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RS755: Final Project
Analyzing the Climate Change Hope Scale (CCHS)

1. CHARACTERIZATION OF THE LATENT VARIABLE

1a. relevance and intended use

Climate change education seeks to inform and inspire. UNESCO's Education for Sustainable Development Program puts it this way: climate change education "helps people understand and address the impacts of the climate crisis, empowering them with the knowledge, skills, values and attitudes needed to act as agents of change."

A crucial attitude for an agent of change is hope. And climate change education, if it is to be successful, needs to engender hope.

In their 2017 article *"Development and Validation of the Climate Change Hope Scale for High School Students,"* Christine Li and Martha Monroe present a 11-item instrument to measure the construct of climate-change-hope and advocate for their scale's use in evaluating "the effectiveness of (climate change) educational programs on students' hopefulness." They further note that measuring the construct would allow researchers to compare means across subgroups (e.g. gender and socioeconomic status).

1b. definition and internal structure

The climate-change-hope construct is based on the construct of hope. And hope is something that has been measured in many different contexts, using a variety of instruments. Hope scales have been developed to measure hope in elderly patients (Herth Hope Index; Herth, 1992), in ill patients (Miller Hope Scale; Miller & Powers, 1988), in people who are developmentally delayed (Integrative Hope Scale; Schrank et al., 2011) and in adults in therapy (Adult Hope Scale; Snyder 1991).

Much of this work is summarized in Snyder's psychological theory of hope (Snyder, 1994), in which he defines hope as "a positive motivational state that is based on an interactively derived sense of successful: (a) agency (goal-directed energy) and (b) pathways (planning to meet goals)." Some have described these two dimensions of hope as "willpower": having the motivation and fortitude to move forward, and "waypower": having a sense of the ways that you can attack the problem. Additionally, Snyder notes the goal-oriented nature of hope. He suggests that is imperative for the individual to have a goal to be hopeful about. And that without an envisioned goal there can be no hope.

In expanding the theory of hope to climate-change-hope, Li & Monroe and Ojala (2012, 2015) note that climate-change-hope has both an individual aspect and a community aspect. So willpower (or agency) has two aspects: a personal willpower and a collective willpower. Same with waypower (pathway belief).

And when expanding the theory of hope to climate-change, the goal-oriented aspect of hope (which in Snyder's description is a personal goal) becomes, for climate change, a collective goal. Ojala, in her description of this dimension of the climate-change-hope construct, notes that when an individual sees "positive reappraisal" in the community, this increases the individual's hope. Thus, the fifth dimension of the climate-change-hope construct, is the individual's belief in the collective commitment to the envisioned goal.

In summary, for Li & Monroe, climate-change-hope has five dimensions:

a. Personal willpower,
b. Personal waypower,
c. Collective willpower,
d. Collective waypower,
e. Collective commitment to a goal.

1c. *validity challenges*

In measuring the climate-change-hope construct researchers believe that they can determine how hopeful an individual (or group of individuals) is about addressing the climate change challenge. And then, using that level of hope, make a statement about how likely an individual (or group of individuals) is to become a positive agent for change. The underlying assumption here is that climate change is a problem that needs to be addressed, and to address that problem we need a collective effort.

It is this assumption, that underpins the limitations of measuring the construct using the instrument that Li & Monroe have developed (and I am analyzing for this paper). The primary limitation is that an individual who is a "climate change sceptic" sees no need to be hopeful about addressing climate change, because they do not believe that there is a problem that needs to be addressed. So, attempting to measure the construct of climate-change-hope for these individuals is not appropriate. In their 2017 article, Li & Monroe address this limitation of their Climate Change Hope Scale, by proposing a two-tiered questionnaire. Suggesting an initial filtering question along the lines of "I think climate is changing," and then having only the respondents who answer yes proceed to answer the instrument questions.

A more nuance limitation is based on the fact that beliefs in climate change are not binary: yes, the climate is changing versus no, the climate is not changing. Rather hope around addressing climate change is related to the perceived seriousness of climate change. So, an individual who believes that climate change is serious may be less hopeful than an individual who believes that climate change is minimal.

Further, how hope propels or motivates an individual's actions is related to their perception of climate change. And, as previously noted, one of the reasons for measuring the climate-change-hope construct is to try to determine how likely that individual (or group of individuals) is to be a positive agent for change. Someone may be highly hopeful because they believe that climate change is not that big a deal and that a couple of scientists can make a couple of quick tweaks to address the problem. That person, though highly hopeful, is minimally motivated.

It is along this line of reasoning that Ojala identifies two different hope dimensions: "'constructive hope,' which is positively related to pro-environmental engagement, and 'hope based on denial of the seriousness of climate change,' which instead is negatively related to engagement (Ojala, 2015). Li & Monroe's Climate Change Hope Scale, which is the instrument that I am analyzing for this assignment, does not address the two different dimensions that Ojala has identified. And just as Snyder's psychological theory of hope posits that an individual's goal is related to their perception of hope, it would likewise be useful to pay attention to the individual's perception of the goal when measuring climate-change-hope.

2. EXISTING INSTRUMENT

2a. *literature review of construct measurement*

In my literature review I could only find mention of two instruments to measure climate-change-hope.

The first instrument was developed and subsequently modified by Maria Ojala, from Upsala University in Sweden. The instrument (which we do not have access to) contained both Likert-type and open-ended items. And the measure of climate-change-hope was a subscale of a more involved instrument that attempted to measure hope and worry about climate change as well as coping strategies. The instrument was used in a study of 348 Swedish high school students done in 2009, titled "Regulating worry, promoting hope: How do children, adolescents and young adults cope with climate change." In her article, Ojala makes no reference to previous instruments measuring climate-change-hope.

In a second study of 642 Swedish high school students, published in 2015, Olaja takes her previous instrument items related to climate-change-hope and adds three items "aimed at getting at different dimensions of hope based on denial" (Olaja, 2015). This attention to 'hope based on denial of the seriousness of climate change,' was mentioned above in the discussion of the limitations of the Li & Monroe CCHS.

The second measurement instrument that I found in the literature is the instrument that I am analyzing in this paper. It developed, and verified by Li & Monroe, and published in a 2017 article. The discussion above, of the latent variable and dimensions of climate-change-hope, is drawn mostly from this article with highlighted contrasts from Ojala's work.

2b. *known psychometric properties of existing instrument*

The instrument I am analyzing is shown in appendix A. It is a version of the instrument that Li & Monroe wrote about in their 2017 article. It is a 10-item instrument.

The original instrument (an 11-item instrument) was analyzed by Li & Monroe in their 2017 article. The only other analysis that I could find of the CCHS was done in a study of middle school students in North Carolina to "examine how climate-change-hope, despair, and concern predict pro-environmental behavior (Stevens & Peterson, 2015).

The Stevens & Peterson instrument divided up the CCHS into two instruments. One measuring climate change hope (8-itmes). The other measuring climate change despair (4-items). Based on their bibliography notes, it appears that an initial version of Li & Monroe's CCHS was developed for Stevens & Peterson's study. Stevens and Peterson's analysis is presented in the table below. Their factor loadings are based upon one factor for each of their two scales, and they used the eigenvalues greater than 1 rule of thumb to make their determination of the number of factors.

Li & Monroe, used 11 of the 12 items in Stevens & Peterson's instrument, but calculated one scale and reverse coded the "despair" items (dropping one of the four that Stevens & Peterson used. They also did a factor analysis, but did CFA based on the identified dimensions of their climate-change-hope scale. The factor loadings are reported in the table below.

	Item numbering based on Li & Monroe's 2021 version of the CCHS	Stevens & Peterson version (1-7 scale) Mean	SD	factor loadings	Li & Monroe version (1-7 scale) factor loadings
		Hope Scale			**CW factor**
1	I believe people will be able to solve problems caused by climate change.				.528
	I believe people will be able to stop global warming	3.94	1.70	0.58	
2	I believe scientists will be able to find ways to solve problems caused by climate change.	4.93	1.61	0.71	.543
3	Even when some people give up, I know there will be others who will continue to try to solve problems caused by climate change.	5.42	1.62	0.65	.532
4	If everyone works together, we can solve problems caused by climate change.	4.91	1.75	0.77	.827
6	I believe more people are willing to take actions to help solve problems caused by climate change.				.543
	Every day, more people care about problems caused by climate change	3.99	1.58	0.58	
					PW factor
5	I am willing to take actions to help solve problems caused by climate change.				.759
	At the present time, I am energetically pursuing ways to solve problems caused by climate change.	3.11	1.57	0.43	
7	I know what to do to help solve problems caused by climate change.				.496
	I know that there are things that I can do to help solve problems caused by climate change.				.683
	I know that there are many things that I can do to help solve problems caused by climate change.	4.43	1.70	0.70	
	Because people can learn from our mistakes, we will influence climate change in a positive direction.	4.41	1.65	0.68	
		Despair Scale			**LW factor**
8	Climate change is beyond my control, so I won't even bother trying to solve problems caused by climate change.				.895
	Problems caused by climate change are out of my control.	3.97	1.77	0.65	
9	Climate change is so complex we will not be able to solve problems that it causes.				.723
	Climate change is such a complex problem, we will never be able to solve it.	4.96	1.57	0.70	
10	The actions I can take are too small to help solve problems caused by climate change.	4.22	1.75	0.69	.731
	I feel helpless to solve problems caused by climate change.	4.57	1.66	0.65	

CW = Collective-sphere will and way power
PW = Personal-sphere will and way power
LW = Lack of will and way power

Stevens & Peterson also calculated Cronbach's alpha to assess the internal reliability of each of their two scales (hope and despair). Results are shown to the right

	Hope scale	Despair scale
retesting (n=60)	$\alpha = 0.75$	$\alpha = 0.75$
post-hoc (n-1486)	$\alpha = 0.55$	$\alpha = 0.59$

For their 2017 analysis, Li & Monroe calculated the internal reliability of their three factors and reported the Cronbach's alpha was between 0.681 and 0.797 for each of the three dimensions.

2c. *instrument goals*

The goal of the instrument is to quantify the climate-change-hope construct. And the subgoals are to measure the five dimensions of the construct:

a. Personal willpower,
b. Personal waypower,
c. Collective willpower,
d. Collective waypower,
e. Collective commitment to a goal.

2d. *instrument with goals indicated*

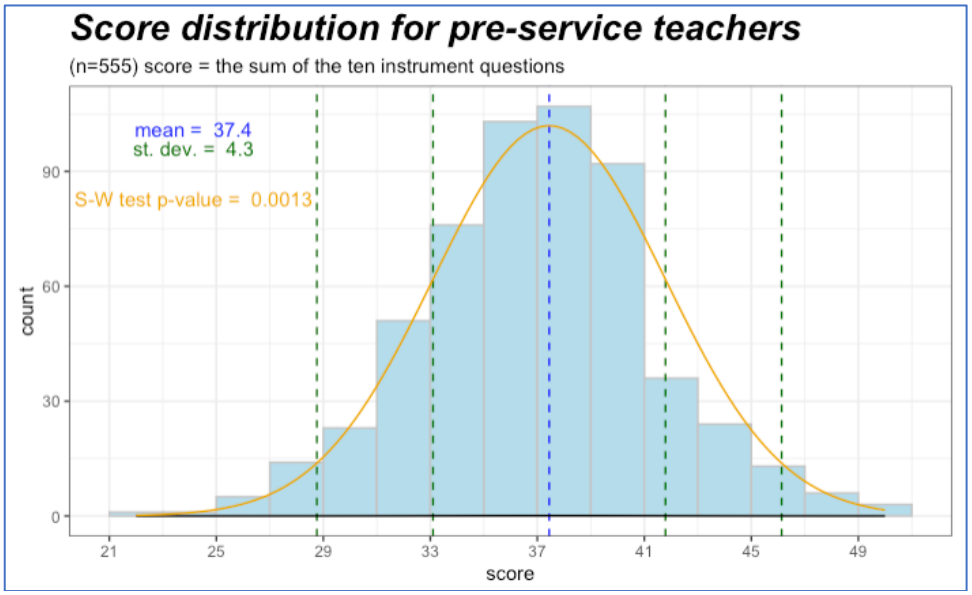
	Item	Scale	Goal	coding
1	I believe people will be able to solve problems caused by climate change.	1-5	d. Coll-way	forward
2	I believe scientists will be able to find ways to solve problems caused by climate change.	1-5	d. Coll-way	forward
3	Even when some people give up, I know there will be others who will continue to try to solve problems caused by climate change.	1-5	c. Coll-will	forward
4	If everyone works together, we can solve problems caused by climate change.	1-5	c. Coll-will	forward
5	I am willing to take actions to help solve problems caused by climate change.	1-5	a. Per-will	forward
6	I believe more people are willing to take actions to help solve problems caused by climate change.	1-5	e. Coll-goal	forward
7	I know what to do to help solve problems caused by climate change.	1-5	b. Per-way	forward
8	Climate change is beyond my control, so I won't even bother trying to solve problems caused by climate change.	1-5	a. Per-will	reverse
9	Climate change is so complex we will not be able to solve problems that it causes.	1-5	d. Coll-way	reverse
10	The actions I can take are too small to help solve problems caused by climate change.	1-5	b. Per-way	reverse
Scale: 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree				

3. ITEM AND TEST RESULTS

3a. Sample characteristics

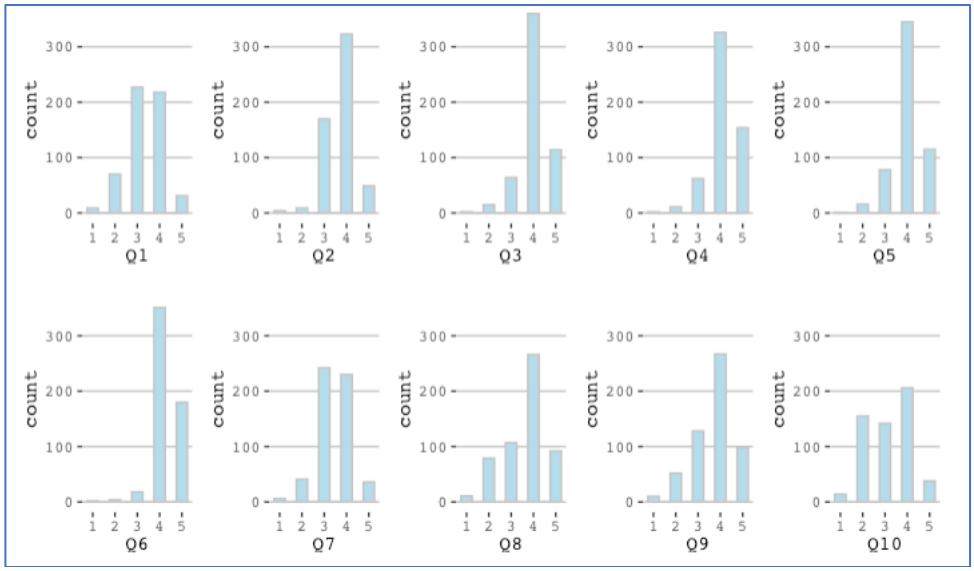
The sample being used for this analysis was collected from pre-service teachers (n=555) in 2021 using the 10-question CCH. No other information about the individuals who took the CCH instrument was provided.

The distribution of the Climate Change Hope scores is not significantly different than a normal distribution (Shapiro-Wilk test, p=0.0013). There are no NAs nor zeros in the data.



3b. Question summary

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	score
mean	3.35	3.73	4.03	4.12	4.00	4.27	3.45	3.63	3.70	3.18	37.45
standard_deviation	0.83	0.67	0.68	0.70	0.69	0.59	0.77	0.99	0.93	1.00	4.34



The three items with the highest endorsements are the three items in the instrument that measure the subgoals of “collective commitment to a goal” and “collective willpower.”

Q6 ($\bar{X}$=4.27): “I believe more people are willing to take actions to help solve problems caused by climate change.”

Q4 ($\bar{X}$=4.12): “If everyone works together, we can solve problems caused by climate change.”

Q3 ($\bar{X}$=4.03): “Even when some people give up, I know there will be others who will continue to try to solve problems caused by climate change.”

And the fourth highest mean endorsement is also a willpower subgoal, but personal.

Q5 ($\bar{X}$=4.00): “I am willing to take actions to help solve problems caused by climate change.”

The only willpower question that doesn’t have a higher mean than the waypower questions is Q8 ($\bar{X}$=3.63). This is one of the three questions that was reverse-coded.

The three questions with the highest standard deviations are the three questions that were reverse coded. Reverse coded items are often put in instruments to control for acquiescence bias. And there is research that shows that “evaluating assertions that include negations is cognitively burdensome and error-laden for respondents, thus adding measurement error and increasing respondent fatigue (e.g., Eifermann, 1961; Wason, 1961)” (Krosnick & Presser, 2009). This may be the reason for the significantly higher ($p=.0001$) average standard deviation for these three questions (mean st.dev. = 0.97) versus the first eight questions (mean st.dev. = 0.70).

But unlike questions that are negated to control for acquiescence, the last three questions of this survey have been reverse coded because they are measuring “not-hope” (the lack of hope) or rather “despair.” And the assumption is that respondents who are less hopeful will endorse these three questions at higher levels. So it’s not the negation of the question wording that requires reverse coding, but rather the negation of the construct.

As such it appears that the higher variation in the answers for these three questions is because of something beyond the extra cognitive load required to evaluate a negated assertion. In their analysis of their original 11-item instrument, Li & Monroe’s factor analysis confirmed a three-factor solution with “lack of willpower and waypower” being the third factor. In the current 10-item instrument the last three questions are the questions that are directly measuring this factor.

A final observation concerns the comparison of the answers to Q1 and Q2. Two questions that are semantically similar except Q1 asks about “people solving problems” and Q2 asks about “scientists finding ways.” Logically, given that scientists are a subset of people, if the scientist can solve problems caused by climate change, people also can. But the two questions also differ in the phrases “solve” and “find ways.” The pairing of these questions, along with their significantly ($p\approx0.00$) different means (Q1: 3.35, Q2: 3.73) suggests that the sample respondents felt that the non-scientist people were cause for less hope about solving problems caused by climate change.

4. PSYCHOMETRIC ANALYSIS

4a. *Exploratory factor analysis*

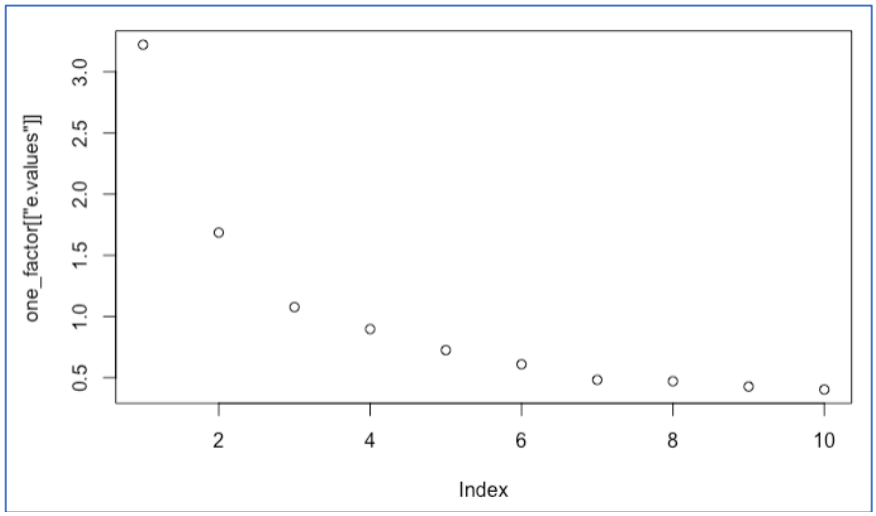
After reverse-coding the last three items, the calculated Cronbach's alpha for the 10 items was $\alpha = 0.74$. And none of the questions were flagged as being negatively correlated with the final score. For the entire instrument, the inter reliability of the items is acceptable.

An exploratory factor analysis of the data to determine the number of factors in the instrument suggests three factors as determined by:

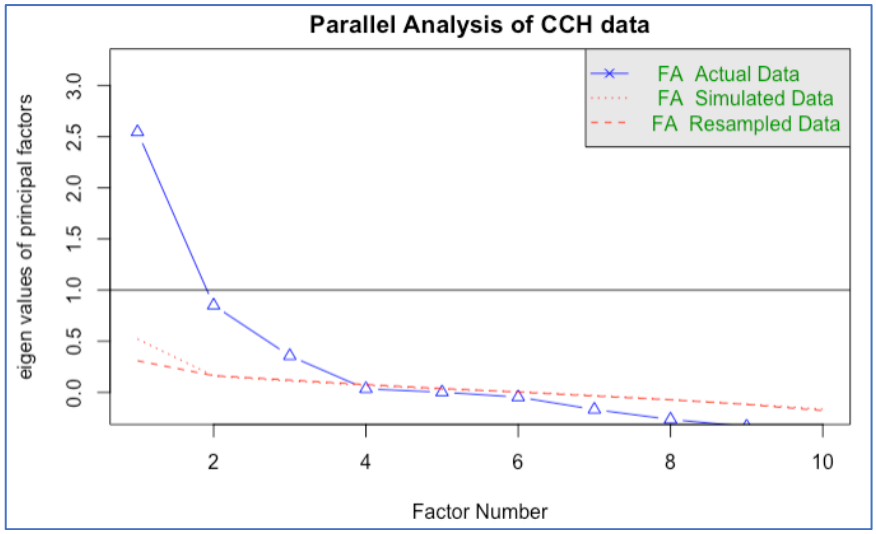
(1) The Kaiser-Guttman rule (eigenvalues > 1). Here it should be noted that the three factors are representing just under 60% of the total amount of variance in the instrument.

```
> fa(CCH[,1:10],1,n.obs=555)$e.values
 [1] 3.2210493 1.6857124 1.0767091 0.8971072 0.7253873 0.6095655 0.4823488 0.4710841 0.4277063 0.4033298
```

(2) A Scree test, where there is an elbow and then leveling off of the eigenvalues after the third factor.



(3) A parallel analysis where the eigenvalues of the first three factors in the original data are greater than simulated eigenvalues from randomly generated data based on the original data.



The determination of three factors in this 10-item instrument, is consistent with the three factors that Li and Monroe found for their original 11-item instrument.

But the factor loading based on this sample are not consistent with the original sample.

Here the loadings for a three-factor model, reveal questions that are cross-loaded with a Promax oblique rotation (Q4 & Q7). I have presented a Promax rotation because that's the rotation used for the three-factor analysis that Li & Monroe did on their original 11-item instrument. The same pattern of cross loading for Q4 & Q7 with the CW and PW factors showed up for the several oblique and orthogonal rotations that I tried.

In their analysis, Li & Monroe identifies the three factors as:
CW-collective sphere, which matches with MR3 in the table below,
PW-personal sphere, which matches with MR1,
LW-lack of will and way power, which matches with MR2.

And further, here Q3 & Q6 load as PW, but were originally identified as CW.

```
Loadings:
    MR1    MR2    MR3
Q1  -0.130         0.690
Q2                 0.805
Q3   0.386         0.179
Q4   0.451         0.314
Q5   0.687
Q6   0.882        -0.208
Q7   0.187         0.203
Q8           0.777 -0.167
Q9           0.751  0.134
Q10          0.571
```

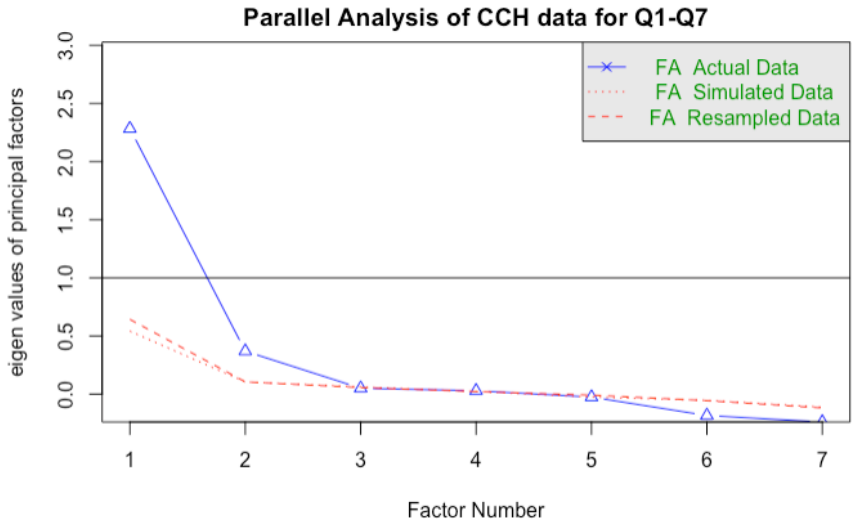
```
 With factor correlations of
    MR2  MR1  MR3
MR2 1.0 0.30 0.20
MR1 0.3 1.00 0.44
MR3 0.2 0.44 1.00
```

Interestingly, when I tried a two-factor loading, there were clean loadings on the two factors using a Promax oblique loading. And when I looked at which questions were associated with which factor, the results were similar to Stevens & Petersons analysis of the initial CCH instrument where they divided the instrument into two sub-instruments. One measuring "hope" with 8 questions, and the other measuring "despair" with 4 questions. On the 10-item CCH that I am analyzing, the first seven question loaded cleanly on the first factor – which could be called "hope." And the last three questions (the questions with the highest mean standard deviations in their answers), loaded cleanly on the second factor (MR2) – which could be called "despair."

```
Loadings:
    MR1    MR2
Q1   0.472
Q2   0.605
Q3   0.527
Q4   0.728
Q5   0.660
Q6   0.571
Q7   0.354
Q8          0.781
Q9   0.110  0.708
Q10         0.560
```

```
 With factor correlations of
     MR1  MR2
MR1 1.00 0.34
MR2 0.34 1.00
```

When I subsetted the instrument and looked at just the first seven questions (the "hope" questions), I found evidence for a two-factor analysis, with an acceptable internal reliability ($\alpha = 0.75$).



But the factor loading for this two-factor model of the "hope" subscale was not clean. And unlike the analysis that Li & Monroe did with their original 11-item CCH instrument (n=946), the data for the 10-item CCH (n=555) does not provide evidence for a model that includes **CW-collective sphere** that is distinct from **PW-personal sphere.**

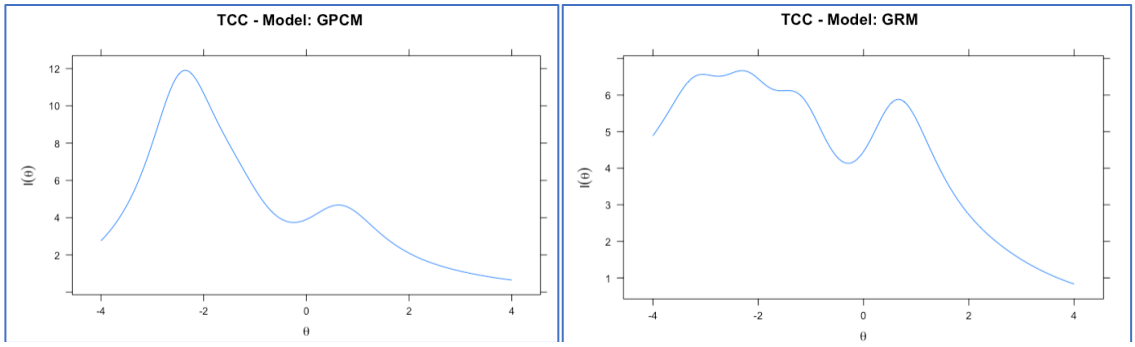
```
Loadings:
   MR1    MR2
Q1 -0.121  0.688
Q2         0.822
Q3  0.376  0.189
Q4  0.479  0.314
Q5  0.692
Q6  0.886 -0.216
Q7  0.165  0.189
```

```
 With factor correlations of
     MR1  MR2
MR1 1.00 0.64
MR2 0.64 1.00
```

4b. *Item Response Theory analysis*

To look at the usefulness of the individual items on the CCH instrument, and to develop a scoring algorithm that could more accurately model the latent variable, I ran and compared two IRT models. Because the instrument was polytomous with answers on an ordinal Likert scale, I chose to use 2-parameter models. The Generalized Partial Credit Model (GPCM) and the Graded Response Model (GRM). Both models generate parameters for the difficulty and the discrimination of each of the items on the instrument.

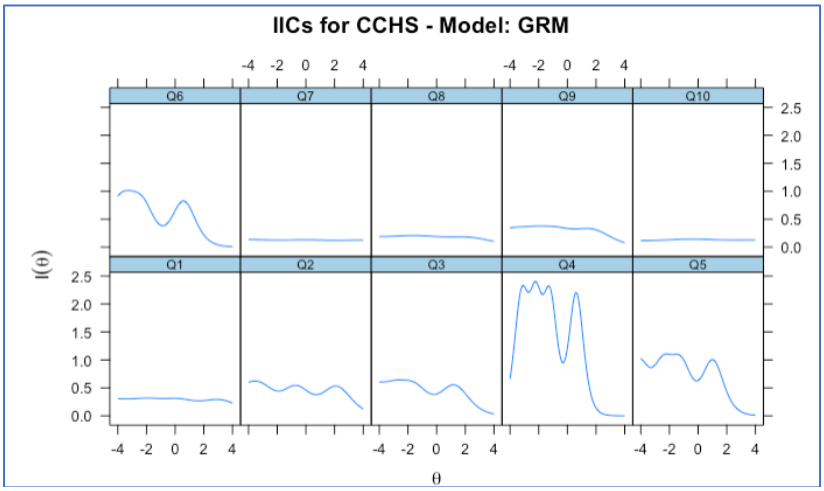
Looking at the Test Characteristic Curves (TCC) for each model (on next page), it's clear that the GRM model is providing more information along a wider range of the latent variable scores. Though for each model, the information provided tails off dramatically above +1 logits on the latent variable scale. Because of this clear difference in the TCCs, the GRM model is preferable for this data set.



I also looked at the comparable model fits for these two models by running an ANOVA test to compare them. For both the AIC estimate (Akaike's Information Criteria), and the BIC estimate (Bayesian Information Criteria), there is no practical difference between the estimates for the two models.

model_type	AIC	BIC
GPCM	11591.75	11807.70
GRM	11493.82	11709.77

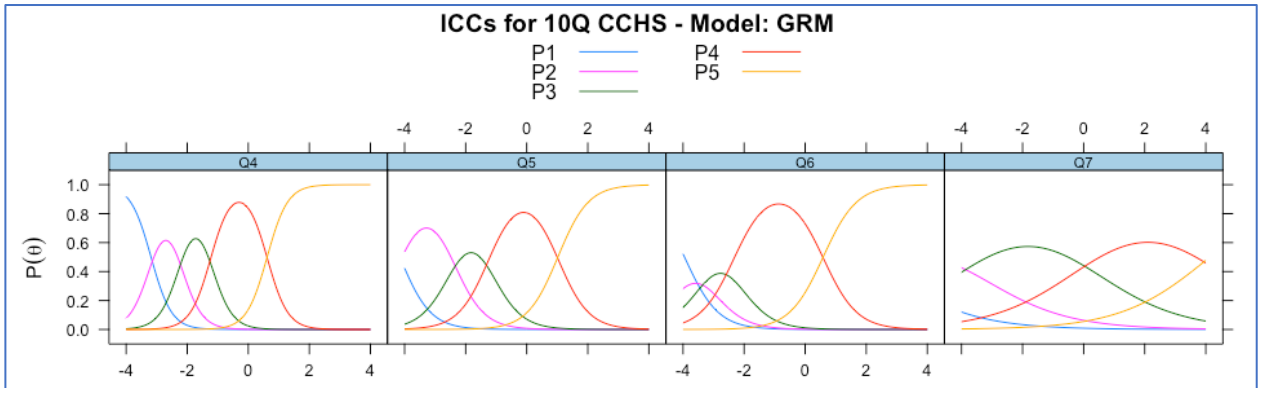
In looking at the Item Information Curves (IIC) for each of the ten questions, several of the questions (Q4, Q5 and Q6) are provided more information about an individual's placement on the latent variable scale than other items (e.g., Q7).



This is also seen when looking at the model's coefficients, where the largest three values for the discriminant coefficient (a) are for Q4, Q5, and Q6. And the lowest discriminant coefficient (a=0.69) is for Q7.

	a	b1	b2	b3	b4
Q1	1.0586461	-4.365293	-2.024008	0.1921130	3.1043618
Q2	1.4464284	-4.073945	-3.151117	-0.6882037	2.1254261
Q3	1.4781072	-4.482878	-2.896389	-1.6088277	1.2145437
Q4	2.9641614	-3.184752	-2.218072	-1.2238859	0.6178793
Q5	1.9945979	-4.153862	-2.413323	-1.2293392	1.0200700
Q6	1.8133931	-3.951812	-3.223930	-2.3220797	0.5881577
Q7	0.6866474	-6.891223	-3.723564	0.0749128	4.1301339
Q8	0.8232092	-5.101504	-2.280871	-0.8807387	2.1894242
Q9	1.1177152	-4.022352	-2.233055	-0.7707581	1.6608813
Q10	0.6866143	-5.631853	-1.386156	0.3161555	4.0557910

In looking at the Item Characteristic Curves (ICC) for these questions it's clear that Q4 (and to a lesser extent Q5 and Q6) have a better spacing of the difficulty parameter (b1, b2, b3, and b4 in the printout from the previous page). This is seen in the ICC for Q4 below, where each response level has a unique and distinct (and evenly spaced) peak probability along the latent variable scale. This contrasts with Q7 where response 3 is the most likely response for negative logits on the latent variable scale and response 4 is most likely for positive logits. While responses 1, 2 and 5 are unlikely across the scale.



5. Conclusions

Using the 10 question Climate Change Hope instrument and the data from the pre-service teachers collected in 2021, I was not able to replicate the instrument analysis that Li & Monroe did for their 11 question CCH instrument in a data collected from high school students in 2013 and 2015. It should be noted that in the past 8 years much has changed in the public perception of climate change. And perhaps much has changed in our perceived "ability to solve problems caused by climate change." Also, it should be noted that the two samples represent two different age groups (participants who could potentially be 8 years apart in maturity). As such, there are reasons to expect these two different samples would behave differently.

Unlike Li & Monroe, I was not able to confirm a three-factor model for the CCH instrument. But the inner reliability of item questions was similar for both samples.

And my IRT analysis suggests that there are just a handful of the 10 items that are providing information to the overall score, suggesting that several of the questions could be eliminated.

The lack of clear factors in this sample and the fact that not all questions are contributing to the placement of individuals along the latent variable scale suggests that it might be useful to further examine the theoretical basis of the questions in this instrument.

As an example, in the IRT analysis, Q7 was the item with the lowest ability to discriminate. The question, "I know what to do to help solve problems caused by climate change," is an example of the intertwining of many facets of the hope construct. Implied in this item question is a goal. And as noted above, a defined goal is an imperative aspect in Snyder's psychological theory of hope. And given how contentious climate change is in this country, it's hard to imagine that the goal is particularly clear or consistent among participants.

Additionally, theoretically defined factors of "personal waypower" and "collective waypower" are knit together in Q7. To attest positively (or negatively) to this

question both facets (personal and collective) need to be aligned, particularly given the enormity of the effort needed to solve the climate change problem. And as such, it makes sense that Q7 cross loaded between the personal and the collective factors. To tease out the distinctions between personal and collective, it might be useful to consider personal sphere questions that were conditioned on assumed collective waypower. Such as “If I knew there was a mechanism to reduce global temperature, I would be willing to take actions.”

And finally, I am hopeful that further efforts with this instrument will move it toward the goal of providing useful and accurate information about climate change hope. A construct that is an important component of climate change activism.

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APPENDIX A
CLIMATE CHANGE HOPE SCALE (CCHS)

Definition: Climate change refers to changes in the Earth's climate including changes in temperature, precipitation, and wind patterns over a period of several decades or longer, primarily due to the emission of greenhouse gases from burning fossil fuels and land-use change. It may cause problems such as changes in sea level, more extreme heat events, fires and drought, more extreme storms, and floods. Scientists project that the problems caused by climate change could affect, for example, forest health, agriculture, freshwater supplies, coastlines, human health, economy, wildlife habitat, and human migration.

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

1	I believe people will be able to solve problems caused by climate change.	1	2	3	4	5
2	I believe scientists will be able to find ways to solve problems caused by climate change.	1	2	3	4	5
3	Even when some people give up, I know there will be others who will continue to try to solve problems caused by climate change.	1	2	3	4	5
4	If everyone works together, we can solve problems caused by climate change.	1	2	3	4	5
5	I am willing to take actions to help solve problems caused by climate change.	1	2	3	4	5
6	I believe more people are willing to take actions to help solve problems caused by climate change.	1	2	3	4	5
7	I know what to do to help solve problems caused by climate change.	1	2	3	4	5
8	Climate change is beyond my control, so I won't even bother trying to solve problems caused by climate change.	1	2	3	4	5
9	Climate change is so complex we will not be able to solve problems that it causes.	1	2	3	4	5
10	The actions I can take are too small to help solve problems caused by climate change.	1	2	3	4	5