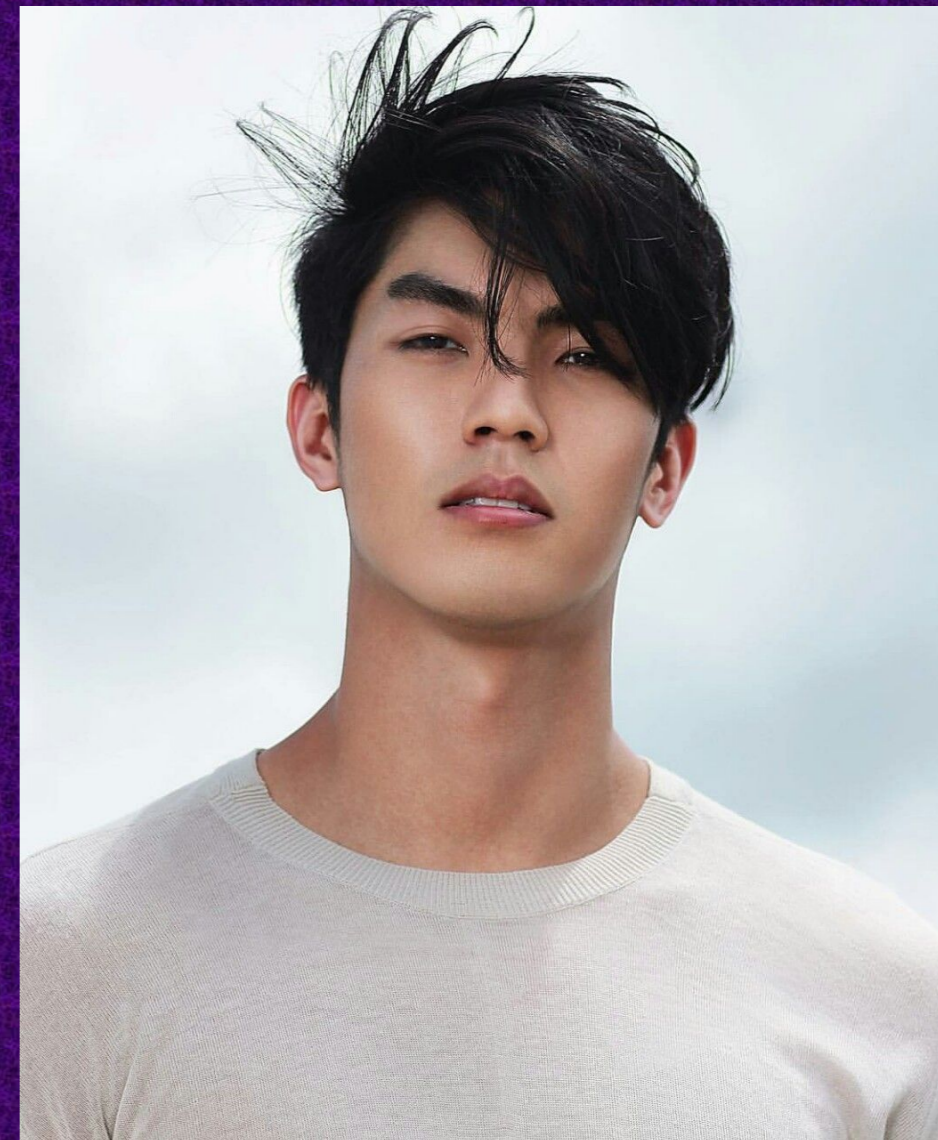
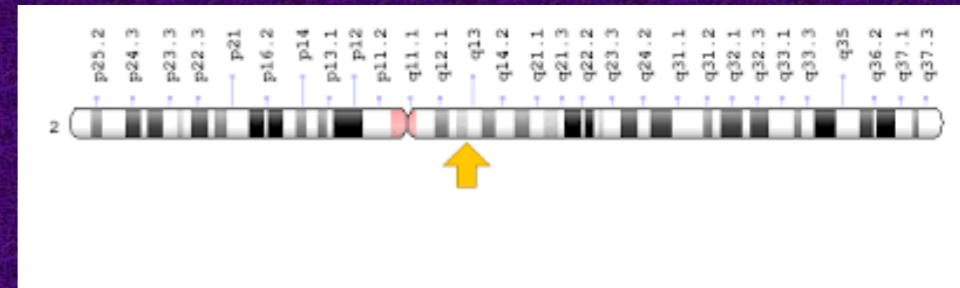


The variation has only existed for 6 to 10,000 years, prior to that everyone had brown eyes.

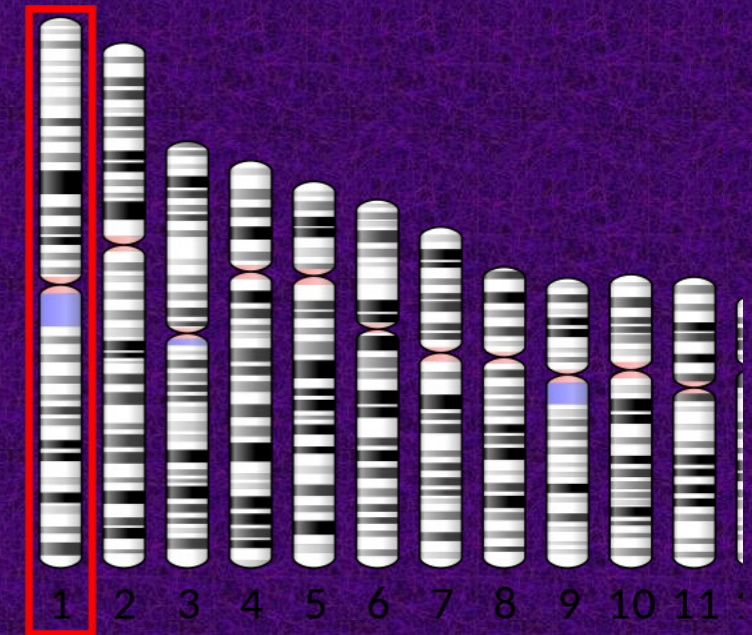


Between 8 and 10 % of the population has blue eyes.

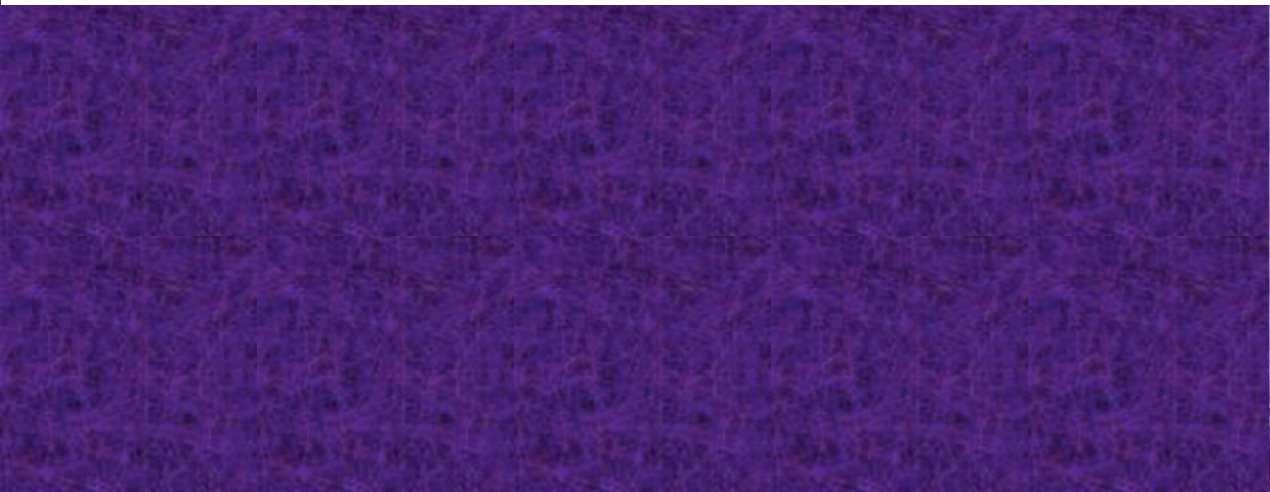
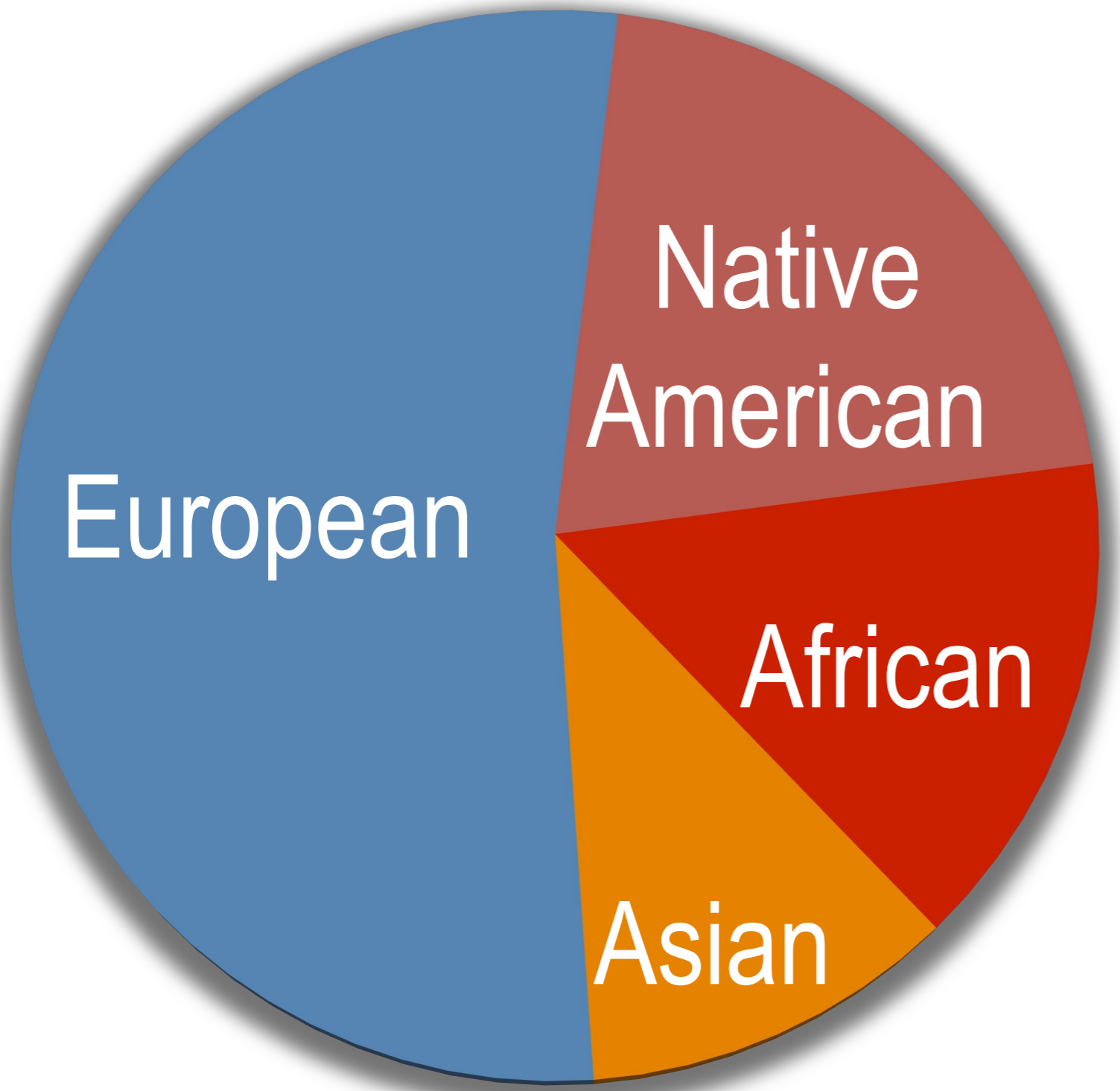
EDAR's a gene on chromosome 2 that plays a key role in the development of hair and skin before you're born. The *EDAR* gene mutation has high derived frequencies in East Asians and is associated with a suite of physical characteristics, most famously, the thickness of hair shaft and “shovel-shaped” incisors. It is a reason people of East Asian ancestry seem to have very thick straight hair and can look young and androgenous.



The overwhelming majority of people of African descent have a particular variant of the Duffy gene. The Duffy phenotype is exceedingly rare among Caucasians. The variant provides a level of resistance to malaria. Some have felt that it offers Africans a level of resistance to COVID. The DARC gene is one of the most racially informative markers.











A pie chart illustrating genetic ancestry. The chart is divided into two segments: a large blue segment representing European ancestry and a smaller red segment representing African ancestry. The word "European" is written in white text on the blue segment, and the word "African" is written in white text on the red segment.

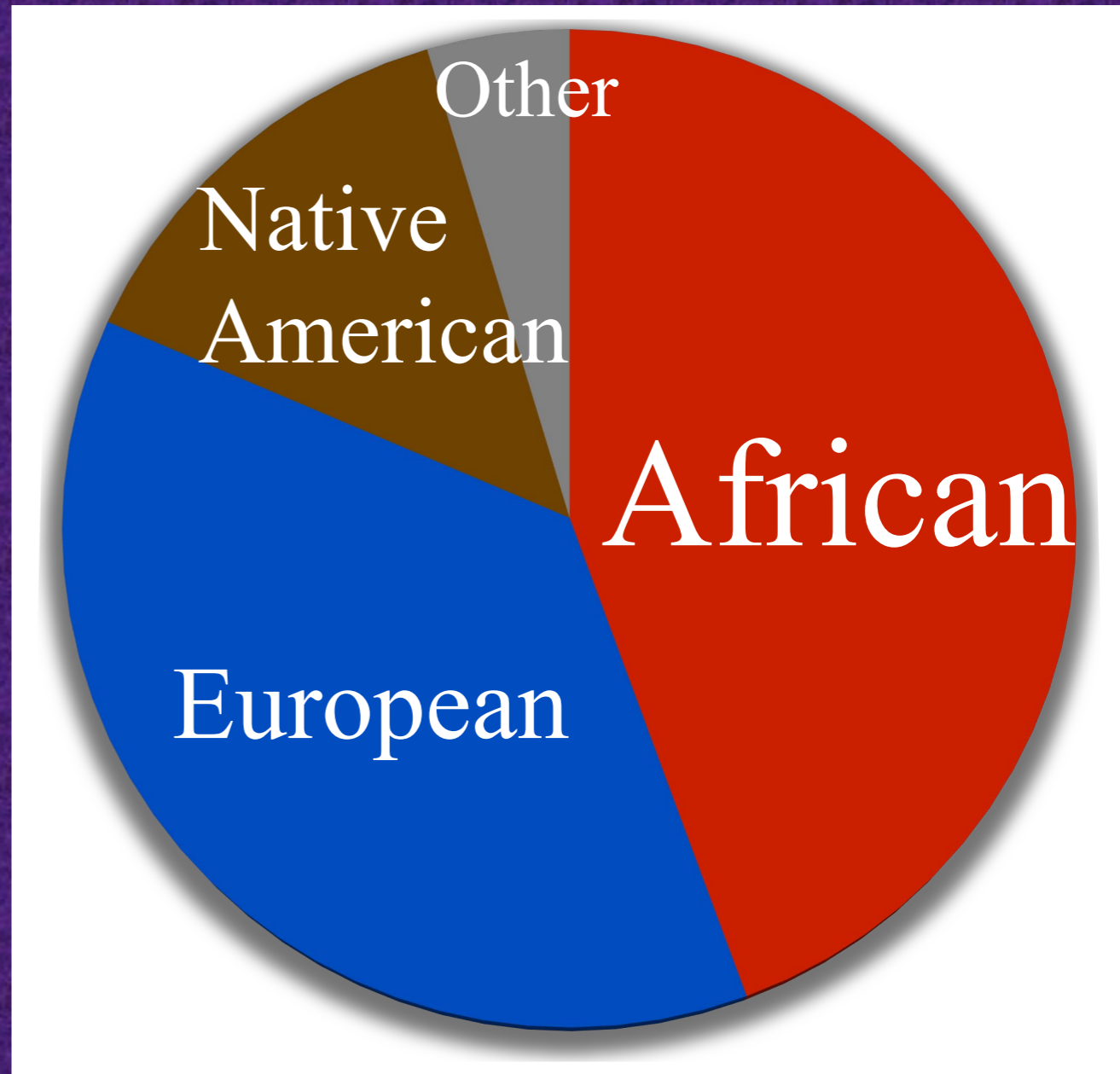
Ancestry	Percentage
European	~90%
African	~10%

European

African







How many of these people have
African ancestry?



They all do!

How many of these people have
Asian ancestry?



They all do!

How many of these people have
Native American ancestry?



They all do!

How many of these people have
European ancestry?



They all do!



A



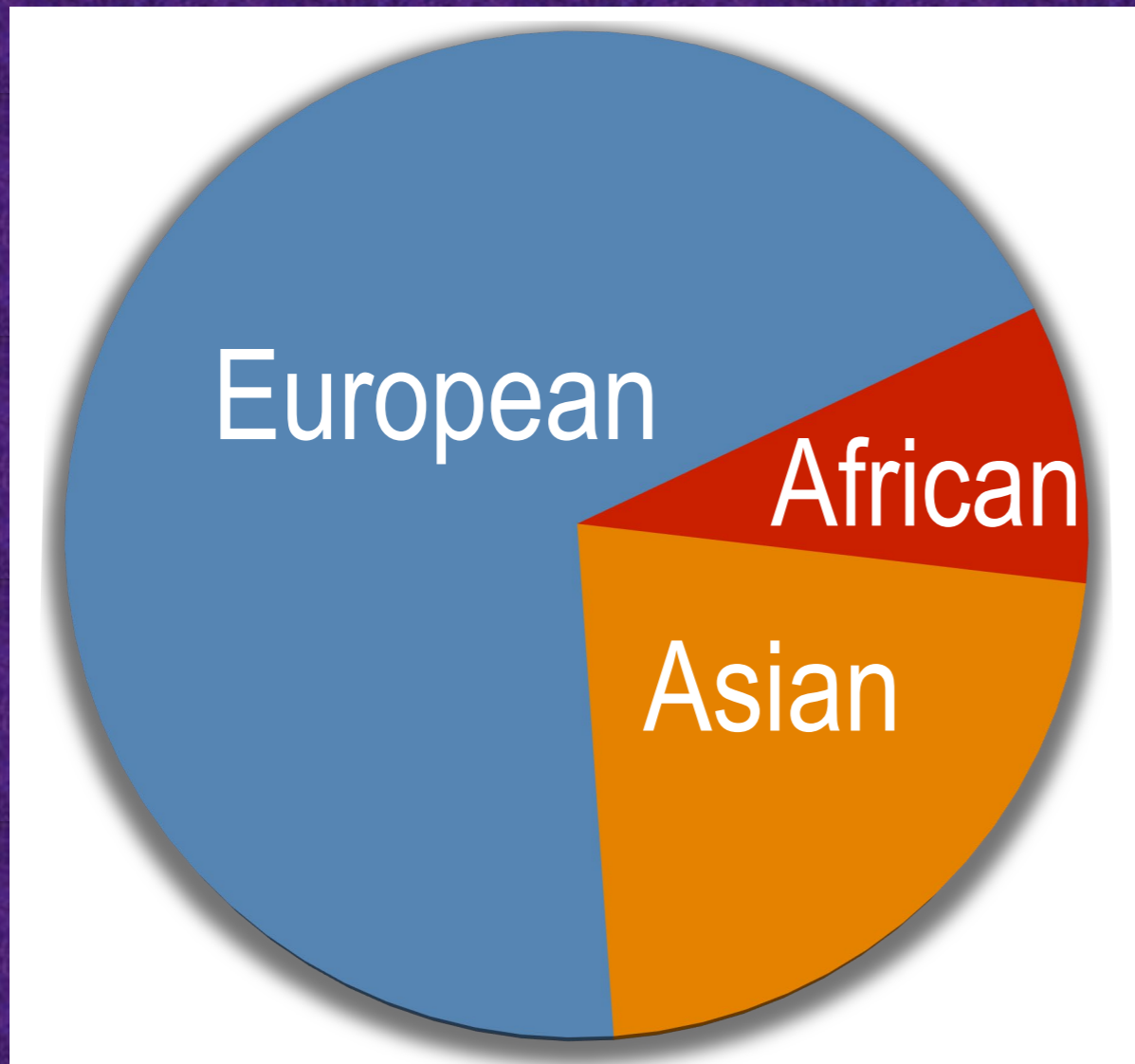
B



C

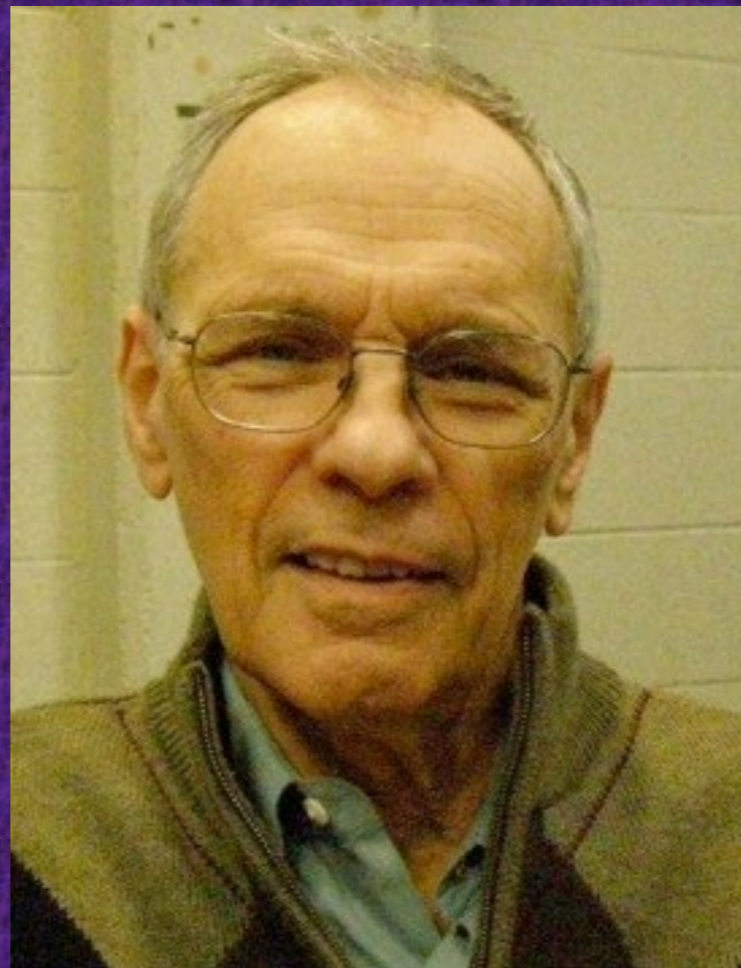


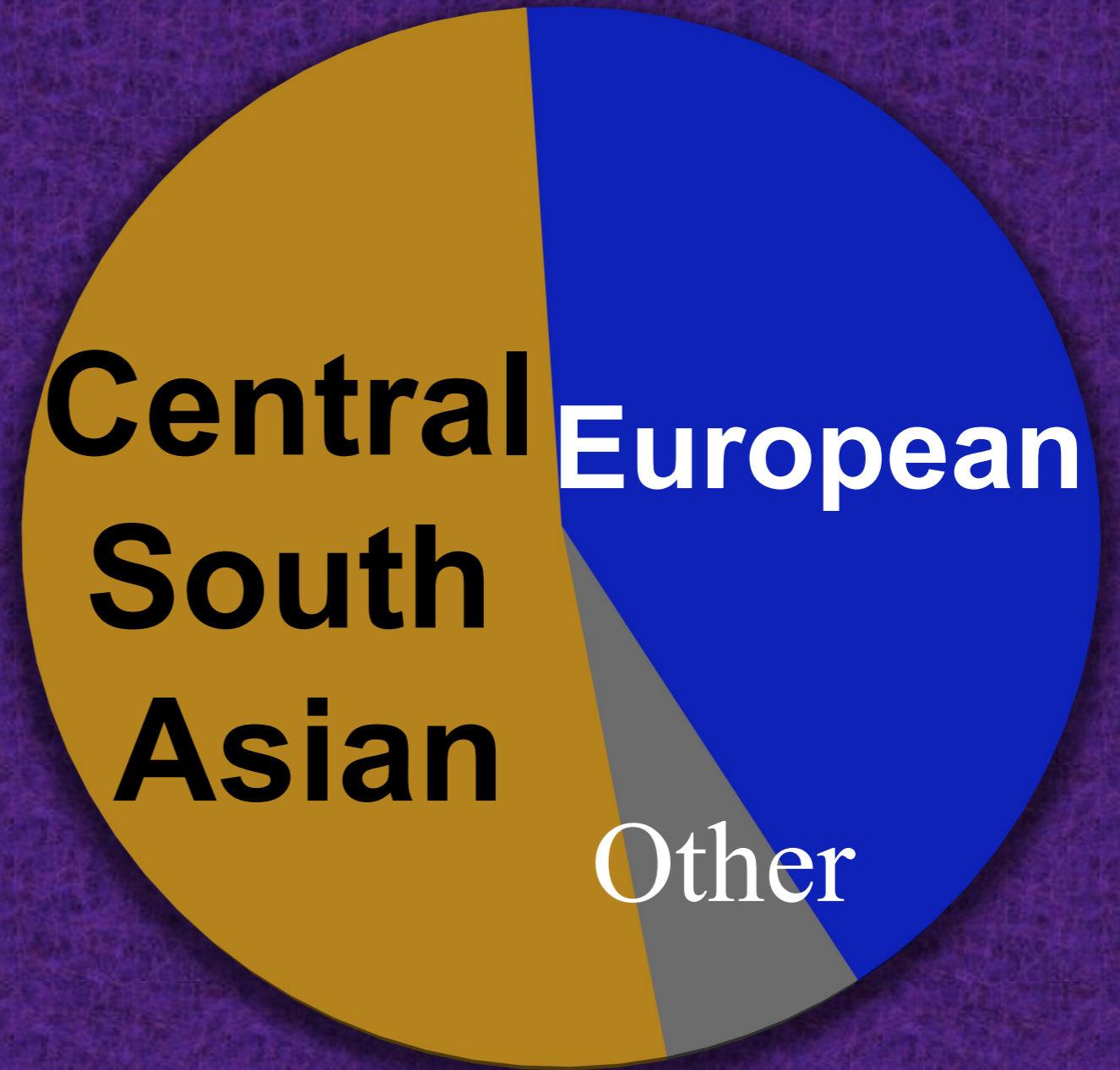
D

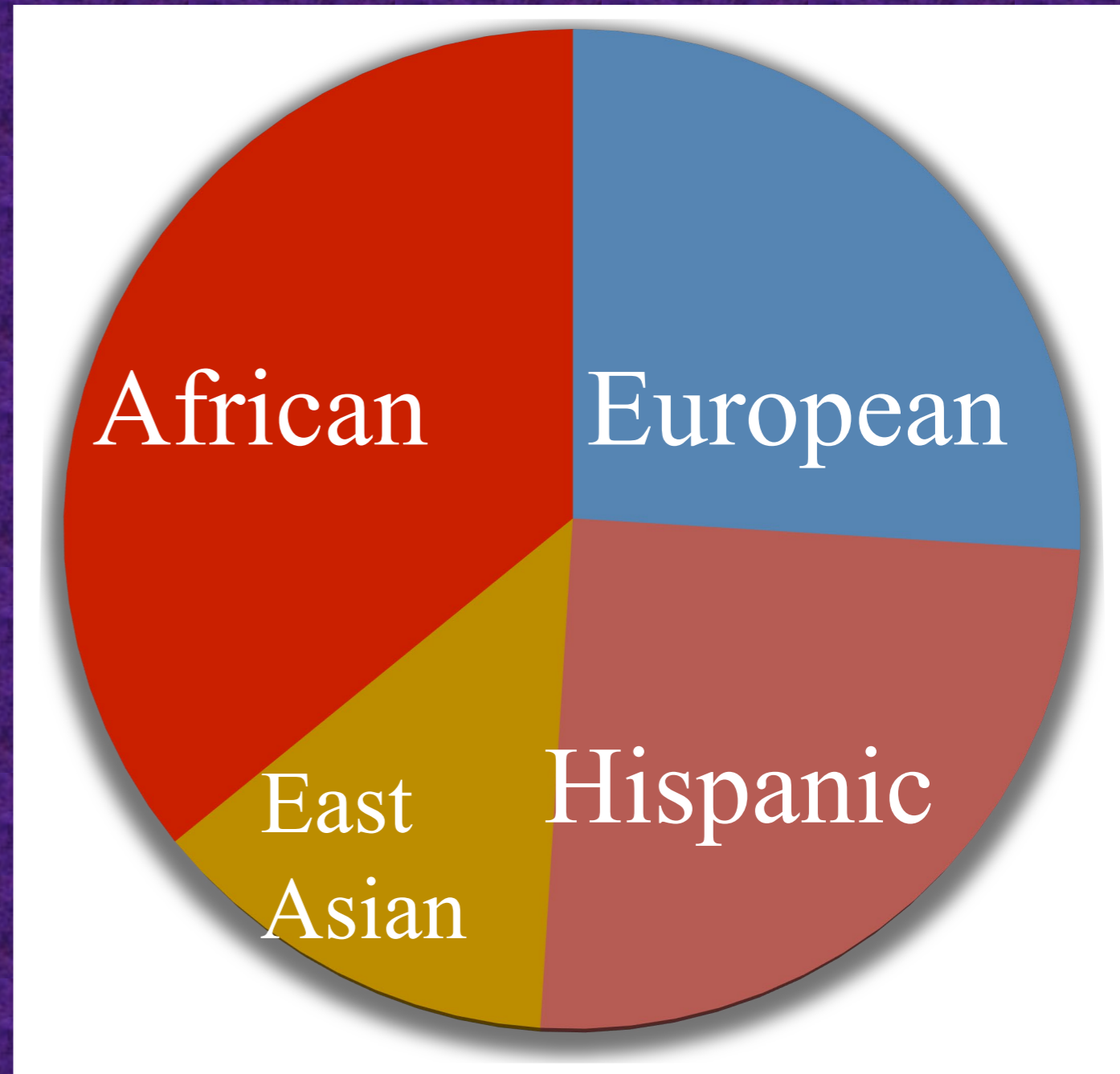


Who's
profile is
this?

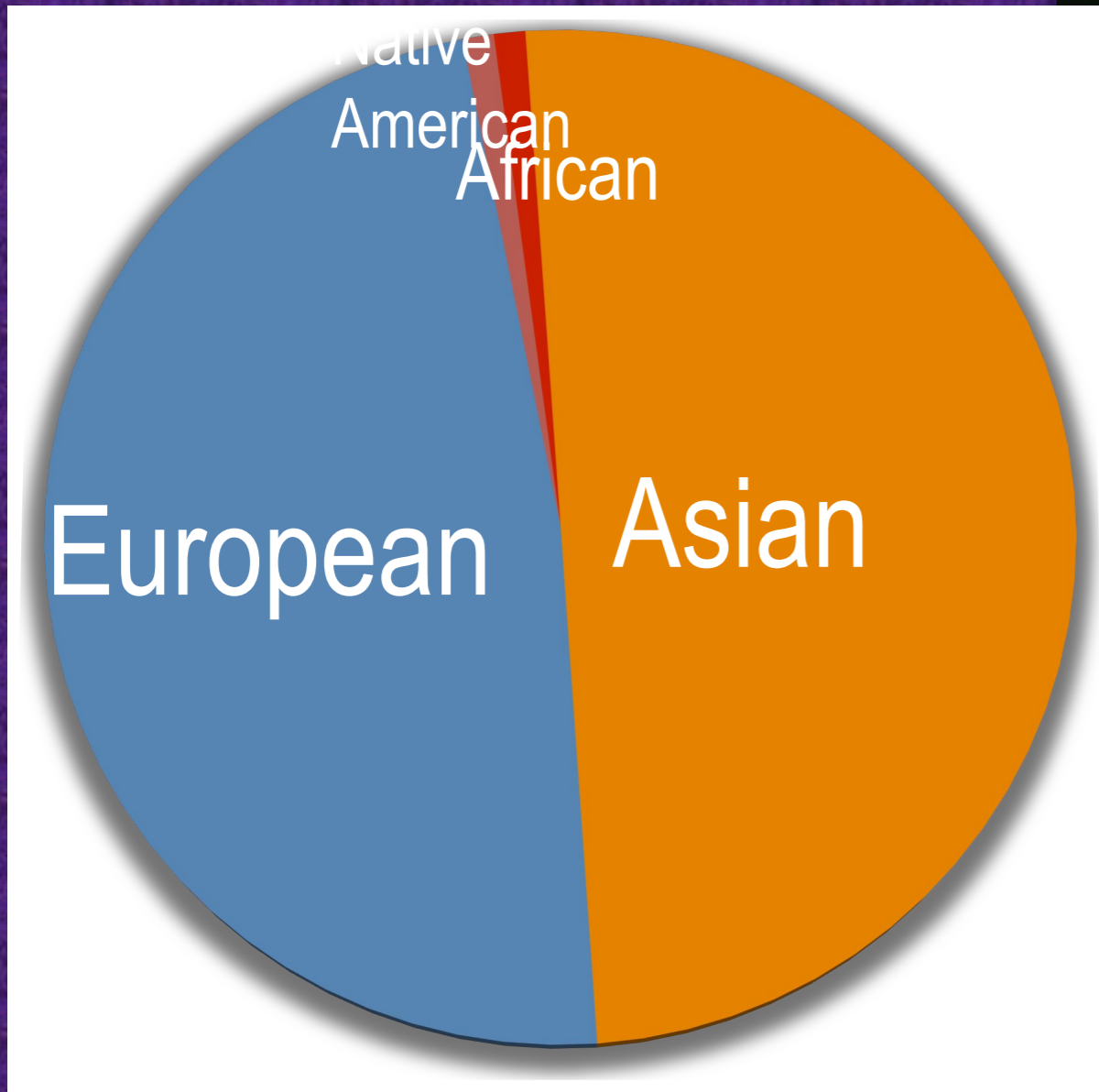
Which of these people has NO East Asian Ancestry?









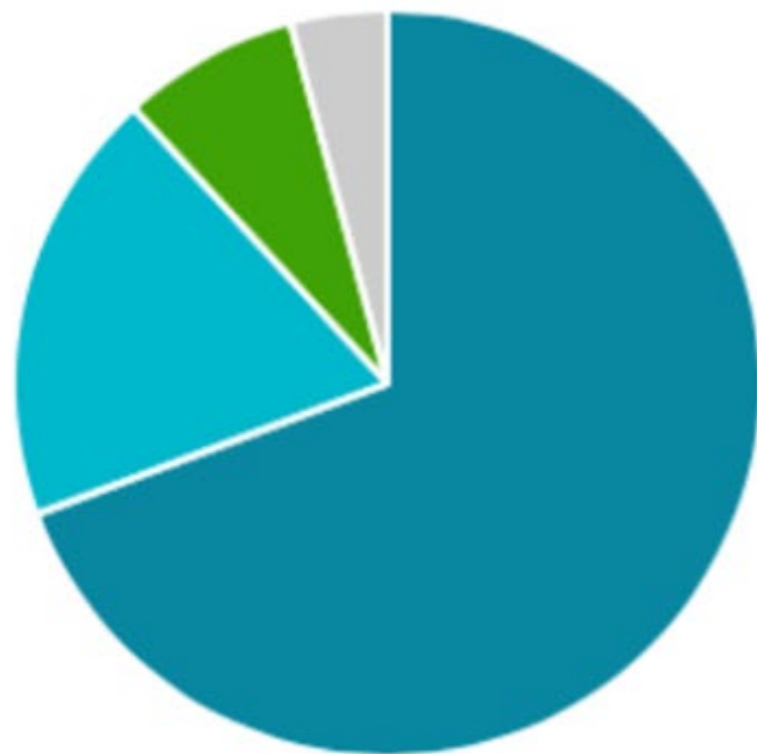




DNA
Discussion Project
Participant



ETHNICITY ESTIMATE



- 69% European Jewish
- 19% Scandinavia
- 8% Ireland
- 3 More regions



DNA
Discussion Project
Participant



ETHNICITY ESTIMATE



- 25% Cameroon/Congo
- 13% Italy/Greece
- 11% Senegal
- 15 More regions



DNA
Discussion Project
Participant



ETHNICITY ESTIMATE



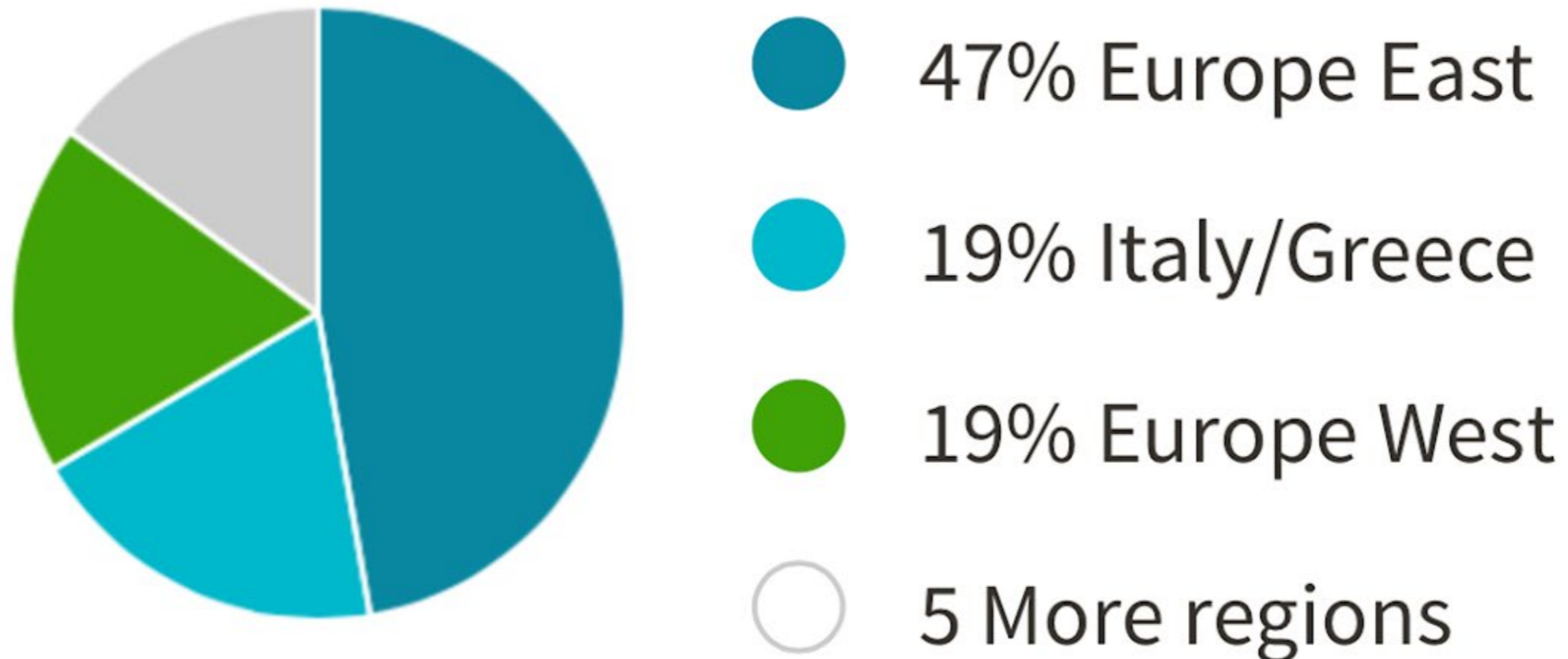
- 36% Iberian Peninsula
- 13% Italy/Greece
- 13% Native American
- 12 More regions

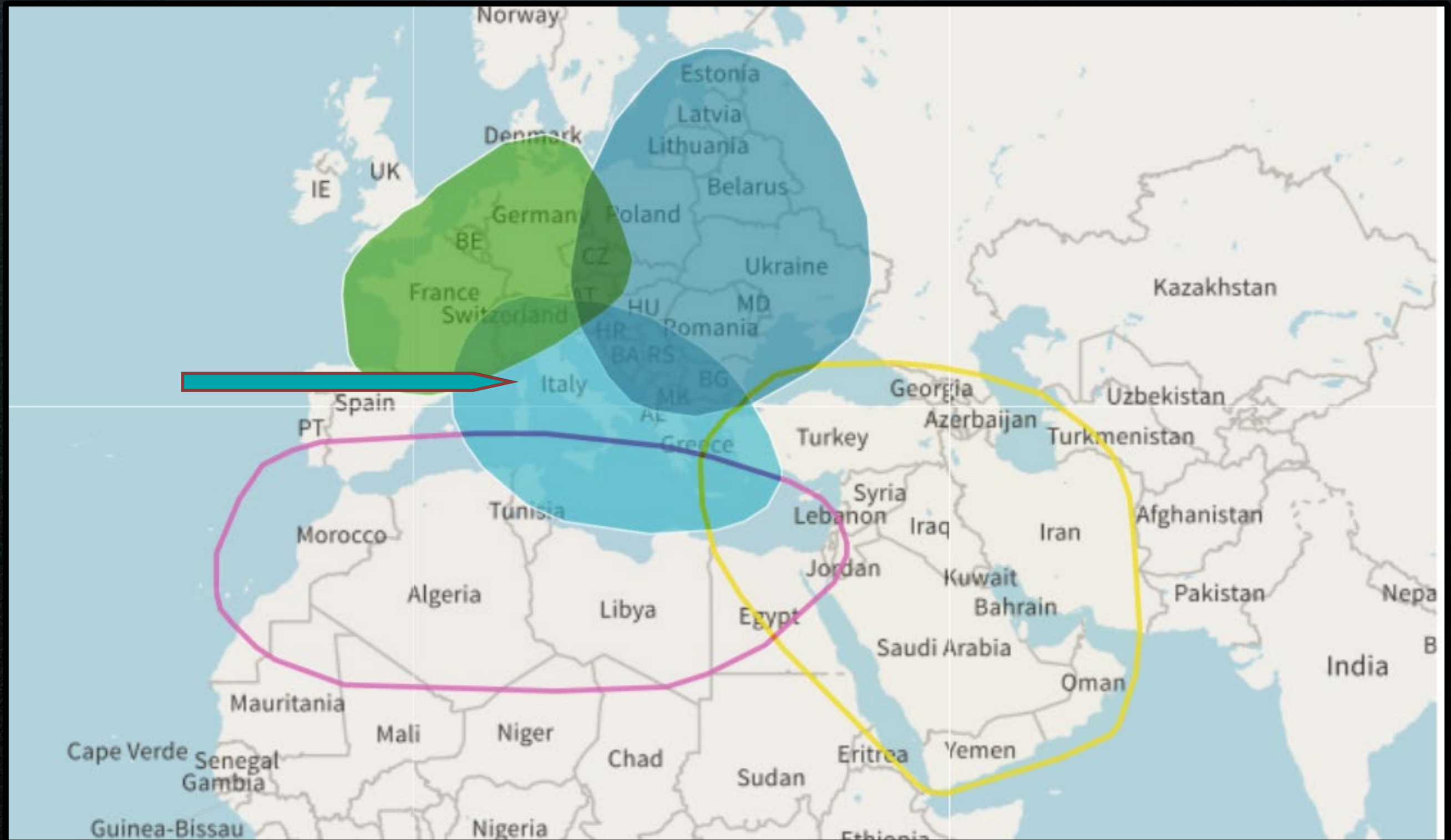


DNA
Discussion Project
Participant



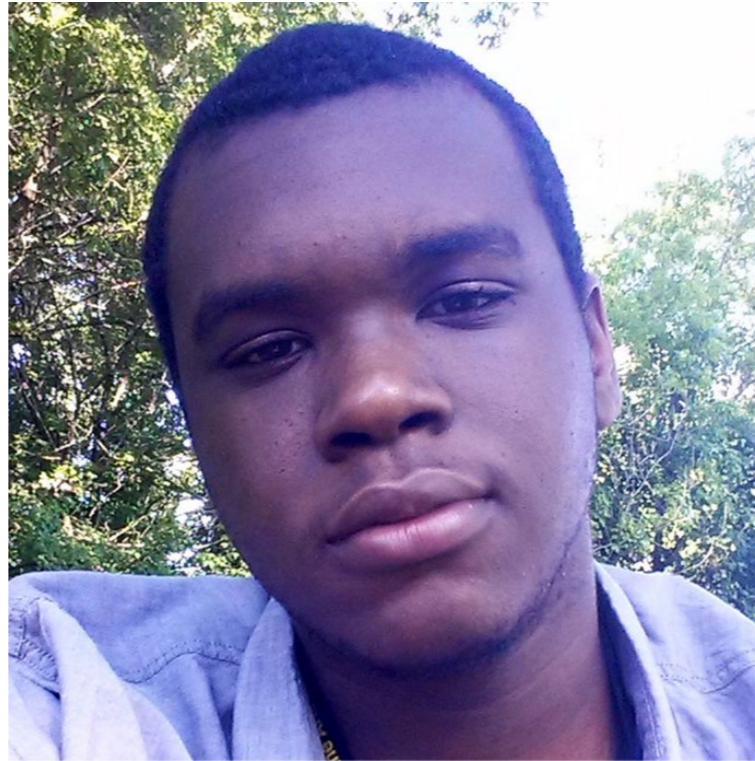
ETHNICITY ESTIMATE



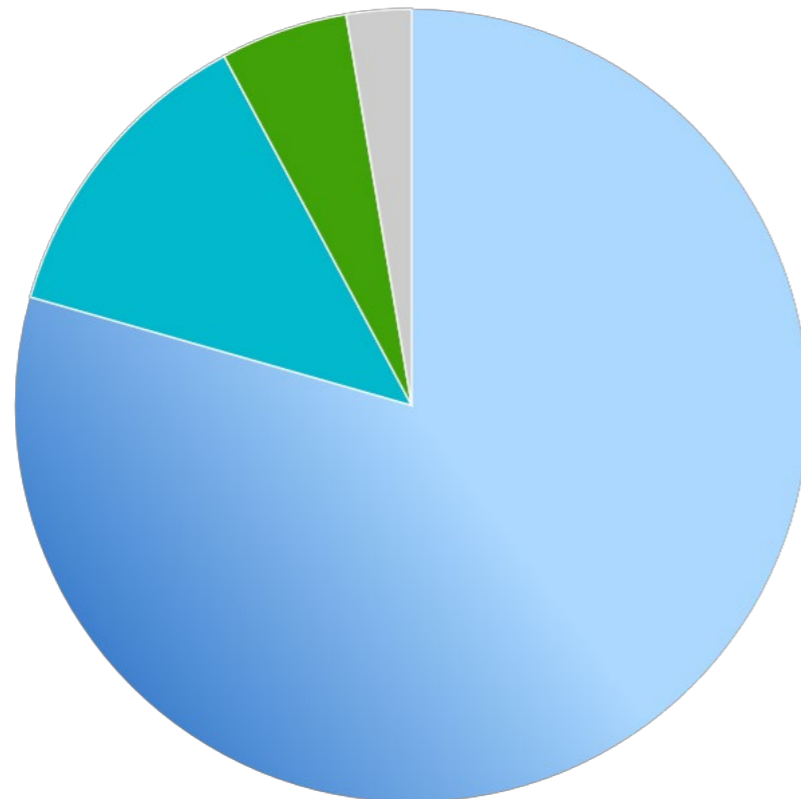




DNA
Discussion Project
Participant

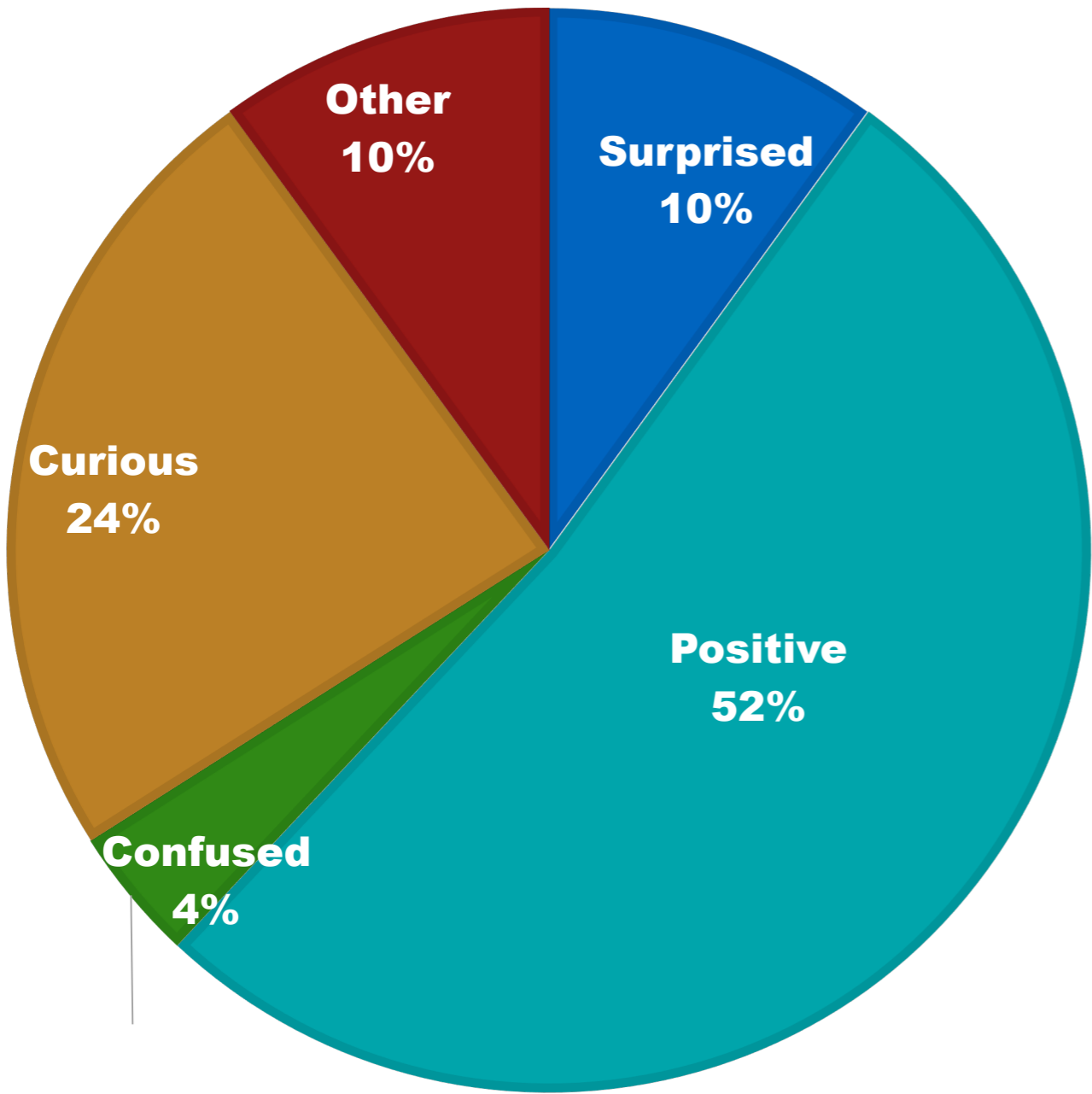


ETHNICITY ESTIMATE

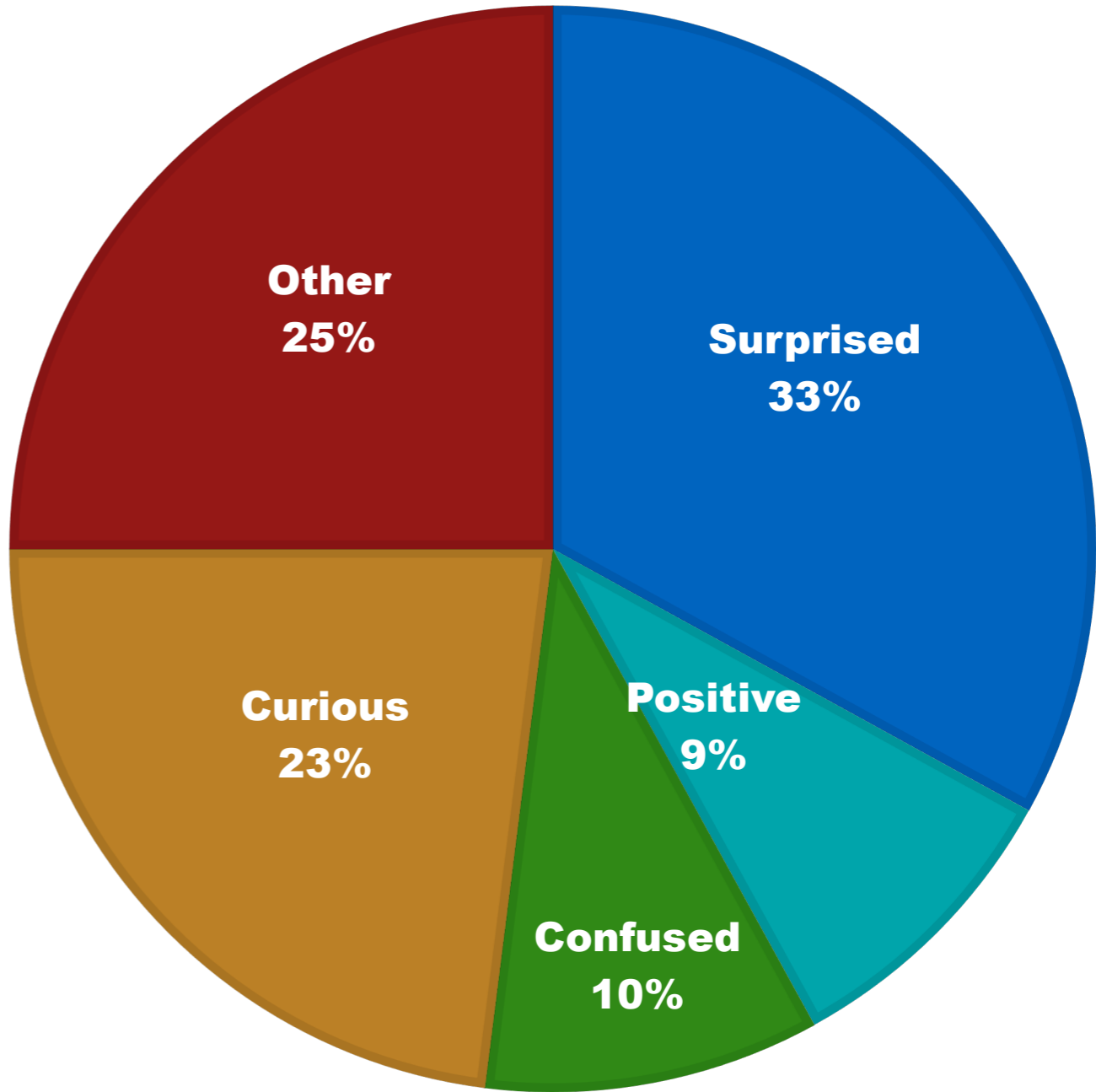


- 81% Africa Sub-Saharan
- 13% Asia
- 5% Europe
- Northwest
- 2 More regions

How will others react to your DNA profile?

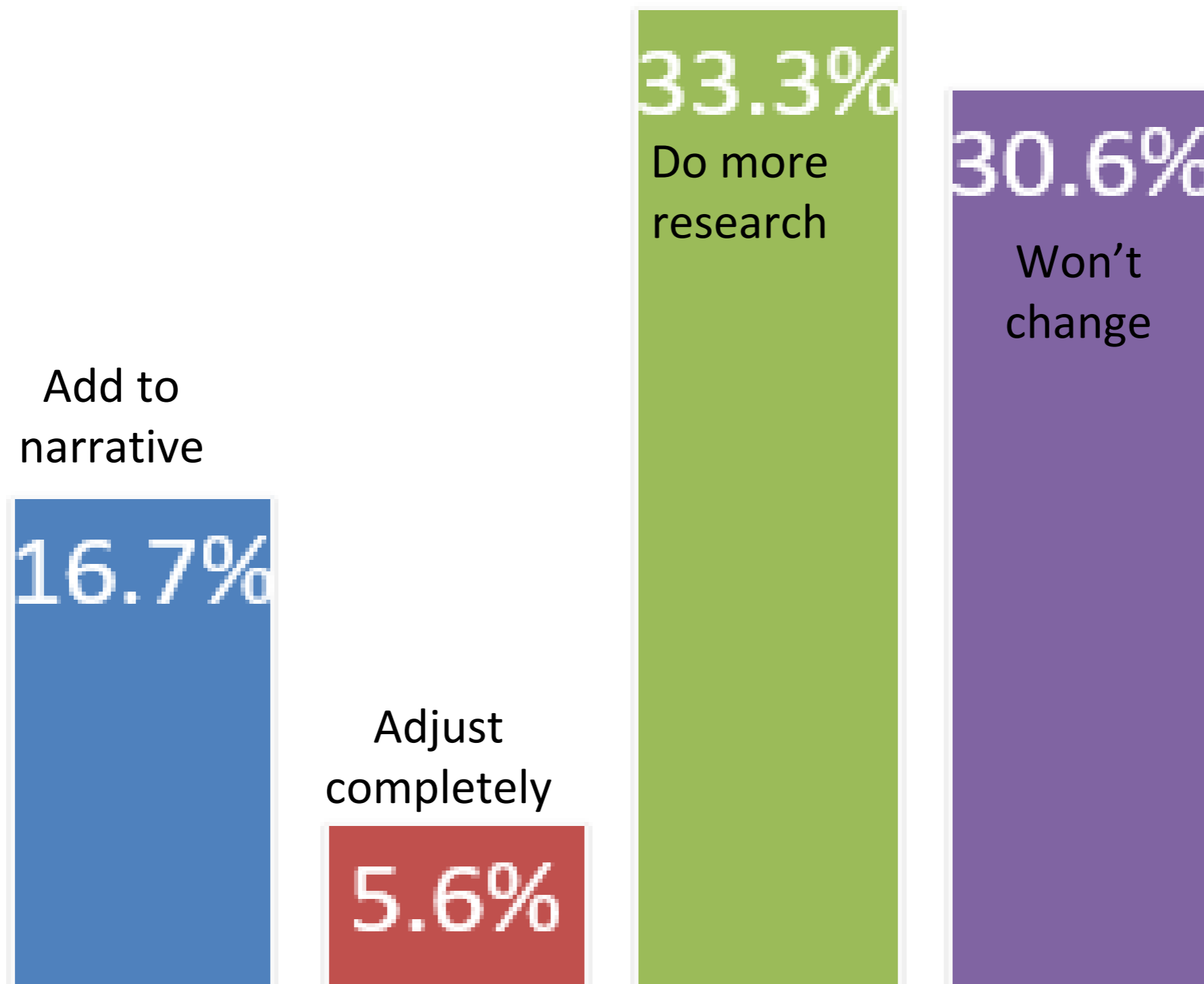


**Before
DNA Test**



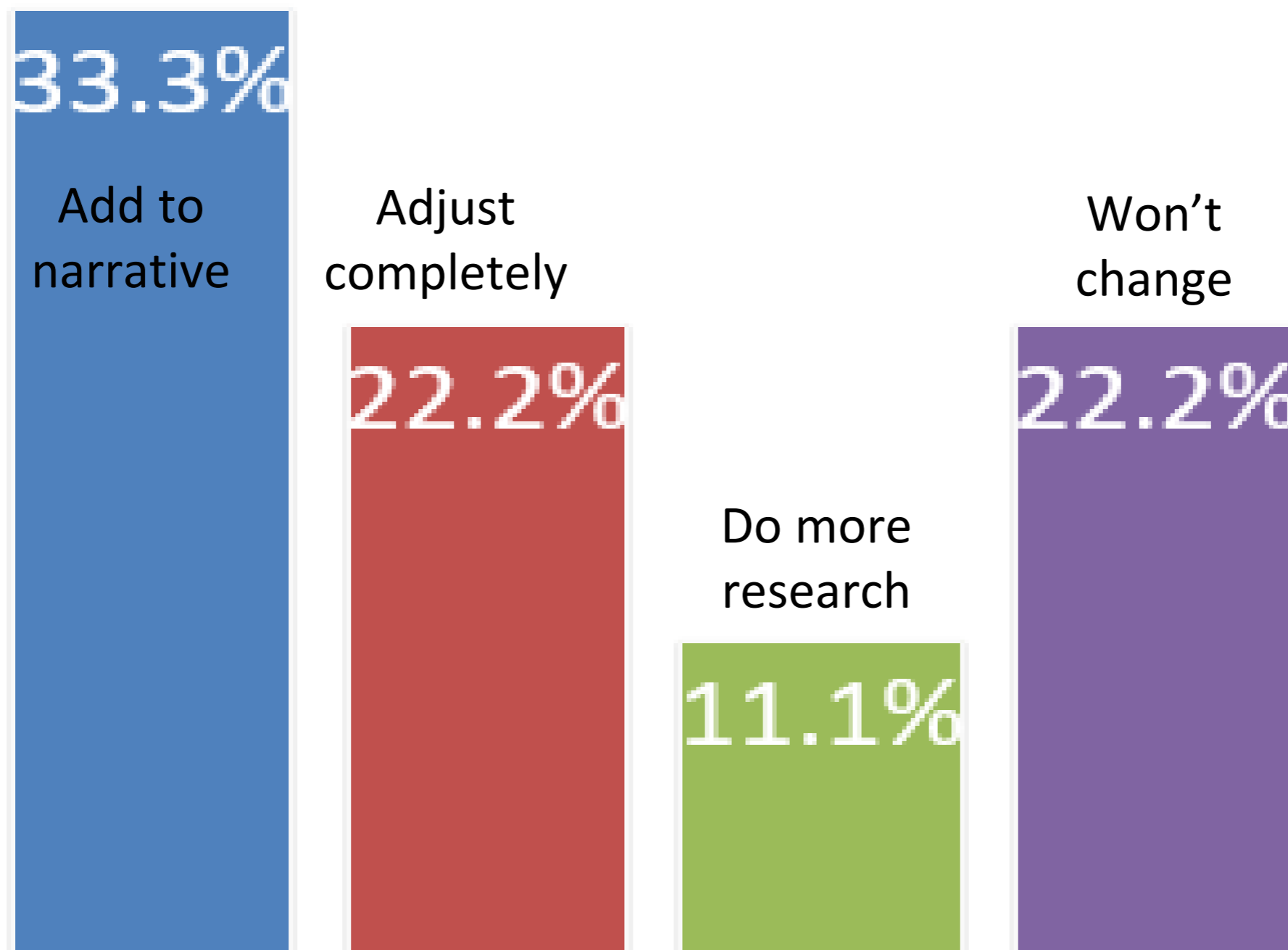
**After
DNA Test**

How will the DNA test change your family narrative?



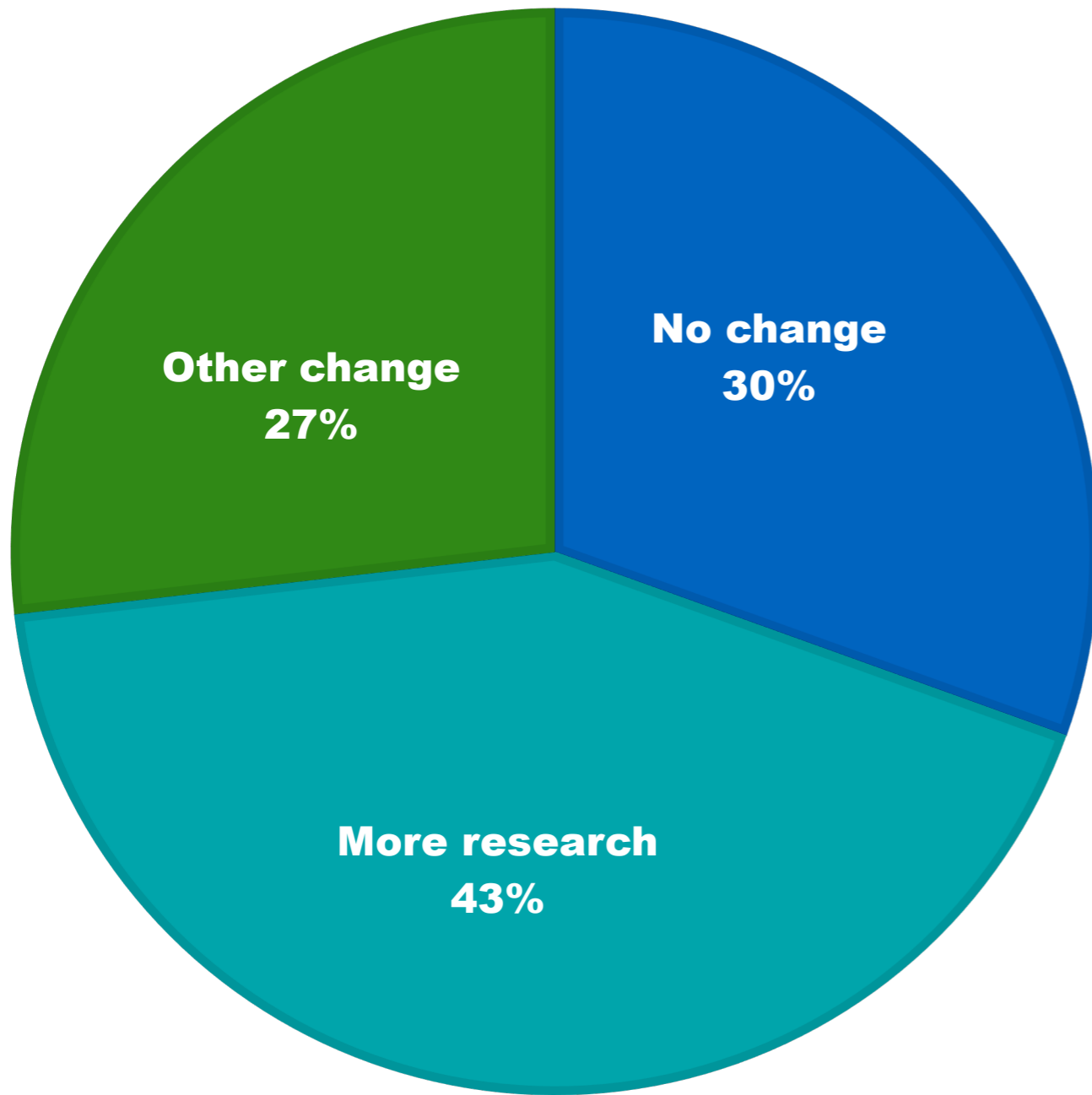
European

How will the DNA test change your family narrative?

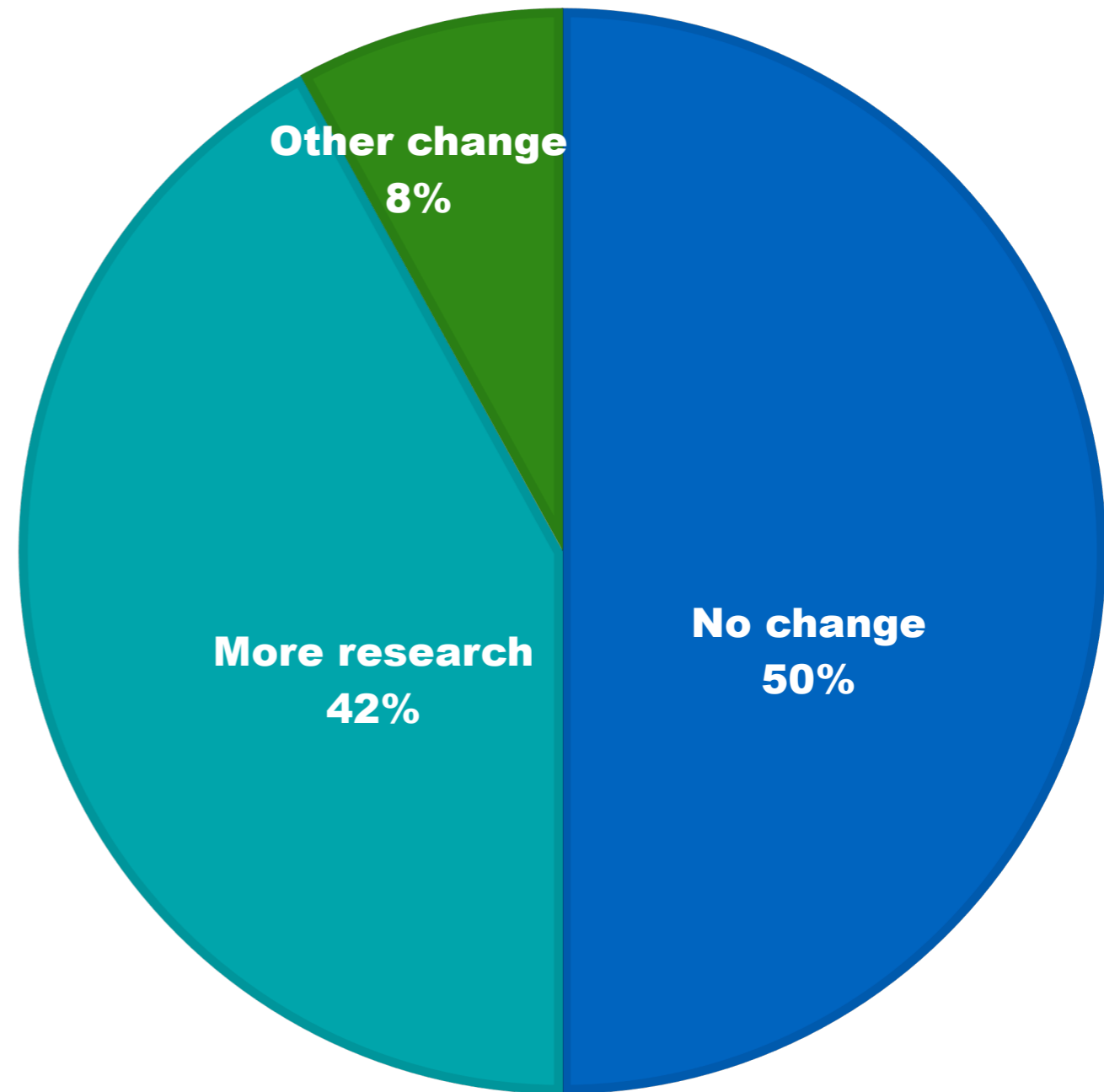


Non-European

How will the DNA test change your behavior?

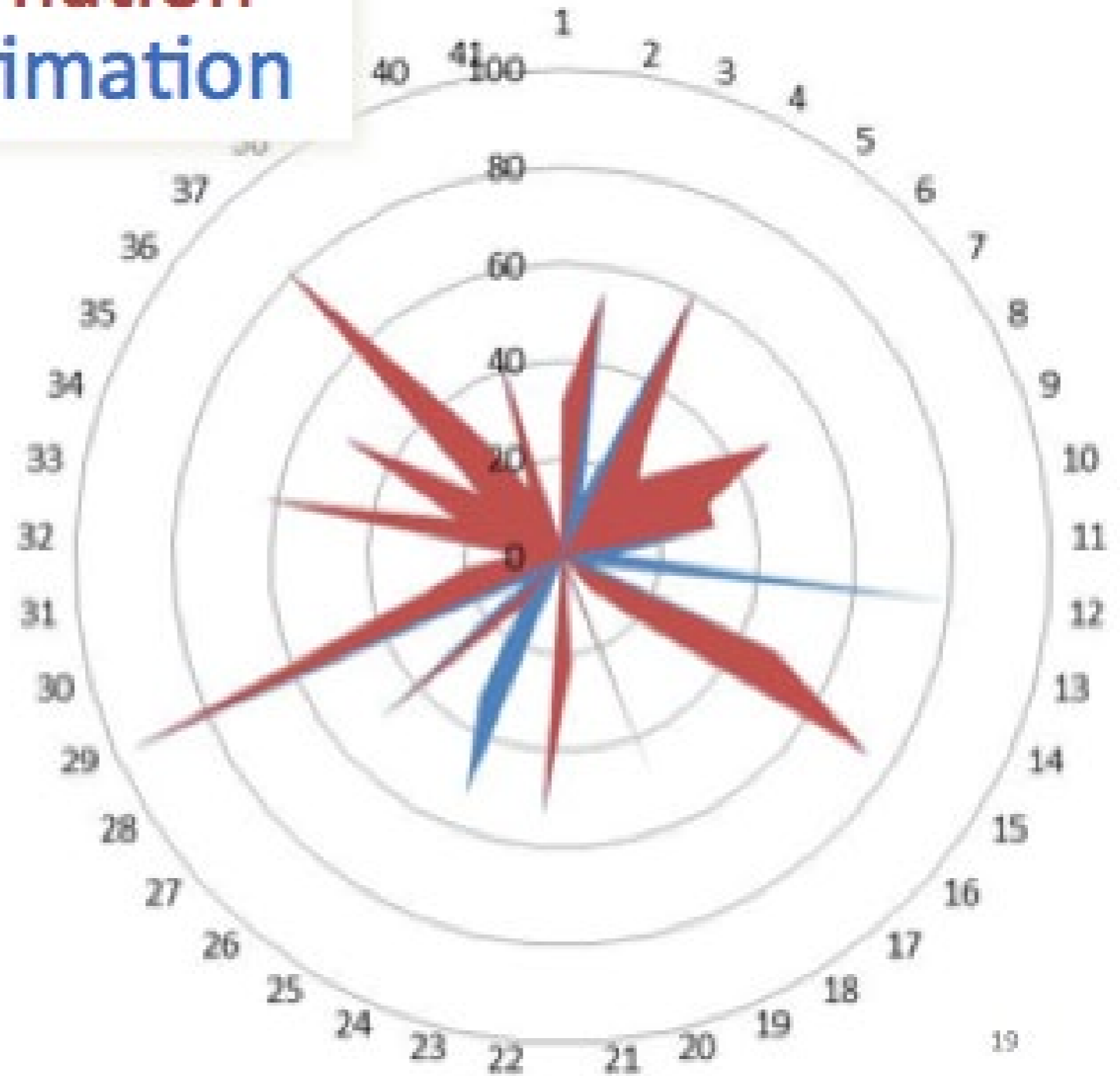


Female

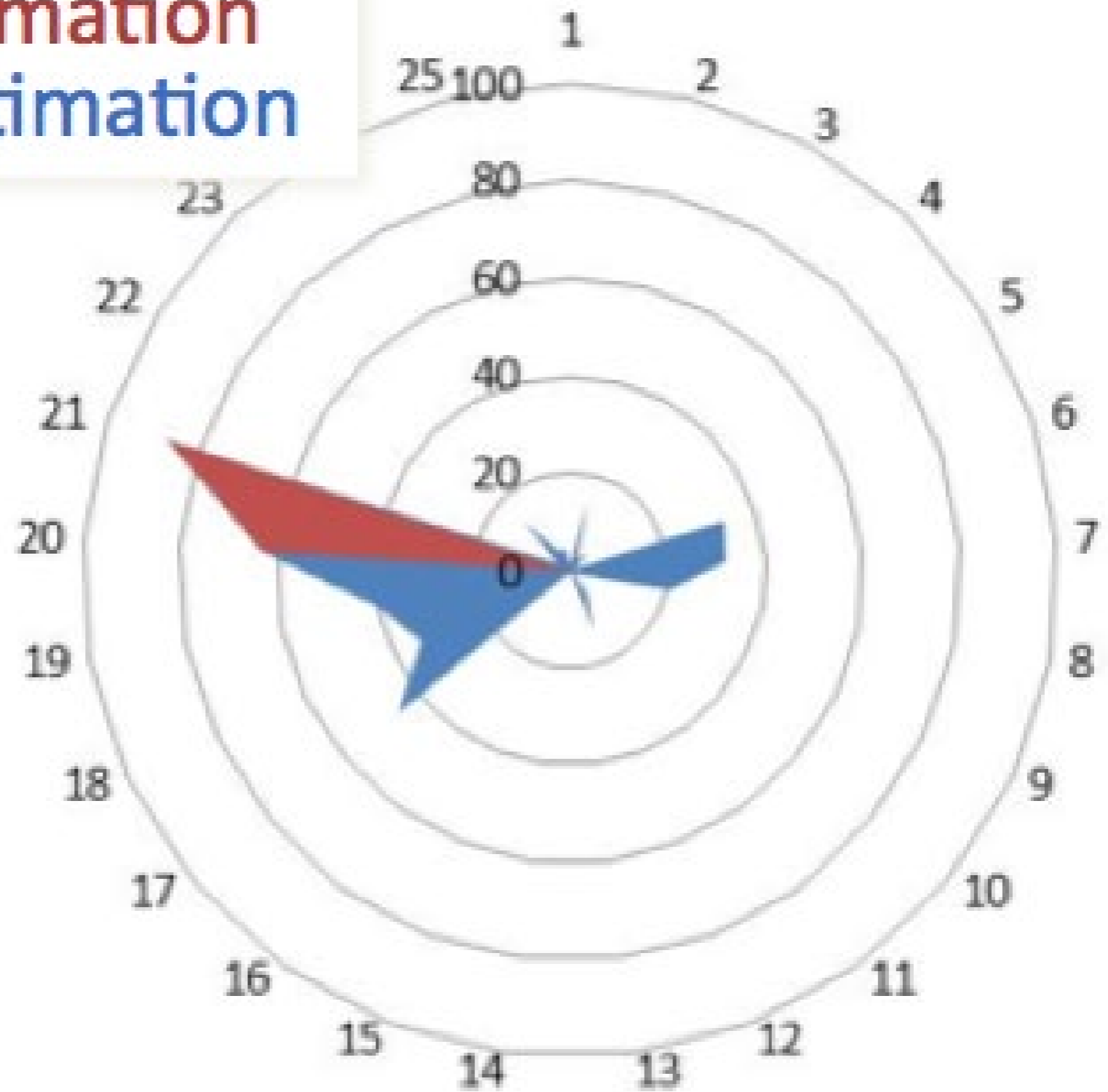


Male

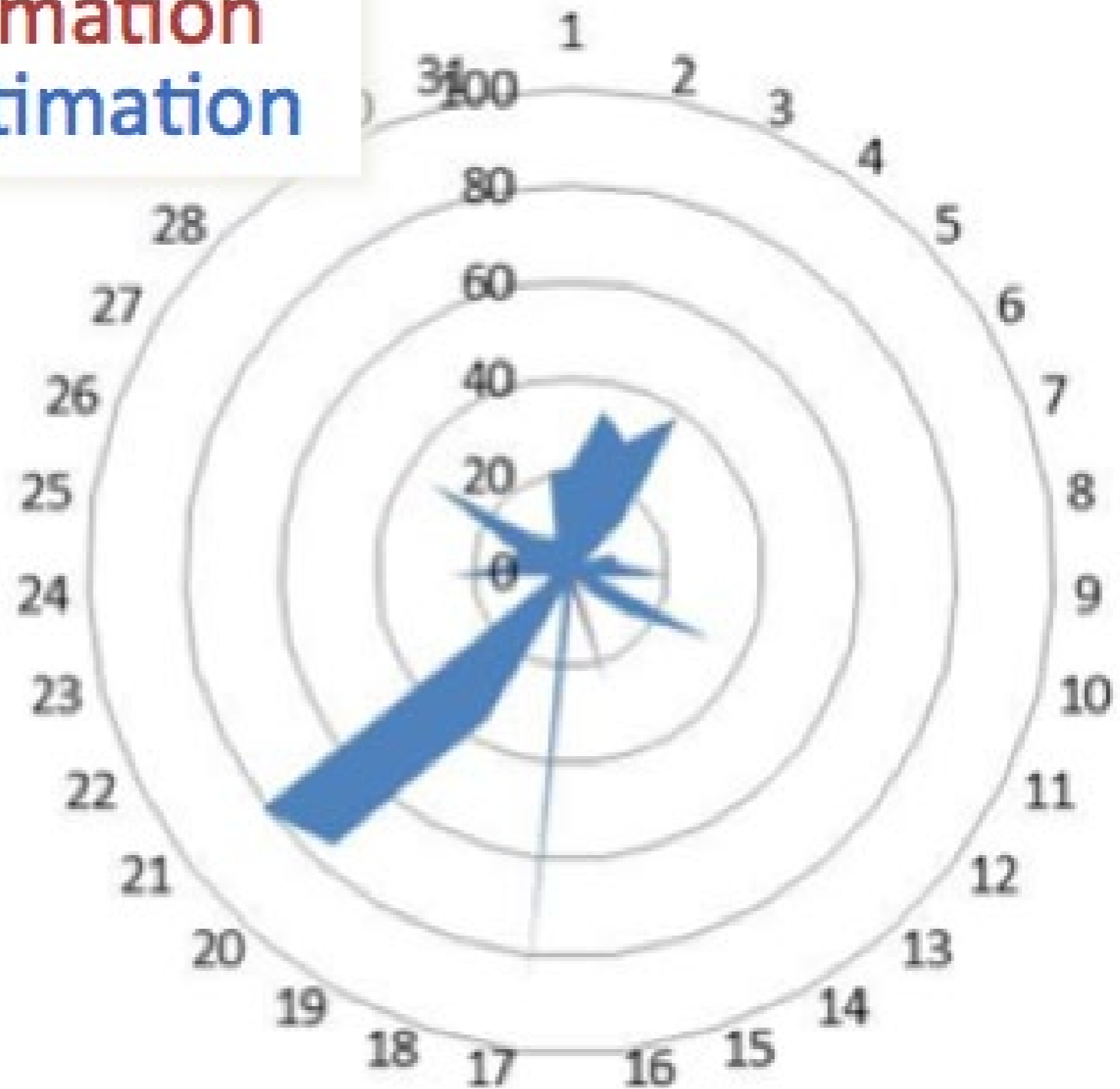
European Estimation
Red Overestimation
Blue Underestimation



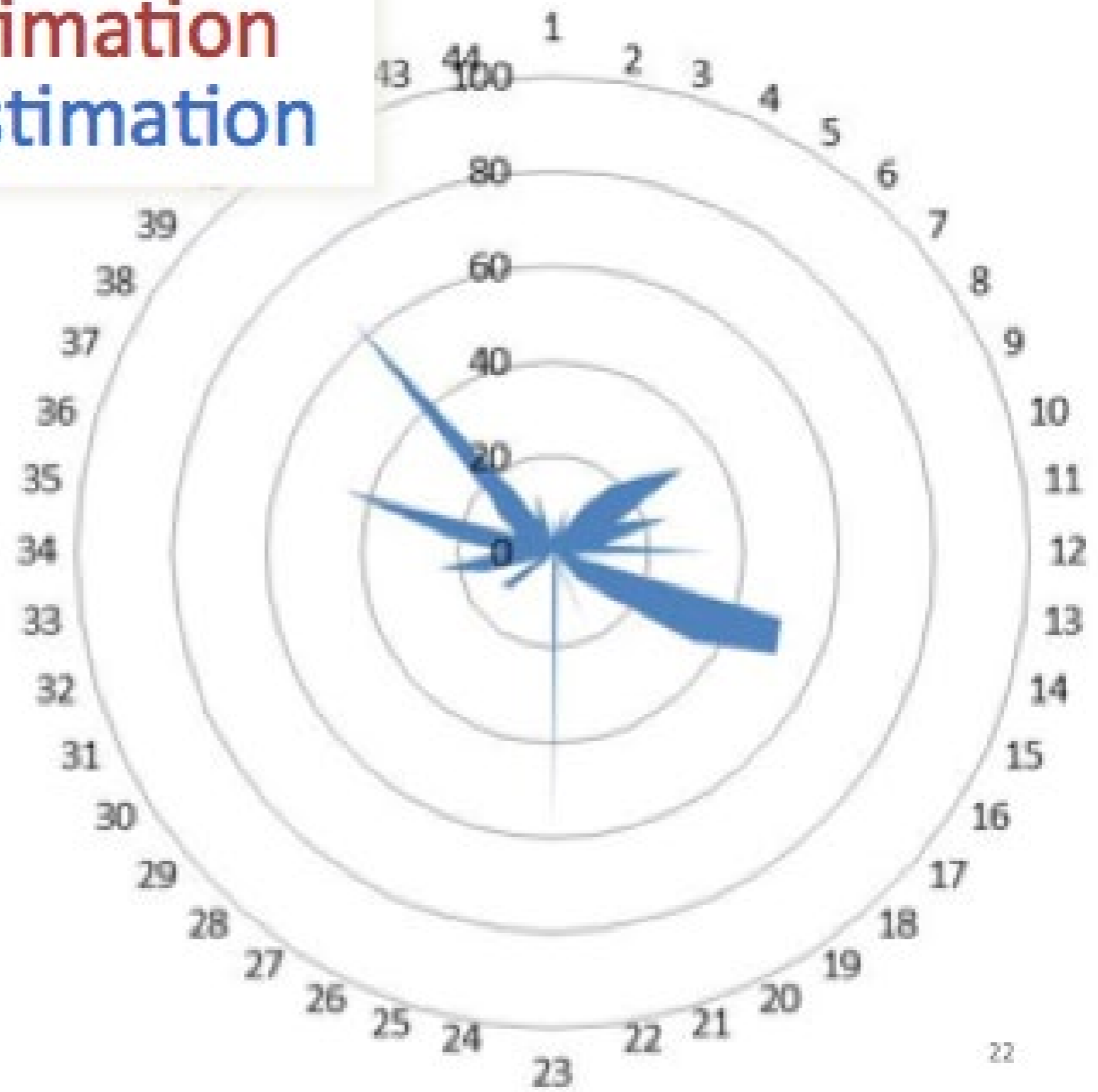
African Estimation
Red Overestimation
Blue Underestimation



Latino Estimation
Red Overestimation
Blue Underestimation



Asian Estimation
Red Overestimation
Blue Underestimation



““

**I am proud of
my heritage.**

*I don't believe these
results are mine!*

**The lab must have
made a mistake.**

””



CREATING A NEW RACIAL ORDER

HOW IMMIGRATION,
MULTIRACIALISM
GENOMICS, AND
THE YOUNG CAN
REMAKE RACE
IN AMERICA

JENNIFER J. ...

merican

Asian Indian
Chinese
Filipino
Some other race

H U M A N

→ NOTE: Please answer BOTH Question 8 and Question 9 about race. For this census, Hispanic or Latino is a race, not an ethnicity.

8. Is Person 1 of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican Am., Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish origin — Print origin, for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.

9. What is Person 1's race? Mark one or more boxes.

- White
- Black, African Am., or Negro
- American Indian or Alaska Native — Print name of enrolled or principal tribe.
- Asian Indian
- Chinese
- Filipino
- Other Asian — Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.
- Japanese
- Korean
- Vietnamese
- Native Hawaiian
- Guamanian or Chamorro
- Samoan
- Other Pacific Islander — Print race, for example, Fijian, Tongan, and so on.
- Some other race — Print race.

Person 2's race? Mark



In sum...

We are each totally unique.

We may need to be categorized sometimes.

But since we have made these categories
we can remake them for a better world.

What is *your* profile?

What is *your* story?



www.wcupa.edu/dnadiscussion