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## The Effectiveness of Online Counseling for University Students in Turkey: A Non-Randomized Controlled Trial

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**Abstract:** Online counseling is a mental health intervention between the counselee and the counselor using digital technologies computers or smartphones. A growing number of counselors have been providing counseling via the Internet. However, there are mixed findings regarding the effectiveness of online counseling when compared traditional face-to-face counseling and other modalities. Thus, the main purpose of the study was to investigate the effectiveness of online individual counseling compared to face-to-face counseling, and a control group regarding subjective well-being. To that end, a total of 60 college students were assigned to one of the three groups (21 online, 24 face-to-face, and 15 control). The instruments of the study were the Satisfaction with Life Scale, the Positive and Negative Affect Schedule, and the Brief Symptom Inventory. In order to examine the effectiveness of online counseling comparing to face-to-face counseling and control group, Mixed design (split-plot) ANOVA was employed. The findings of mixed ANOVA revealed that there was no significant interaction effect for the subjective well-being of the participants in different groups indicating that the three groups did not differ regarding subjective well-being scores measured over three times (pre-test, post-test, and follow-up). Nevertheless, the main effect for the group was significant indicating that the scores of the participants in the face-to-face counseling group regarding positive and negative affect changed significantly. Findings and implications were discussed regarding the relevant literature and some suggestions were offered.

**Keywords:** *Online counseling, face-to-face counseling, subjective well-being, life satisfaction, positive and negative affect.*

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### Introduction

Online counseling refers to a professional counseling help in which the counselee and the counselor communicate with each other via electronic devices (Barak & Grohol, 2011; Bloom, 1998; Richards & Vigano, 2012, 2013). In online counseling, there is a therapeutic relationship between the counselee and the counselor who are in different locations but communicate via the Internet or computer technologies (Barak et al., 2009; Bozkurt, 2013). Online counseling can be delivered via computers or smartphones (Andersson, 2018).

Online counseling services nowadays have become even more widespread. Individuals may prefer to receive online psychological help instead of face-to-face due to several reasons such as physical limitations (Austen & McGrath, 2006; Chester & Glass, 2006; Kilroe, 2010; Shaw & Shaw, 2006), financial reasons (Chester & Glass, 2006), living in a remote area from professional mental health services (Backhaus et al., 2012; Cook & Doyle, 2002; Kilroe, 2010; Shaw & Shaw, 2006), fear of stigmatization (Aygun-Cengiz, 2007; Joyce, 2012), preference of being anonymous (Aleman, 2002; Chester & Glass, 2006; Joinson & Paine, 2007; Shaw & Shaw, 2006). Further, people may choose to receive online psychological help in emergencies such as pandemic outbreaks (Wind et al., in press).

Studies showed that online counseling can be as effective as face-to-face counseling (Barak et al., 2008; Drago et al., 2016). Studies focusing on videoconference counseling have also provided evidence that these interventions can be

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effective for depression (Berryhill et al., 2019), anxiety (Rees & Maclaine, 2015), substance use (Dugdale et al., 2019), and stress (Kim et al., 2018). Studies also revealed that patients had high satisfaction and acceptance levels for online counseling, therefore, it can be recommended as an alternative way to face-to-face counseling (Backhaus et al., 2012). One study concluded that empathy, support, and self-disclosure can also be established in online counseling as is the case in face-to-face counseling (McKenna, 1998). Similarly, a study revealed that individuals disclosed themselves more in online counseling or therapy, although they reported higher satisfaction and genuineness levels in face-to-face counseling (Cui et al., 2010).

Counseling mainly aims to increase the level of subjective well-being of the counselee (Yuksel-Sahin, 2015). Subjective well-being is defined as the subjective and cognitive assessment of positive and negative emotions and satisfaction with life (Diener, 1984), and it is related to the extent of individuals have positive opinions about themselves (Diener, 1984; Diener et al., 2010; Diener et al., 2002; Diener et al., 1997; Park, 2004; Yetim, 1991). Subjective well-being also includes daily positive and negative feelings, and evaluations of one's own life (Lyubomirsky & Dickerhoof, 2006). Life satisfaction is a cognitive construct of subjective well-being (Lucas & Diener, 2004; Ngui & Lay, 2020).

Considering the importance of subjective well-being on mental health (Bolier et al., 2013), there is a need to examine whether online counseling can be effective in increasing subjective well-being. Moreover, online counseling is a relatively new concept in Turkey. The limited number of studies of online counseling in Turkey (Basak et al., 2010; Bozkurt, 2013; Erdem et al., 2018; Owen & Korkut Owen, 2013; Ozer et al., 2016; Savas & Hamamci, 2010; Tanrikulu, 2009; Zeren, 2014, 2015, 2017) mainly focused on the opinions of the individuals about online counseling. Additionally, there is no up-to-date study comparing the effectiveness of online and face-to-face counseling in Turkey. In this respect, the current study examined the well-being of individuals to find out whether online counseling is effective in comparison to face-to-face counseling and control groups. Therefore, the study aimed to answer the following question: Is there a significant difference between online, face-to-face and control groups in terms of subjective well-being according to pre-test, post-test, and follow-up test scores?

### Methodology

The study is a quasi-experimental study including three groups, namely online counseling group, face-to-face counseling group, and control group. Data were collected at three time-points: pre-test, post-test, and follow-up test eight weeks after the completion of the sessions.

#### Participants

The study was conducted with undergraduate students at a large state university in Istanbul, Turkey. The project was announced via social media and through posters distributed to several places on the campus such as the library and cafeterias. In addition, the researchers attended several lectures to make announcements. One hundred and twenty-four students volunteered at the beginning of the study, and they were assigned to the face-to-face, online or control group. However, 64 of the students (51.61%) did not continue the sessions. The drop-out rate was 60.52% for the control group, 55.32% for the online group, and 38.46% for the face-to-face group. A total of 60 students (21 online, 24 face-to-face and 15 control) participated in the study. As can be seen in Table 1, the number of subjects in the control group was lower than the other two groups due to the higher drop-out rate. Thirty-one (51.6%) of the participants were female. The mean age of the students was 22.14. Table 1 presents the details of the demographic information of participants.

Table 1. Demographics of the Participants

Variable		Online	Face-to-face	Control	Total	%
<b>Gender</b>	Female	11	12	8	31	51.6
	Male	10	12	7	29	48.3
<b>Faculty</b>	Education	6	7	5	18	30
	Chemical & Metallurgical Eng.	3	5	0	8	13.3
	Electrical & Electronics Eng.	0	5	3	8	13.3
	Science & Literature	2	2	2	6	10
	Mechanical Engineering	4	0	2	6	10
	Civil Engineering	2	2	1	5	8.3
	Architecture	2	0	1	3	5
	Economic & Administrative Sci.	1	1	1	3	5
	Art & Design	1	1	0	2	3.3
	Naval Architecture & Maritime Eng.	0	1	0	1	1.7
<b>Year</b>	1	0	0	2	2	3.3
	2	6	1	4	11	18.3
	3	4	7	1	12	20
	4	11	16	8	35	58.3

The participants were assigned to groups through the stratified sampling method. Counseling was offered through a written letter to the students who agreed to be contacted by the researchers. Participants were assigned to the online, face-to-face, and control groups according to gender, and pre-test scores to make all groups similar at the onset. There were no significant differences in pre-test scores between the groups according to one-way ANOVA. The participants who had technological difficulties were assigned to the face-to-face group and the others were assigned to either online or control groups. We excluded participants with a higher score than 150 based on the Brief Symptom Inventory (BSI). Excluded participants were referred to a mental health professional.

### *Measures*

#### *i. Satisfaction with Life Scale (SWLS)*

This scale aims to measure general life satisfaction levels of adults starting from adolescents (Diener et al., 1985). Turkish adaptation of the scale was carried out with 500 university students (Koker, 1991). The scale has five items on a 7-point Likert scale. Cronbach's Alpha coefficient was reported as 0.86 and test-retest reliability as 0.73 (Yetim, 1991). In this study, Cronbach's Alpha was computed as .88.

#### *ii. Positive and Negative Affect Schedule (PANAS)*

PANAS aims to measure positive and negative affect (Watson et al., 1988). Turkish adaptation of PANAS was carried out by Gencoz (2000). The scale consists of 20 items and two dimensions. The first 10-item measures the positive affect dimension, and the other 10-item measures the negative affect dimension. Based on the data derived from 199 university students, Cronbach's Alpha values were computed as .83 and .86 respectively for positive and negative effect, and the test-retest reliability was .40, and .54 respectively (Gencoz, 2000). In this study, Cronbach's Alpha coefficients were computed as .86 for positive affect, and .84 for negative affect.

#### *iii. The Brief Symptom Inventory (BSI)*

This scale was developed to measure various psychological symptoms (Derogatis, as cited in Sahin & Durak, 1994). Turkish adaptation of the inventory was carried out with university students by Sahin & Durak (1994). It consists of nine dimensions: somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety disorder, hostility, phobic anxiety, paranoid thoughts and psychoticism (Savasir & Sahin, 1997). Cronbach's Alpha coefficient for the total of the scale was computed as .94 in the adaptation study. In this study, we found Cronbach's Alpha internal coefficient .85 for the whole scale.

### *Procedure*

The study was approved by the Ethics Committee of a state university where the research had been conducted. The participants were informed about the procedure of the study such as interventions, data collection, and their right to withdraw. The participants were asked to read and sign the informed consent form. Having received the informed consent forms, the questionnaires were sent to them to collect pre-test measurements. Then, they were allocated to one of the three groups. Upon the completion of the interventions, the instruments were sent again to the participants to collect post-test data.

#### *i. The counselors and supervisors*

Three male and three female counselors conducted counseling sessions. All counselors were attending a master's program in counseling psychology. The counselors were supervised on a weekly basis during the study by an experienced mental health professional lecturing in a university. The counselors also had attended biweekly peer supervision sessions. Before the counseling sessions, the counselors and supervisors received approximately seven hours of training, on subjects which included online counseling, and the use of technology. In addition to this training, technical assistance was provided (e.g. technical problems about Skype or Internet connection) to them in case of a technical problem.

#### *ii. Counseling sessions*

Ten counseling sessions were planned for each student. However, the number of counseling sessions was shortened or extended based on the counselee's needs. In total, 458 sessions (180 online, 205 face-to-face, and 73 control) were conducted. The theoretical background of the online and face-to-face counseling sessions was based on person-centered theory. Each counselor conducted an average of eight sessions in the online group, and nine sessions with the face-to-face group. Sessions with online counseling and control groups were conducted via Skype. Face-to-face counseling sessions were conducted in the Counseling Center of the university where the study took place.

The participants in the control group attended bi-weekly sessions for five weeks. These sessions included lectures about several subjects in psychology covering the information about the human brain and the history of psychology. Each session lasted approximately 40 minutes. After receiving follow-up tests, the participants in the control group

were asked whether they wish to receive online or face-to-face counseling. Counseling was provided for the participants in case they needed it.

#### Data analysis

Mixed design analysis of variance (mixed-design ANOVA/ Split plot ANOVA) was used for the data analysis. Mixed design ANOVA examines whether there are main effects for each of the independent variables and whether the interaction effect is significant (Pallant, 2011). In the present study, we used Mixed design ANOVA to determine whether there was a significant change in life satisfaction, positive affect, and negative affect over the three time-points (time effect). We also compared the three groups (online, face-to-face, and control groups) based on whether there were significant changes regarding life satisfaction, positive affect and negative affect scores in a specific group (group effect). Finally, we examined whether the change in life satisfaction, positive affect and negative affect over time were different among the three groups (group\*time effect).

Before conducting the analyses, the assumptions of mixed design ANOVA were tested. A multi-dimensional perspective was employed to test whether the data had a normal distribution for each group. Shapiro-Wilk Test, Q-Q graphics, and histogram tables were used, and skewness and kurtosis values were computed to test the normality of the distribution for each group. According to the results, the distribution of scores obtained from all three groups was normal. The assumption of sphericity was tested by Mauchly's test of sphericity. The findings showed that the assumption of sphericity was reached ( $p > .05$ ). Homogeneity of variance was also examined. Levene's test of equality of error variance yielded that there was no significant difference between the variances of the groups. Finally, Box's test of equality of covariance matrices was examined, and the values were not significant for all variables ( $p > .05$ ). The findings showed that the assumptions of mixed design ANOVA were met. Bonferroni test as a post-hoc test was used to detect differences among the groups. IBM SPSS 23 Software Program was used to analyze the data. All analyses were tested at .05 significance level.

### Results

The number of participants in each group, mean scores and standard deviations at three time-points are displayed in Table 2.

Table 2. Means and Standard Deviations in Life Satisfaction, Positive Affect, and Negative Affect at Three Times

Variables	Groups	Test	n	M	SD
Life satisfaction	Online	Pre-test	21	18.86	6.04
		Post-test	21	21.29	6.17
		Follow-up	21	20.43	5.79
	Face-to-face	Pre-test	24	19.54	5.70
		Post-test	24	18.58	7.12
		Follow-up	24	20.54	6.90
	Control	Pre-test	15	17.20	6.69
		Post-test	15	19.00	6.46
		Follow-up	15	20.13	7.59
Positive affect	Online	Pre-test	21	29.38	6.81
		Post-test	21	31.38	8.85
		Follow-up	21	32.14	7.38
	Face-to-face	Pre-test	24	27.21	6.95
		Post-test	24	30.04	6.54
		Follow-up	24	31.75	8.51
	Control	Pre-test	15	28.20	9.64
		Post-test	15	30.13	7.50
		Follow-up	15	29.33	9.76
Negative affect	Online	Pre-test	21	26.76	6.15
		Post-test	21	22.67	7.07
		Follow-up	21	24.00	7.92
	Face-to-face	Pre-test	24	26.29	5.87
		Post-test	24	24.25	7.43
		Follow-up	24	22.67	6.54
	Control	Pre-test	15	30.00	5.17
		Post-test	15	27.93	7.58
		Follow-up	15	28.80	7.60

The results of mixed design ANOVA for life satisfaction are displayed in Table 3.

Table 3. Results of Mixed Design ANOVA for Life Satisfaction

Source	Sum of squares	df	Mean square	F	p	$\eta^2$
Between-subjects	65886.19	1				
Group (online/face-to-face/control)	52.48	2	26.24	.28	.75	.01
Error	5250.60	57	92.12			
Within-subjects	98.30	2				
Time (pre-test/post-test/follow-up)	98.30	2	49.15	2.38	.10	.08
Group * factor	90.15	4	22.54	1.46	.22	.05
Error	1937.28	114	16.99			

As shown in Table 3, the result of the analysis of variance for life satisfaction scores at pre-test, post-test, and follow-up test, the main effect for group was found as insignificant [ $F_{(2-57)} = .28$ ;  $p > .05$ ]. Similarly, it was also found that the main effect for time was not significant ( $F_{(2-114)} = 2.38$ ;  $p > .05$ ). Furthermore, the interaction effect (group\*time) was also not significant ( $F_{(4-114)} = 1.46$ ;  $p > .05$ ). The findings suggested no significant difference in terms of the effectiveness of three groups in time.

The results of mixed design ANOVA for positive affect are displayed in Table 4.

Table 4. Results of Mixed Design ANOVA for Positive Affect

Source	Sum of squares	df	Mean square	F	p	$\eta^2$
Between-subjects	155322.53	1				
Group (online/face-to-face/control)	94.26	2	47.132	.363	.70	.01
Error	7397.71	57	129.78			
Within-subjects	228.21	1				
Time (pre-test/post-test/follow-up)	255.97	2	127.99	4.83	.01	.15
Group * time	56.68	4	14.92	.58	.67	.02
Error	3365.64	114	29.52			

As shown in Table 4, the results of mixed ANOVA regarding the positive affect variable yielded no significant main effect for group ( $F_{(2-57)} = .70$ ;  $p > .05$ ). Nevertheless, within-subject ANOVA yielded significant main effect for time ( $F_{(2-114)} = 4.83$ ;  $p < .05$ ) with an effect size of .15 indicating a large effect size (Cohen, 1988). However, the interaction effect (group\*time) was not significant ( $F_{(4-114)} = .58$ ;  $p > .05$ ). Bonferroni test as post-hoc test was used to determine the source of the change in positive affect scores in time. The results showed that the difference between the pre-test mean scores ( $M = 27.21$ ), and follow-up test mean scores ( $M = 31.75$ ) in the face-to-face group regarding positive affect scores was significant ( $p < .05$ ).

Another ANOVA for the mixed design was conducted to examine differences regarding group and time for negative affect, and the results are given in Table 5.

Table 5. Results of Mixed Design ANOVA for Negative Affect

Source	Sum of squares	df	Mean square	F	p	$\eta^2$
Between-subjects	116406.62	1				
Group (online/face-to-face/control)	675.77	2	337.88	3.56	.03	.11
Error	5405.34	57	94.83			
Within-subjects	184.55	1				
Time (pre-test/post-test/follow-up)	267.69	2	133.84	5.73	.01	.14
Group*time	73.33	4	18.33	.89	.47	.03
Error	2637.26	114	23.13			

As shown in Table 5, a significant main effect for group was found ( $F_{(2-57)} = 3.56$ ;  $p < .05$ ) with an effect size of .11 indicating a moderate effect size (Cohen, 1988). Furthermore, we also found a significant main effect for time ( $F_{(2-114)} = 5.79$ ;  $p < .05$ ) with an effect size of .14 a large effects size (Cohen, 1988). However, the interaction effect (group\*time) was not significant ( $F_{(2-114)} = .79$ ;  $p > .05$ ). Bonferroni test was employed to find out the source of the significant main effect, and it yielded a significant difference between the follow-up mean scores of the face-to-face counseling group ( $M = 22.67$ ), and the follow-up mean scores of the control group ( $M = 28.80$ ). Moreover, Bonferroni test was used to determine the source of the main effect for time, and it showed that the difference between the pre-test mean scores ( $M = 26.76$ ) and post-test mean scores ( $M = 22.67$ ) in the online group with regard to negative affect variable was

significant ( $p < .05$ ). Similarly, there was a significant difference in pre-test mean scores ( $M = 26.29$ ) and follow-up test mean scores ( $M = 22.67$ ) in the face-to-face counseling group.

### Discussion and Implications

The main purpose of the present study was to examine the differences between the online, face-to-face counseling groups, and the control group in terms of life satisfaction, positive and negative affect at different time points. The results showed that there were no significant differences between the three groups in terms of the main outcomes. Our findings are in line with previous studies showing that online counseling can be as effective as face-to-face counseling (Barak et al., 2008; Brown, 2012; Cook & Doyle, 2002; Knaevelsrud & Maercker, 2007; Leibert & Archer, 2006; McKenna, 1998). A possible explanation of this finding might be that a substantial proportion of university students use the Internet and computer technologies on a daily life basis (Burns et al., 2010). Online counseling, particularly videoconference counseling, can be similar to face-to-face counseling as it can improve the motivation of the counsees to continue to the sessions by providing real-time communication with the psychological counselor (Yuen et al., 2013). In addition, therapeutic alliance can also be established in the online setting (Cook & Doyle, 2002; Zeren, 2015). Therefore, online and face-to-face counseling can be perceived as similar in terms of empathy, unconditional positive regard, and self-disclosure (Cui et al., 2010). These components of counseling can be associated with the outcome of the interventions (Simpson & Reid, 2014; Zeren, 2017).

Present findings also revealed that the control group showed similar effects on the participants' life satisfaction, positive and negative affect as face-to-face and online counseling. A possible explanation might be that individuals in the control group were kept active by following the lectures on psychology-related subjects and keeping contact with the counselor. Additionally, they were told that they could receive online or face-to-face counseling in case they need help after the data collection. This period might have had a waiting-list effect which may have led to an increase in expectation of the participants in the control group, and thus, this might have had an influence on their scores on dependent variables. However, the analyses showed that follow-up scores of the face-to-face group on negative affect were significantly lower than those in the control group. This might be the evidence that short-term changes might have occurred in the control group, however, these changes did not last for a long time as compared to face-to-face counseling. Similarly, in the present study, the control group did not show significant improvements according to measures at three time-points, and a considerable number of the participants (23 out of 38) in the control group dropped out. Remained participants in the control group may have had higher motivation to continue, and they might have become convinced of the benefits of this process. The reasons for dropouts were listed as being very busy with academic tasks work or having long studying hours, lack of motivation, and the disbelief about the effectiveness of the methods used in the group. It has also been previously reported that the counsees who dropped out early particularly after the first or second session had a negative attitude towards counseling in general (Buyruk Genc et al., 2019).

The results also showed that the face-to-face group had significant improvements in positive and negative affect from the pre-test to follow-up. Negative affect scores of the counsees in the online counseling group decreased significantly from pre-test to post-test. No significant changes were found for the counsees in the control group. Although online counseling has certain advantages over face-to-face counseling (Alleman, 2002; Aygun Cengiz, 2007; Barak et al., 2009; Cipolletta & Mocellin, 2018; Chester & Glass, 2006; Cook & Doyle, 2002; Griffiths & Cooper, 2003; Joinson & Paine, 2007; Joyce, 2012; Shaw & Shaw, 2006), it has also some disadvantages such as technological limitations (Haberstroh et al., 2008; Kilroe, 2010; Tanrikulu, 2009; Zeren, 2014, 2015). Although college students in Turkey report positive attitudes towards online counseling, they also state some concerns and doubts related to online counseling such as technical limitations and privacy issues (Bacioglu & Kocabiyik, 2019). Because of these disadvantages, positive and negative affect scores might have significantly changed from pre-test to follow-up test for the face-to-face counseling group. On the other hand, only negative affect significantly changed for the online counseling group. Nevertheless, this positive change did not linger until the follow-up test. Perhaps, face-to-face communication with the counselor might cause somewhat higher adherence, and limitations of online counseling influenced long-term improvements.

### Conclusion

To the best of our knowledge, this study is the first study to examine the differences between online counseling and face-to-face counseling in Turkey. According to the findings, no significant differences were found between online counseling, face-to-face counseling, and control groups regarding life satisfaction, positive affect and negative affect. In other words, having online or face-to-face counseling or taking part in the control group did not cause any difference in the subjective well-being of the participants. This result may be interpreted as that online or face-to-face counseling are not superior to each other, and can be preferred over one another.

The increased use of the Internet by young adults may lead to high utilization of online counseling by this age group. It may be recommended to use and offer online counseling as an alternative to face-to-face counseling to reach young adults. Online counseling can also be an important way to conduct counseling sessions in emergency situations such as pandemic outbreaks. Increasing the use of online counseling requires competent counselors in the field. For this reason, adding courses about online counseling in counselor education programs or incorporating subjects about online

counseling to the contents of the existing courses can be suggested. Therefore, the findings of this research may shed light on the revision of the counselor education programs. Lastly, workshops and training programs may be organized about conducting online counseling for counselors.

Online counseling is noticeably a new subject, so there are few studies conducted on this subject in Turkey. There is an increasing need for randomized controlled trials focusing on synchronous and asynchronous ways of counseling using Internet and computer technologies for various emotional/psychological problems in different fields of counseling such as couple and family counseling or career counseling. Also, new studies may be carried out to examine the effectiveness of online counseling for those who might refrain from disclosing themselves such as HIV-infected individuals and their families, LGBTI individuals or sexually/physically abused individuals who may have a safety issue. Some individuals may benefit more from a specific counseling format. Therefore, future studies may focus on which counseling format is best for specific groups in society. With regard to this, further studies can be conducted about the counselee's satisfaction with online and face-to-face counseling, and the effect of therapeutic alliance on the treatment outcomes. Lastly, the qualitative methods may be used to determine the satisfaction level of the participants and therapeutic alliance in online and face-to-face counseling.

### Limitations

Our study is not free from limitations. First, the randomization of the participants was not fully achieved in this study, because some students had a slower Internet connection, or had difficulties in finding an isolated place to attend online counseling sessions. Therefore, we had to arrange the allocation of the counsees by assigning some of them into the face-to-face counseling group. Another limitation was the utilization of a person-centered approach in conducting counseling sessions. Conducting counseling sessions with more active approaches such as cognitive-behavioral therapy may yield different results for online and face-to-face counseling. Also, the drop-out rate was rather high in this study. The drop-out rate was especially high for the online counseling group and control group. In future studies, the effects of several strategies to increase adherence can be investigated. In addition, our findings cannot be generalized to all university students since more than half of the participants were senior students and freshmen were underrepresented in our sample. More studies are needed for the first-year students as they are still in the late period of adolescence and may struggle with adjustment issues.

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