

Generations, historical change and cognitive operations – a collaborative project USA-Romania

Alin Gavreliuc

West University of Timișoara, Faculty of Sociology and Psychology, Department of Psychology

April 2023

Team / Pre-registration / Published study

TEAM:

- *Alin Gavreliuc, West University Timisoara, Romania*
- *Raluca Furdui, West University Timisoara, Romania*
- *Amalia Ionescu, University of California, Los Angeles, USA*
- *Patricia Greenfield, University of California, Los Angeles, USA; Harvard University, Cambridge, USA*
- *Michael Weinstock, Ben Gurion University of the Negev, Israel*

PRE-REGISTRATION in a public repository: OSF (*Open Science Framework*)

<https://osf.io/mjze3/>

PUBLISHED STUDY (in an *Open Access Journal* – area: *Multidisciplinary Sciences*)

Ionescu, A., Furdui, R., Gavreliuc, A., Greenfield, P., & Weinstock, M. (2023). The effects of sociocultural changes on epistemic thinking across three generations in Romania. *PLoS ONE*, 18(3), e0281785

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0281785>

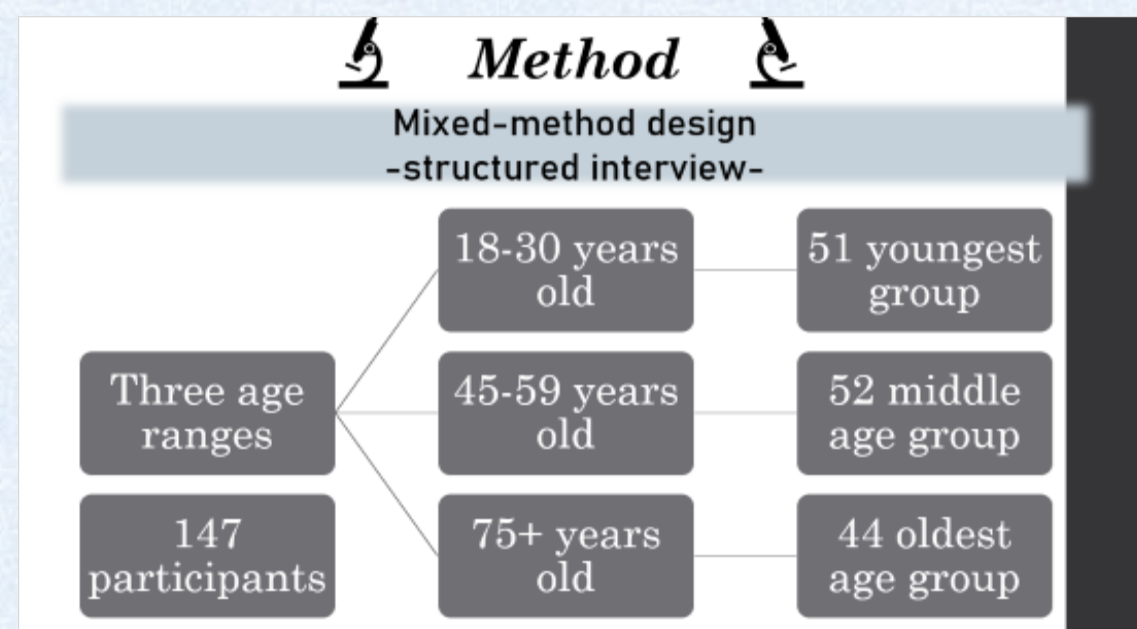
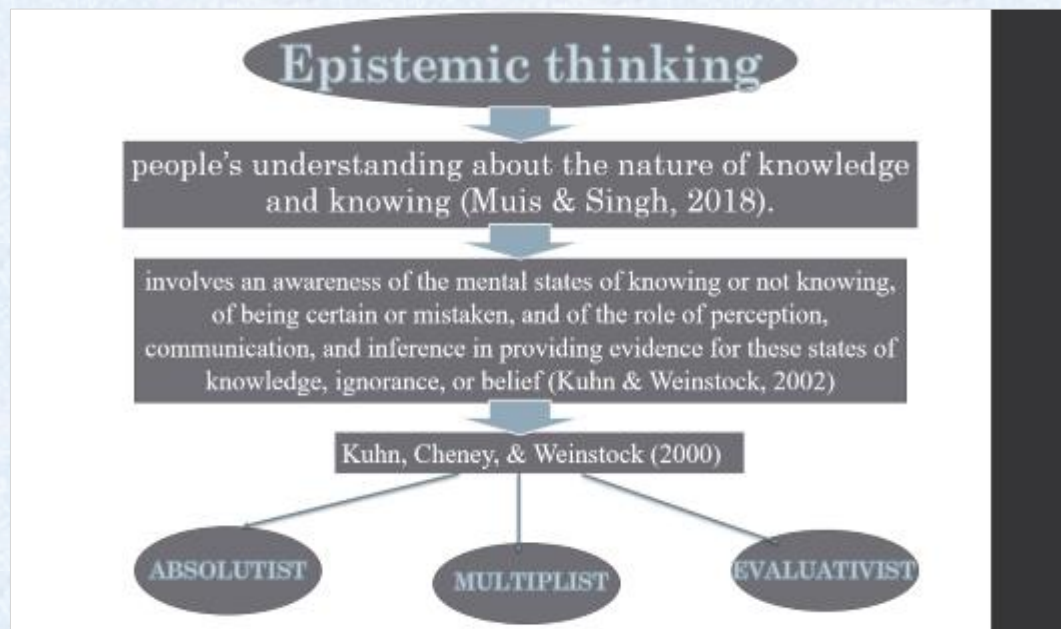


Table 1

Intercorrelations of Independent and Dependent Variables

	Independent variables				Dependent variables		
	Cohort	Education	Social media Use	Travel outside Romania (y/n)	Absolutist responses	Multiplist responses	Evaluativist responses
Cohort	1	-.620**	-.788**	-.180*	.317**	-.097	-.320**
Education		1	.606**	.208*	-.192*	.028	.233**
Soc. media. use			1	.247**	-.316**	.112	.292**
Travel outside Romania				1	-.084	.087	-.001
Absolutist responses					1	-.739	-.379**
Multiplist responses						1	-.339**
Evaluativist responses							1

Note. N = 147 for all correlations. * $p < .05$; ** $p < .01$.

- ❖ Absolutist thinking was less frequent and evaluativist thinking more frequent the earlier in life a cohort was exposed to the postcommunist Romanian environment;
- ❖ Our sociodemographic analysis indicated that, as predicted, younger cohorts experienced greater exposure to education, social media, and international travel;
- ❖ Although the experience of international travel increased across the generations, its presence or absence was not a significant influence on mode of epistemic thinking;

Epistemic thinking

```
graph TD; A([Epistemic thinking]) --> B[people's understanding about the nature of knowledge and knowing (Muis & Singh, 2018).]; B --> C[involves an awareness of the mental states of knowing or not knowing, of being certain or mistaken, and of the role of perception, communication, and inference in providing evidence for these states of knowledge, ignorance, or belief (Kuhn & Weinstock, 2002)]; C --> D[Kuhn, Cheney, & Weinstock (2000)]; D --> E([ABSOLUTIST]); D --> F([MULTIPLIST]); D --> G([EVALUATIVIST]);
```

people's understanding about the nature of knowledge and knowing (Muis & Singh, 2018).

involves an awareness of the mental states of knowing or not knowing, of being certain or mistaken, and of the role of perception, communication, and inference in providing evidence for these states of knowledge, ignorance, or belief (Kuhn & Weinstock, 2002)

Kuhn, Cheney, & Weinstock (2000)

ABSOLUTIST

MULTIPLIST

EVALUATIVIST

Cultural differences on epistemological understanding

Karabenick and Moosa (2005) found that Omani college students were more likely to view scientific knowledge as certain and accept authority as the source of truth than U.S. college students

Comparing Bedouin and Jewish adolescents in Israel, the Bedouins were more absolutist in their thinking, even in domains of taste and aesthetics, than the Jewish adolescents who leaned more toward multiplist and evaluativist thinking (Weinstock, 2010)

Weinstock (2015) examined three generations in a rural Arab village in Israel. Each generation from grandmother to mother to adolescent girl became less absolutist in their thinking than the generation before them.

Romania before and after 1989

HOMOGENEOUS

1. Limited exposure to technology, literature;
2. Citizens were not allowed to travel outside of the country

Absolutist thinking

1. Most fundamental social attitudes more stable than changed for generational cohorts from 1920-1939 year of born until 2000+ year of born (Voicu, 2020)
2. There were not any significant axiological differences in terms of values orientation between „parents”, „intermediate cohort” and „young people” (Gavreliuc & Gavreliuc, 2018)

Questions

- Can sudden sociocultural changes affect epistemic thinking?
- Theory of social change, cultural evolution and human developement (Greenfield, 2009)

We were forecasting...

1a. Younger cohorts would experience greater exposure to education, technology, and international travel than older cohorts.

1b. Level of education, social media use, and international travel would be intercorrelated with each other.

2. As new generations experience greater access to education, technology, and the world, there will be a shift from absolutist thinking to multiplist and evaluativist thinking.

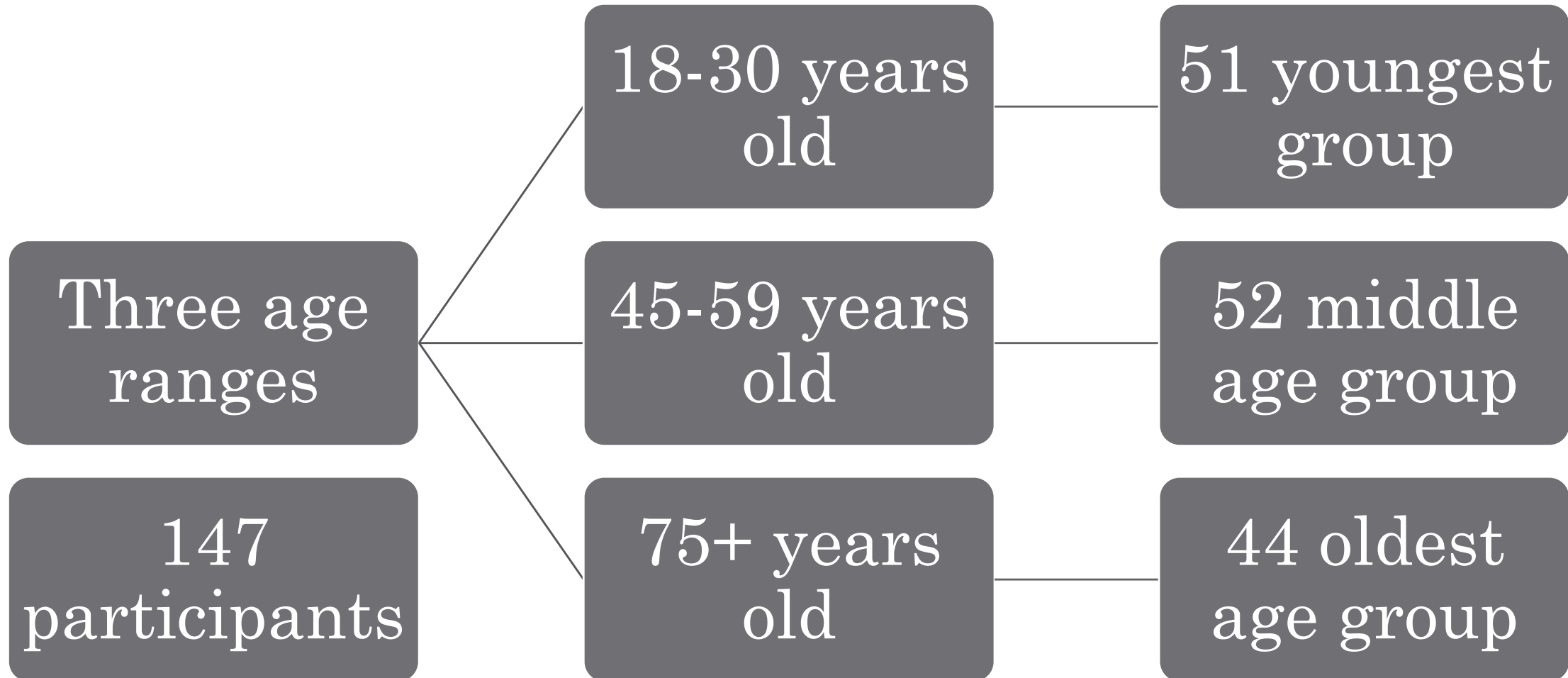
3. Higher levels of education, international travel, and general exposure to different opinions through social media would be associated with more multiplist and evaluativist responses to the epistemic dilemmas.



Method



Mixed-method design
-structured interview-



Evaluation of epistemic thinking -dilemmas	Sociodemographic questions	Questions regarding social change						
<ul style="list-style-type: none">Kuhn, Cheney & Weinstock (2000)E.g: Alex says warm summer days are nicest. Luke says cool autumn days are nicest.	<p>Do you use social media? <u>Yes / No</u></p> <p>If yes: How frequently? <i>Rarely (0-2 times per week)</i> <i>Frequently (3-6 times per week)</i> <i>Daily</i></p> <p>These questions yielded a four-point scale: 0: no social media, 1: rarely use, 2: frequently use, 3: daily use</p>	<p><i>How have sources of information changed before/after 1989? (OR “How have sources of information changed throughout your lifetime?” for the youngest age group)</i></p> <p><i>(only for middle and youngest generation) Do you see differences between your generation and older generations in terms of opinions (both types of opinions and volume of opinions)?</i></p> <p><i>(only for middle and oldest generation): What was the biggest change that you experienced since the fall of communism?</i></p>						
<table><tr><td>answers which indicated certainty about one side being right and the other not at all, were conventionally qualified as "absolutist".</td><td>e.g: Sebastian is right because I hate lying. (82-years-old participant)</td></tr><tr><td>answers that suggested that correct judgment belonged to both characters were coded as "multiplist" if the arguments supported the subjectivity of opinions</td><td>e.g: They can both be right, it depends ... and never now when the lie is told. (44-years-old-participant)</td></tr><tr><td>in the situation where the participants emphasized the graduality of the truth, yet determined that one of the characters was more right than the other depending on several factors (e.g., scientific support, context), the answer was conventionally considered as an "evaluativist".</td><td>e.g: They can both be right. Yes, again, one might be more right than the other, but all depends on the book they have, how scientifically accurate it is. (20-years-old-participant)</td></tr></table>	answers which indicated certainty about one side being right and the other not at all, were conventionally qualified as "absolutist".	e.g: Sebastian is right because I hate lying. (82-years-old participant)	answers that suggested that correct judgment belonged to both characters were coded as "multiplist" if the arguments supported the subjectivity of opinions	e.g: They can both be right, it depends ... and never now when the lie is told. (44-years-old-participant)	in the situation where the participants emphasized the graduality of the truth, yet determined that one of the characters was more right than the other depending on several factors (e.g., scientific support, context), the answer was conventionally considered as an "evaluativist".	e.g: They can both be right. Yes, again, one might be more right than the other, but all depends on the book they have, how scientifically accurate it is. (20-years-old-participant)	Analyses...	
answers which indicated certainty about one side being right and the other not at all, were conventionally qualified as "absolutist".	e.g: Sebastian is right because I hate lying. (82-years-old participant)							
answers that suggested that correct judgment belonged to both characters were coded as "multiplist" if the arguments supported the subjectivity of opinions	e.g: They can both be right, it depends ... and never now when the lie is told. (44-years-old-participant)							
in the situation where the participants emphasized the graduality of the truth, yet determined that one of the characters was more right than the other depending on several factors (e.g., scientific support, context), the answer was conventionally considered as an "evaluativist".	e.g: They can both be right. Yes, again, one might be more right than the other, but all depends on the book they have, how scientifically accurate it is. (20-years-old-participant)							

answers which indicated certainty about one side being right and the other not at all, were conventionally qualified as "absolutist".

e.g: Sebastian is right because I hate lying. (82-years-old participant)

answers that suggested that correct judgment belonged to both characters were coded as "multiplist" if the arguments supported the subjectivity of opinions

e.g: They can both be right, it depends ... and how and when the lie is told. (44-years-old-participant)

in the situation where the participants emphasized the graduality of the truth, yet determined that one of the characters was more right than the other depending on several factors (e.g., scientific support, context), the answer was conventionally considered as an "evaluativist".

e.g: They can both be right. Yes, again, one might be more right than the other, but all depends on the book they have, how scientifically accurate it is. (20-years-old-participant)

Table 1

Intercorrelations of Independent and Dependent Variables

	Independent variables				Dependent variables		
	Cohort	Education	Social media Use	Travel outside Romania (y/n)	Absolutist responses	Multiplist responses	Evaluativist responses
Cohort	1	-.620**	-.788**	-.180*	.317**	-.097	-.320*
Education.		1	.606**	.208*	-.192*	.028	.233*
Soc. media. use			1	.247**	-.316**	.112	.292*
Travel outside Romania				1	-.084	.087	-.001
Absolutist responses					1	-.739	-.379*
Multiplist responses						1	-.339*
Evaluativist responses							1

Note. N = 147 for all correlations. * $p < .05$; ** $p < .01$.

Table 2

Frequency of Epistemic Modes across Ten Dilemmas in Three Romanian Cohorts

Cohort		Absolutist	Multiplist	Evaluativist
Oldest (N = 44)	Mean	5.18 ^a	4.64 ^a	0.18 ^a
	SD	2.25	2.26	0.58
Middle (N = 52)	Mean	3.62 ^b	5.42 ^a	0.94 ^b
	SD	1.88	2.18	1.65
Youngest (N = 51)	Mean	3.39 ^b	5.20 ^a	1.45 ^b
	SD	2.18	2.15	1.88

Note. Different superscripts in the same column indicate statistically significant differences.

Table 3

Hierarchical regression; Predictors of absolutist thinking

	Predictors of absolutist thinking		
	Model 1	Model 2	Model 3
Education level	-.19*	.00	.03
Social media use		-.32*	.09
Cohort ^a			.28 ⁺
<i>F</i> total	5.53*	7.99***	6.61***
Adjusted <i>R</i> ²	.03	.09	.10
ΔF		10.11**	3.56 ⁺
ΔR^2		.06	.02

^a Cohort = oldest generation v. other two generations

⁺*p* = .061 **p* < .05 ***p* < .01 ****p* < .001

Table 4

Hierarchical regression: Predictors of evaluativist thinking

	Predictors of evaluativist thinking		
	Model 1	Model 2	Model 3
Education level	.23*	.09	.04
Social media use		.24*	.09
Cohort			-.23 ⁺
<i>F</i> total	8.29**	7.12***	5.73***
Adjusted <i>R</i> ²	.05	.08	.09
ΔF		5.67*	2.79 ⁺
ΔR^2		.04	.02

⁺*p* = .097 **p* < .05 ***p* < .01 ****p* < .001

Qualitative analyses

**Generational
Differences in
Volume of
Opinions**



```
graph LR; A[Generational Differences in Volume of Opinions] --> B["... people from older generations are the most vehement about their opinions..."]; A --> C["... my generation looks for information that they do not agree with, while my grandparents' generation has less access to information and settle for what they hear on television..."]
```

“... people from older generations are the most vehement about their opinions...”

“... my generation looks for information that they do not agree with, while my grandparents’ generation has less access to information and settle for what they hear on television...”

- ❖ Absolutist thinking was less frequent and evaluativist thinking more frequent the earlier in life a cohort was exposed to the postcommunist Romanian environment;
- ❖ Our sociodemographic analysis indicated that, as predicted, younger cohorts experienced greater exposure to education, social media, and international travel;
- ❖ Although the experience of international travel increased across the generations, its presence or absence was not a significant influence on mode of epistemic thinking.

- ❖ Although age of exposure to the postcommunist environment accounted for some of the generational shifts in epistemic thinking, the regression analysis showed that age was less important than two environmental influences – education (evaluativist ↗) and social media (absolutist ↘)
- ❖ The middle generation looks similar to the youngest generation in terms of education, traveling, and use of technology, as well as their responses to the epistemic dilemmas.

THANK YOU!