Effectiveness of Perspective Development Courses on University Students' Attitude Change

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Abstract

Whether the attitude of the Chinese Generation Z (Gen Z) can be changed through university education, especially the teaching activities of the perspective development course attracted in the past twenty years more attention in the society after the emerge of 'post-80s' and 'post-90s' phenomenon in China. Among the discussions, only a few articles use academic analysis tools to make serious research on this issue from the perspective of social psychology and pedagogy. Most of them are often concentrated only under the framework of "Ideological and Political Education". Therefore, this paper takes the sophomore Chinese overseas students in Thailand as the research object, using marriage attitude as the carrier to measure whether they have changed their attitudes and concepts before and after a perspective development course. The study used "before- and after- test" to record and measure the students' attitudes. Through the use of social psychology attitude change theories - specifically persuasion theory, concentration trend analysis, frequency analysis, non-parametric double correlation sample difference test, cross contingency table analysis to observe whether there is statistical support for or against the hypothesis of significant data.

Keywords: Effectiveness of Lecture, Perspective Development Course, Marriage Attitude Change, Chinese Oversea Students

1. Introduction and Background

China's Gen Z teenagers are widely believed to be born and grow up in the digital media era of rapid economic take-off and information explosion after China acceded to the WTO. They have extremely rich material and information that their fathers never had. The 21st century has already entered the third decade. They have to take social responsibility independently by themself. What kind of social cognition do they have? Will their previous ideas and attitudes change, after accepting the collision of other overseas cultures and thoughts? If so, what changes will happen?

This study will focus on the undergraduate international project of a private University in Thailand, a country along the Belt and Road. This study uses the theories of attitude change in social psychology, takes a perspective development course Eastern and Western Views and Values under the farmer of General Education in the university, and adopts the pre- and post-test methods in the educational experimental research methodology. In this study, lecture activity (input) is taken as the independent variable, and students' attitude change (Output) is taken as the dependent variable. Non-parametric statistical methods were used to measure

whether students' attitudes towards marriage had changed before and after the course and what and how many changes had taken place?

This theory-testing and pre- and post-test analysis may enrich the case diversity of attitude and opinion studies in the field of educational practice, and elaborate discussions on effective methodologies for such issues. Meanwhile, it is further hoped to inspire our colleagues to ask the questions in a reverse thinking way: Do we need to constantly improve and update our teaching content, course design and teaching methods in order to motivate students to change their attitudes and opinions more effectively following the goals of Learning Outcome design?

2. Literature Review

As early as the early stage of social psychology, Thomas has pointed out that social psychology is a science that studies social attitudes. In the early Stage of Attitude Change Research about four explanations and theoretical explorations developed: Kelman's Three-Stage Theory, Festinger's Cognitive Dissonance Theory, Heider and Newcomb's Cognitive Balance Theory, Lewin's Participatory Change theory. Dorwin, Hovland and Wilbur Lang Schramm have made in-depth practice and research on persuading people to change their attitudes. In 1959, American psychologist Hovland et al., regarded attitude change as a process of information exchange, and on this basis, he proposed a Standard Attitude Change Model.

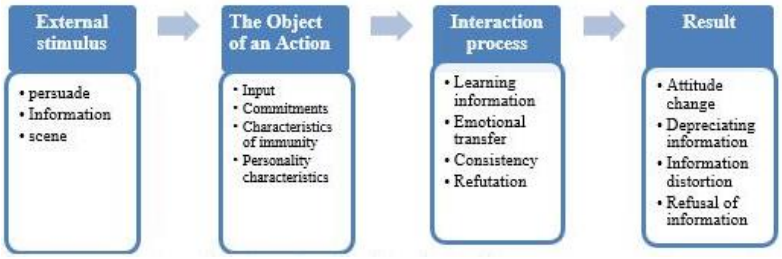
To measure attitude changes also needs appropriate tools and methodology of social science. Wundt founded the world's first psychology laboratory in Leipzig in 1879. Meumann and Wilhelm August Lay, co-editors of German psychologists for many years, co-edited Experimental pedagogy and formed a school of experimental education in Germany. After that Alfred Binet and Théodore Simon introduced intelligence tests into the study in France. Thorndike and others applied the experimental method to curriculum design, teaching method reform and class teaching. Robert et al., who took two groups of college students as subjects in 1973, one as a control group and the other as an experimental group, carried out an experimental study called free memory and published a study, which was seen as the origin of contemporary psychological research methods. Since then, this controlled experimental method has also been widely used in the field of educational experimental research.

3. Methods

3.1 Theory and variables

This study takes Hovland's persuasion theory, as shown in below, as the theoretical basis. According to the theory, persuader, the way how to present the issue, the Audience as individuals.

Figure 1
Simplified standard attitude change model after Havland



and the Influence of groups are all possible influencing factors of attitude change. The study regards lecturers as persuaders in the survey, teaching methods as the ways how to present the issue, students as individuals, teaching contents as issue-relevant information, etc. The comprehensive system, which is composed of all the course indicators is considered as the hypothetical independent variable of this study. The dependent variable of this study is students' attitudes and opinions about the corresponding social problems - marriage attitude after participating the course. However, to be able to answer the research questions, this variable must be compared with another independent variable - marriage attitude pre-test before the course began.

The perspective development course Eastern and Western Views and Values belongs to the General Education curriculum in the undergraduate education syllabus of international college. The course accounted for 3 normal academic credits. According to the curriculum plan, undergraduate students will take this course in the first semester of the second academic year. Altogether 316 Students from five natural classes from the 2 semester of 2019 to the 1 semester of 2020 were surveyed.

According to the research standard of the educational experiment, the irrelevant variables in the experiment need to be controlled so that they do not have an undesirable impact on the experiment. In this study, the age, gender, class number, academic performance, teacher level, questionnaire, test time and test method of middle school students are regarded as independent variables. It is undeniable that in the quasi-experimental environment, teachers cannot control certain variables in teaching practice. For example, in this study, the number of classes, gender ratio, test scores, students' professional departments and other conditions are unable to 'control'. In addition to these conditions, in the course of the experiment, the experimenter can only ensure that the above-mentioned uncontrollable independent variables are 'natural random' but are normal without exception and disorder.

3.2 Single group pre- post-test design

The study selected a single group of pre- and post-test design without setting control groups as follows: T1 represents the pre-test results, T2 represents the post-test results; X represents experimental control and processing.

Figure 2
Concept of single group pre- and post-test design

Hypothesis 1: After participating in the course 'Eastern and Western Views and Values', students' attitudes towards marriage and willingness to assume marital responsibility are not more positive.

Hypothesis 2: After participating in the course 'Eastern and Western Views and Values', students' attitudes towards marriage and willingness to assume marital responsibility are more positive.

3.2 Implement of the experiment and questionnaire

The questionnaire was made in electronic form on 'Questionnaire star' and distributed to students in the form of QR-Code twice, once in the first and once in the last section of the course. Altogether 316 students participated in this test; after data processing, excluding 13 students who only participated in the pre-test or post-test and 6 students who do not come from China. Finally, 297 valid data are obtained.

Followed personal information part in the questionnaire, in the 'Attitude and opinion survey' section, this study tried to put forward a general issue from 10 chapters of the whole course, hoping that students can express their attitudes and opinions directly and generally. The questionnaire below did not list five equidistant of Likert scale, but directly give 5 different intensity of options with one statement respectively for students to choose. As for marriage issues, attitudes and options are shown below. Thus, five typical marriage attitudes are presented exhaustively, and the five options are consistent as far as possible with the principle of equidistant.

Table 1
Question and answer options about marriage attitude

KG145：“My” view of marriage is _____: [scale question]
【1】Stay single / People don't need to get married for a lifetime
【2】I don't believe in marriage / The responsibilities are too heavy
【3】Follow fate/I haven't thought about it seriously / Like most people
【4】Willing to believe in marriage / Willing to take responsibility
【5】Get married early / Marriage is one of the most important things in one's life

Because the categorical variables obtained in this study can't do parameter analysis like continuous variables, so the data can't and don't need to do general reliability analysis. However, this study evaluates the content validity of the questionnaire (Face validity) by combining expert logic analysis and statistical analysis.

3.3 Statistical analysis and methods

As mentioned above, the data results of this study do not conform to the normal distribution of general parameters. Therefore, this study first uses the mean, descriptive frequency analysis, and column distribution chart to show the intuitive distribution of data in the pre-test and post-test.

Table 2

Analysis purpose and methods selection

Purpose of analysis	Statistical analysis method
Data distribution	Mean, frequency analysis, columnar distribution
Differences between the data from Pre- and Post-Test	Wilcoxon Signed-Rank Test
Relation between Pre- and Post-Test	Cross- tabulation

The Wilcoxon Signed-Ranks Test (W-Test) is the nonparametric test equivalent to the dependent t-test. As the W-Test does not assume normality in the data, it can be used when this assumption has been violated and the use of the dependent t-test is inappropriate. Concerning this study, the two groups of observed values of students' attitudes towards marriage in the pre- and post-test will be arranged in the order from small to large and numbered in the order, which is called rank. Change values can be defined as positive or negative according to the direction of attitude change. In this way, the movement of students' attitudes in the five options can be observed. Then the data will be tested whether the change conforms to the significant characteristics under statistics. The critical value of W-Test is W（$p < 0.05$).

The Cross Tabulation (contingency table) is a cross-classification frequency distribution table listed when observations are classified by two or more attributes and then compares the distribution of each group to find the relationship between variables. Specifically, the pre-test frequency of students' attitudes towards marriage before the course and the post-test frequency after the course can be respectively presented in the same interactive classification table in the form of rows and columns. Through the observation of the distribution of the frequency of each option to find out whether and what kind of relationship between the pre-test and post-test.

Formulae 1

W-Values of W-Test

$$W = \sum_{i=1}^{N_r} [\mathrm{sgn}(x_{2,i} - x_{1,i}) \cdot R_i]$$

W = test statistic; Nr = sample size, excluding paris where X1=X2; Sgn = sign function; X1,i,X2,i = corresponding ranked pairs from two distributions; Ri = rank i

4. Findings

4.1 Observable distribution differences

After descriptive statistical analysis of the data of 297 students (n = 297), it can be seen below that between the minimum option value 1 to the maximum option value 5, the arithmetic mean in the pre-test (Marriage 1) is 3.30. The arithmetic mean in the post-test (Marriage 2) is 3.41. According to the observation of the mean, the concentration trend value of students' attitude towards marriage in the post-test is 3.41, which is 0.11 higher than 3.30 in the pre-test. According to the attitude scale design, the larger the value is, the more positive the attitude towards marriage is and the stronger the willingness to marry is.

Table 3

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Marriage 1	297	1	5	3.30	.867
Marriage 2	297	1	5	3.41	.944
Valid N (listwise)	297				

As shown below, in the pre-test (Marriage1), it was observed that the frequency of Option 4 'Willing to believe in marriage / Willing to take responsibility' reached 124, representing 41.8 percent of the total effective subjects, constituting the first frequency option. Meanwhile, the frequency of Option 3 'Follow fate / I haven't thought about it serious / Like most people' reached 113, accounting for 38 % of the total, becoming the second largest option. These two options accounted comprehensively for 79.8 %.

Table 4

Frequency and percentage of pre-test (Marriage 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Option 1	10	3.4	3.4	3.4
	Option 2	38	12.8	12.8	16.2
	Option 3	113	38.0	38.0	54.2
	Option 4	124	41.8	41.8	96.0
	Option 5	12	4.0	4.0	100.0
	Total	297	100.0	100.0	

As shown in the figure below, Option 4 and Option 3 are still the two largest options in the post-study test (Marriage2). However, the gap between them is widened. Option 4 'Willing to believe in marriage / Willing to take responsibility' - represents the options of positive attitudes towards marriage, and the measured frequency has increased from 124 previously to 138. The proportion increased from 41.8 % to 46.5 %. Option 3 'Follow fate / I haven't thought about it seriously / Like most people' - an option with a relatively neutral attitude towards marriage, decreased from 113 to 91 in the pre-test, accounting for 38 % to 30.6 %.

Table 5

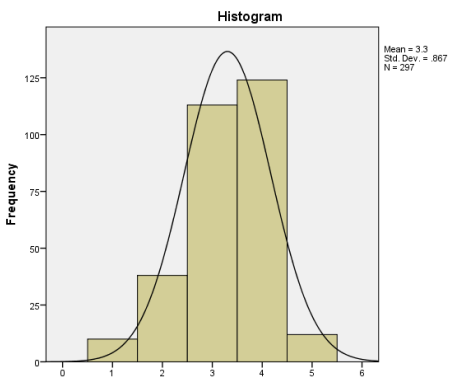
Frequency and percentage of post-test (Marriage 2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Option 1	14	4.7	4.7	4.7
	Option 2	32	10.8	10.8	15.5
	Option 3	91	30.6	30.6	46.1
	Option 4	138	46.5	46.5	92.6
	Option 5	22	7.4	7.4	100.0
	Total	297	100.0	100.0	

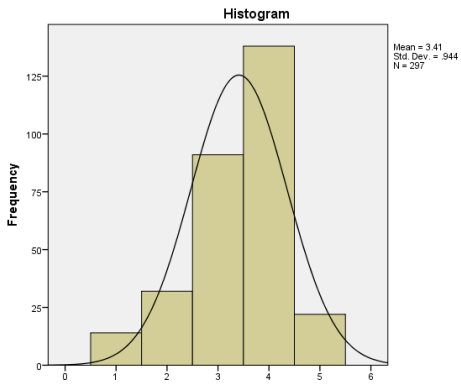
The data trends and characteristics can also be intuitively reflected in the following distribution diagram. It can be seen from the histogram of marriage 1 that Option 4, which represents the relatively positive attitude towards marriage, is slightly ahead of Option 3, which represents the neutral attitude. These two options together form two options with the highest frequency.

Figure 3

Frequency and distribution of pre- and post-test



Marriage 1



Marriage 2

It can be observed from the post-test (Marriage 2) histogram that Option 4 increases significantly and Option 3 decreases significantly. The frequency gap between the two was 11 in the pre-test and 47 in the post-test, accounting for 15.9 percent. Another noteworthy change is that Option 5, which has an extremely positive attitude towards marriage in the post-test, increases by 10 compared with the pre-test frequency, accounting for 3.4 %. This change is greater than the increase in Option 1 of extreme negative attitudes to marriage.

4.2 Positive significant Wilcoxon value

According to the mechanism of the W-Test, hypotheses should set up for the W-Test concern the population median of the difference scores. H0: The median difference is zero versus; H1: The median difference is positive ($p < 0.05$). The test statistic for the W-Test is W, defined as the smaller of W+ (sum of the positive ranks) and W- (sum of the negative ranks). If the null hypothesis is true, we expect to see similar numbers of lower and higher ranks that are both positive and negative (i.e., W+ and W- would be similar).

The statistics for the test are in the following table, which is made by SPSS 24. The two-sided test W value for the Asymptotic 2-tailed test is .017, which is smaller than the significant

evidence value. Normally the statistically significant evidence is at p =0.05, to show that the median difference is positive (i.e., that repetitive behavior improves).

Table 6
Wilcoxon ranks

		N	Mean Rank	Sum of Ranks
Marriage 2 – Marrige 1	Negative Ranks	35[a]	58.34	2042.00
	Positive Ranks	69[b]	49.54	3418.00
	Ties	193[c]		
	Total	297		

a. Marrige2 < Marrige1
b. Marrige2 > Marrige1
c. Marrige2 = Marrige1

If the research hypothesis is true, we expect to see more higher and positive ranks. In this study, more students changed their attitudes after the course activities (lecture, discussion and activities) as compared to before, i.e., W+ much larger than W-.

Like W-Test table shows, in this study, under the "Marrige2 – Marrige1" logic, W+ = 69 and W- = 35, 193 cases of students stay unchanged. As next must be determined is whether the observed test statistic W supports the null or research hypothesis. we determine a critical value of W such that if the observed value of W is less than or equal to the critical value, we reject H0 in favor of H1, and if the observed value of W exceeds the critical value, we do not reject H0.

Table 7
W-Test and W-Value

	Marriage 2 – Marriage 1
Z	-2.387
Asymp. Sig. (2-tailed)	.017

The critical value of W can be found in the table above. In this study, there is statistically significant evidence at p = .017, which is ≤ 0.05, to show that the median difference is positive. i.e., there are significant marriage attitude changes of the tested students after the course activities to determine.

Usually, SPSS uses the smaller "Sum of Rang" as the test (2042.00 in the rank table above). In this case, Z=-2.3871, p = .017 (p < 0.05), so it can be seen that "Marriage2 and Marriage1 scores are different". However, if it is significant, the size is judged based on the "number" of changed cases. According to this study, 69 > 35, that is, the note of Table b is established, which means "Marrige2 > Marrige1" is established. From another angle, the result of W-Test is based on "negative ranks" and the "Negative ranks" in Ranks table is note a: "Marrige2 < Marrige1". Because Z is a negative value, so it should be "reject this hypothesis". That is to say, a significantly negative Z value is rejected "negative ranks". Thus, note b: "Marriage2 > Marriage1" is established.

4.3 More positive than negative attitude changes verified

When the options in the pre-test are arranged vertically, and the options in the post-test are arranged horizontally, the frequency of the tested students' options is filled in the corresponding table, then a cross-tabulation table can be obtained, as shown in the following table. After setting the data format, it can be observed that the diagonal row bolded number of the cross table represents the frequency of selecting the same option in the pre-test and post-test. For example, Option 1 is selected in the pretest, and Option 1 is also selected eight times in the post-test. In this way, the frequency of the same option - the frequencies of option 2, 3, 4 and 5 in both tests are 20, 63, 97 and 5.

Table 8

Cross tabulation of pre-test (Marriage 1) post-test (Marriage 2)*

		Marriage 2					Total
		Option 1	Option 2	Option 3	Option 4	Option 5	
Marriage 1	Option 1	8	1	1	0	0	10
	Option 2	1	20	11	5	1	38
	Option 3	4	9	63	34	3	113
	Option 4	0	2	12	97	13	124
	Option 5	1	0	4	2	5	12
Total		14	32	91	138	22	297

The cross table can be seen as two parts separated by the diagonal formed by the above-mentioned same option. The area upper right the diagonal - Normal black numbers present the frequency of relative negative attitudes towards marriage in the pre-test and relative positive attitudes in the post-test. For example, in the pre-test, 34 students in the third row of Option 3 choose Option 4 with a relatively more positive attitude in the fourth column of the post-test. Similarly, in the pre-test, 13 students in the fourth row of Option 4 choose Option 5 with the most positive attitude towards marriage in the post-test. If all the numbers in this region are summed up, the sum of students with a relatively negative attitude towards marriage in the pre-test and a more positive attitude in the post-test can be obtained, which is 69. That is, 69 students changed their attitudes towards marriage more positively in the post-test than in the pre-test.

In the lower-left area of the diagonal, the shallow gray number shows the frequency of choosing the relatively positive attitude to marriage in the pre-test and the relative negative attitude in the post-test. For example, in the pre-test, 12 students in the third row of Option 4 choose Option 3 with a relatively more negative attitude in the third column of the post-test. Similarly, in the pre-test, 9 students in the third row of Option 3 choose Option 2 with a more negative attitude towards marriage in the second column of the post-test. If all the numbers in this region are summed up, the sum of students with a relatively positive attitude towards marriage in the pre-test and a more negative attitude towards marriage in the post-test can be obtained, which is 35. That is, 35 students were more negative about marriage at the post-test than at the pre-test.

If a comparison is made between the lower-left (negative attitude change) and the upper-right (positive attitude change) areas of the cross-table, it is not difficult to conclude that in the group of students with attitudes change, the frequency of positive attitude change toward marriage after the participation of the course is more significantly higher than the number of negative

attitude changes, or in other words, it is almost twice the number of negative attitude changes (69/35 ≈ 1.97).

5. Conclusion

Through central tendency analysis, it can be confirmed that the mean of students' attitudes towards marriage in the pre-test and post-test are 3.30 and 3.41, respectively, that is, 0.11 statistical differences can be observed. In frequency analysis and histogram description analysis, it is very to observe the intuitive distribution changes and trends of the above-mentioned differences in the pre-test and post-test of the five options. After the non-parametric double-correlation test on the non-continuous variable of attitude, it can be more accurately measured that the difference of students' attitudes towards marriage before and after the course can be statistically confirmed as significant by W value (p =.017, <0.05). Finally, the magnitude and frequency of this statistical change in marital attitudes are more specifically and accurately explained through the corresponding analysis in the cross-tabulation. At this point, this study can explicitly negate Hypothesis 1 proposed in the research design and verify hypothesis 2. After participating in the course 'Eastern and Western Views and Values', students' attitudes towards marriage and willingness to assume marital responsibility are more positive.

It is worth adding that the significance of the conclusion of this study is to confirm and illustrate that educational practice can indeed influence and play a role in changing students' attitudes and opinions in university courses, at least in Perspective Development Courses. However, the case of this study is limited to marriage attitude, and the results of such attitude change strongly depend on the independent variables, namely, lecturers' teaching materials, case selection, teaching methods, teaching time, and thinking depth. Therefore, the conclusions of this study cannot be excessively deducted and covered in other areas without conditionalities. Moreover, whether students' attitudes and opinions on other social issues such as cognition of human nature, individualism, collectivism, aesthetics, pre-marital sex, homosexuality, etc. will also change through educational practice, or how and to what extent they will change, require specific exploration and answers from other studies.

6. References

Bao, Y., Zhu, F., Hu, Y., & Cui, N. (2016). The research of interpersonal conflict and solution strategies. *Psychology*, *7*(4), 541-545. https://doi.org/10.4236/psych.2016.74055

Brehm, J. & Cohen, A. (1962). *Explorations in Cognitive Dissonance*. Wiley. https://doi.org/10.1037/11622-000

Campling, N. C., Pitts, D. G., Knight, P. V., & Aspinell, R (2017). A qualitative analysis of the effectiveness of telehealthcare devices (i) are they meeting the needs of end-users? *BMC Health Services Research, 17*(1). 455. https://doi.org/10.1186/s12913-017-2270-8

Festinger, L. (1957). *A Theory of Cognitive Dissonance.* Stanford University Press.

Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, *58*(2),203-210. https://doi.org/10.1037/h0041593

Glander, T. R. (1990). *Education and the mass media: The origins of mass communications research in the United States*, 1939-1955 [Doctoral dissertation, University of Illinois at Urbana-Champaign]. IDEALS. http://hdl.handle.net/2142/19051

Heider, F. (1958). *The Psychology of Interpersonal Relations.* John Wiley & Sons. http://dx.doi.org/10.1037/10628-000

Hepworth, J. T., & West, S. G. (1988). Lynchings and the economy: A time-series reanalysis

of Hovland and Sears (1940). *Journal of Personality and Social Psychology*, *55*(2), 239–247. https://doi.org/10.1037/0022-3514.55.2.239

Hovland, C. I., & Sears, R. R. (1940). Minor studies of aggression: VI. Correlation of lynchings with economic indices. *The Journal of Psychology: Interdisciplinary and Applied*, *9*(2), 301-310. https://doi.org/10.1080/00223980.1940.9917696

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication And Persuasion: Psychological Studies of Opinion Change*. Yale University Press.

Humphreys, M. S., & Schwartz, R. M. (1972). The statistical evidence for negative transfer in part-whole free recall. *Behavior Research Methods & Instrumentation*, *4*(6), 287-291. https://doi.org/10.3758/bf03207306

Kelman, H. C. (1958). Compliance, Identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution, 2* (1), 51-60. https://doi.org/10.1177/002200275800200106

Lewin, K., & Dorwin, C. (1951). *Field Theory in Social Science*. Harper. https://psycnet.apa.org/record/1951-06769-000

Marrow, A. J. (1977). *The Practical Theorist: The Life and Work Of Kurt Lewin.* Teachers College Press. https://nanopdf.com/download/the-practical-theorist_pdf

Meumann, E., & Lay, W. A. (2017). *The Great Soviet Encyclopedia* (3rd ed.). The Gale Group.

Newcomb, T. M. (1953). An approach to the study of communicative acts. *Psychological Review, 60*(6), 393-404. https://doi.org/10.1037/h0063098

Ritzer, G. (2011). *Sociological Theory*. McGraw-Hill.

Sears, R. (1961). Carl Iver Hovland: 1912-1961. *American Journal of Psychology, 74* (4), 638. https://www.jstor.org/stable/i261858

Siegler, R. S. (1992). The other Alfred Binet. *Developmental Psychology, 28* (2), 179-190. https://doi.org/10.1037/0012-1649.28.2.179

Thomas, W. I. (1928). The behavior pattern and the situation. *Publications of the American Sociological Society*, *22*, 1-13.https://brocku.ca/MeadProject/Thomas/Thomas_1927.html

Thorndike, E. (1999). *Education Psychology: Briefer Course.* Routledge.

Wickland, R., & Brehm, J. (1976). *Perspectives On Cognitive Dissonance*. Halsted Press. https://doi.org/10.4324/9780203767672

Wundt, W. (1862) Beiträge zur Theorie der Sinneswahrnehmung. Leipzig: C. F. Winter. (The introduction, titled *On the methods of psychology*, is translated in: Classics in psychology ed. T. Shipley. Philosophical Library 1961.)