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The Mental Toughness Levels of Athletics Coaches in Terms of Some Variables

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Abstract
The present study aims to examine the mental toughness levels of the coaches in terms of some variables who participated in the third (3rd) level athletics coaching course opened by the Turkish Athletics Federation at different times in 2021. The population of the research is 156 coaches who participated in athletics coaching courses, and a total of 141 of them are 85 men and 56 women (Age Average= 27.00±5.00). With the personal information questionnaire developed by the researcher, "Sport Mental Toughness Questionnaire-SMTQ-14" which was developed by Sheard et al. (2009) was applied. The skewness-kurtosis normality distribution test was used to determine whether the measurements were suitable for the normal distribution. According to the Skewness-Kurtosis technique, the mental toughness scale showed normal distribution for its total and sub-dimensions. According to the results of the research, it can be said that the total and sub-dimension levels of the participants' mental toughness scale are moderate. While there was no significant difference in terms of age and working time of the participants participating in the research, a statistically significant difference was found in terms of gender, place of residence, doing sport and duration of doing sports.

Keywords: Sport, Athletics, Mental Toughness

1. Introduction

Sport is a phenomenon that has been a part of human life since its existence, includes physical and mental efforts, has certain rules and gives pleasure to those who follow and do it. At the same time sports; is a field of occupation that is followed by large masses with admiration. This situation has enabled psychologists, coaches, organizations related to sports and sports fans to strive to increase success in sports. Organizations and competitions are frequently organized so that the athletes can show their performances comfortably. These events make the international effectiveness of sports feel, cause sports to be seen as a propaganda tool, and encourage the athletes to increase their performance by increasing competition (Turkmen, 2005). It is not appropriate to examine sports under a single dimension, because it is possible to divide it into different groups according to the place and time it is performed, as well as for competition and performance-oriented, healthy life, leisure time, strengthening social

ties, having a good time. For this reason, it is difficult to fit sports into a single and precise definition (Fisek, 1998).

Although there are different definitions on mental toughness, which is an important factor for the continuation of the high performance required for the athlete (Loehr, 1986), the common view on the concept is that it is an important psychological detail for success in sports. Although many definitions are made for mental toughness, in general; it is related to the ability of athletes to concentrate, to cope with pressure, to realize and not repeat their mistakes, to confront and persist with the luck factor, and to mental toughness (Bull et al., 2005; Jones, Hanton, & Connaughton, 2002; Thewell, Weston, & Greenlees, 2005). Mental resilience emerges as a necessary feature in situations such as being exposed to negativities and compelling actions during sports activities. Mental skills, which are a psychological dimension, are included in the conditions (physical performance, technical and tactical knowledge, skills, etc.) necessary to be a successful athlete. Elite athletes in almost every branch must have a high level of mental skills in order to be successful during their competitions (Gucciardi & Gordon, 2011).

Athletics is a very comprehensive sport in terms of content and requires different skills, and is divided into two groups as track and main competitions. Track competition is defined as short-middle-long distance running, walking, hurdle and flag running. Field competition consists of throws and jumps (Kuraner et al., 1979). Mental resilience is seen as a personality trait that supports harmony in people and reduces the negative effects of stress and stress in their lives (Jacelon, 1997). This personality trait is one that people can learn and develop over time. Individuals with high levels of mental resilience, that is, people who are a whole with their cognitive, affective, physical and social aspects, stick to their normal lives more and keep their own lives under control. However, these individuals are more committed to their work and see unexpected changes in their lives as opportunities for improvement. However, it is seen that people with low mental resilience are resistant to the differences they encounter in daily life, are in distancing and are focused on external control (Klag & Bradley, 2004). At the same time, mental toughness is the job of eliminating the difficulties, hindered situations and mental barriers that the athletes face during the competition and showing a high-level performance (Burton & Raedeke, 2008).

With the competition and performance in sports reaching higher levels, fine details have begun to determine the path to success and success. The possibilities of winning and losing in sports cause psychological pressure in athletes and they need to bring themselves to a state where they can feel the best in order to get rid of this pressure. For this reason, athletes have the obligation to maximize their skills and keep their performance at the highest level (Baker et al., 1990; cited in Temel, 2018). Accordingly, the importance of physical development in sports as well as mental development has emerged. In recent scientific researches, it has been emphasized that psychological factors as well as physical factors are an important factors in success and failure for athletes (Karharman, 2019). Although athletics is known as the basis of all sports, it is a very difficult sport to do at an elite level. Athletes have to struggle with many factors in this sport. While struggling, physical strength is as important as mental toughness. The mental toughness factor, which is one of the psychological factors, is of great importance in an individual and difficult sport such as athletics. Because the athletes are in a struggle with themselves and the competition track as well as with their opponent for the competition. In his/her struggle with himself/herself, his only rival may be the competition track and the second s/he ran, the length he jumped, the height s/he jumped or the distance s/he made the shot. In previous studies, positive correlations were found between the mental toughness levels of elite athletes and their achievement motivation levels. Accordingly, the level of mental toughness is important for athletes who do athletics.

2. Method

This research is a descriptive study aiming to examine the predictor of mental toughness levels of athletics coaches who participated in the third (3rd) level athletics coaching course opened by the Turkish Athletics Federation at different times in 2021, according to some variables. The descriptive method is a research method that aims to describe the existing phenomenon without the intervention of the researcher (Karasar, 1995). Descriptive studies aim to define the typical features of a certain group, to predict how people in a certain group will behave in certain situations and to make inferences on this subject (Borg - Gall, 1989). The data were collected by face-to-face interviews on the basis of randommethodsd and voluntariness.

2.1 Research Group

The research group universe consisted of 156 athletics coaches who participated in the 3rd level athletics coaching courses opened by the Turkish Athletic Federation at different times in 2021, while a total of 141 coaches, 85 of whom were male and 56 were female (Age Average= 27.00±5.00). The research scale was applied on a voluntary basis by interviewing the coaches face to face at the place where the coaching courses are held.

2.2. Data Collections

First of all, the available information about the purpose of the research is given in a systematic way by scanning the literature. Thus, a theoretical framework was formed on the subject. Secondly, the Mental Resilience Scale adapted to Turkish by Altıntas and Koruc (2016) and the information form to collect the personal information of the participants was used.
The data collection tools necessary to achieve the determined aims of the research are given below respectively.

2.2.1. Personal Information Form

In order to collect information about the personal characteristics of the participants and to create the independent variables of the research, an information form consisting of 6 (Gender, Age, etc.) items was prepared by the researcher.

2.2.2. Mental Toughness Scale

The Mental Toughness Scale developed by Sheard (2009) and adapted into Turkish by Altıntas and Koruc (2016) was used in the study to determine the mental toughness levels of coaches. The Mental Resilience Scale is a 4-point Likert -type scale consisting of 14 items. The scale has three sub-dimensions: trust (6 items), control (4 items) and continuity (4 items). Each question is given a score of 1-4 in the answer keys (Sheard, 2013; cited by Altıntas and Koruc, 2016). Internal consistency (Cronbach Alpha) reliability coefficients of this study was found .68 for confidence, .61 for continuity, .67 for control dimension and .65 for total mental toughness.

2.3. Analysis of Data

During the analysis and evaluation of the data; the data were analyzed using SPSS 25.0 for windows package program that arranged in Microsoft Excel 2003 program. Percentage and frequency methods were used to determine the distribution of personal information of the participants. The Skewness-Kurtosis (Skewness - Kurtosis) normality distribution test was used to determine whether the measurements were suitable for the normal distribution. According to the Skewness-Kurtosis technique, it did not show a normal distribution for the total positive perception and positive perception of the past tense sub-dimensions, but showed a normal distribution for the positive perception of human nature and positive perception of the self. As a result, the t-test for normal distributions and the One way – ANOVA tests were applied and POST HOCK Sheff tests were used to determine the source of the difference.

Table 1: The Skewness/Kurtosis Normality Test for the Total and Sub-Dimensions of the Mental Resilience Scale of the Individuals Participating in the Research

	Trust	Continuity	Control	Total
n	141	141	141	141
Skewness	-,054	,634	-.318	-,099
Kurtosis	-.586	,308	-.404	,690

When Table 2 is examined, it does not show a normal distribution for the total positive perception and positive perception of the past tense sub-dimensions according to the Skewness-Kurtosis technique, but it shows a normal distribution for the positive perception of human nature and positive perception of the self. In the event that the

Skewness and Kurtosis values are between -1.5 and +1.5, the relevant test scores or the group are considered to have a normal distribution (Özer & Engeç, 2015).

3. Results

3.1. Personal Characteristics of the Research Group

Data and comments on the demographic characteristics of the coaches participating in the research are given below.

Table 2: Distribution of the Sample Group Participating in the Research in terms of Demographic Characteristics

Personal Characteristics of Participants		n	%
Gender	Male	85	60.3
	Female	56	39.7
Age	Ages 22-26	54	38.3
	Ages 27-31	34	24.1
	Ages 32-36	18	12.8
	Ages 37-41	25	17.7
	Age 42 and +	10	7.1
Place of Residence	Metropole	49	34.8
	City	56	39.7
	District	24	17.0
	Town/Village	12	8.5
Working time	0-3 Years	112	79.4
	4-7 Years	17	12.1
	8-11 Years	12	8.5
Income status	Between 0 – 4500 TL	59	41.8
	Between 4501 TL – 7000 TL	47	33.3
	Between 7001 TL - 9000 TL	21	14.9
	9001 TL – and more	14	9.9
Doing Sports Status	Yes	113	80.1
	No	28	19.9
Exercise Time	none	28	19.9
	1 day per week	16	11.3
	2 days in a week	18	12.8
	3 days in a week	25	17.7
	4 days a week and more	54	38.3

The demographic characteristics of the participants were interpreted as follows. According to the gender distribution of the participants, 85 (60.3%) were male and 56 (39.7%) were female. According to age variables, 54 (38.3%) of them are in the 22-26 age range, 34 (24.1%) are in the 27-31 age range, 18 (12.8%) are in the 32-36 age range, 25 (17.7%) and 10 (7.1%) were aged 42 and over. According to the place of residence, 49 of them (34.8%) live in metropolis, 56 of them (39.7%) live in cities, 24 of them (17.0%) live in districts, and 12 of them (8.5%) live in villages and towns. According to the variable of working time of the participants, it is seen that 112 (79.4%) of them had 0-3 years, 17 of them (12.1%) 4-7 years, 12 of them (8.5%) 8-11 years working time. According to the income status variable of the participants, it is seen that 59 (41.8%) had 0 – 4500 TL, 47 (33.3%) 4501– 7000 TL, 21 (14.9%) 7001 – 9000 TL and 14 (9.9%) of them have 9001 TL and more income. In the

distribution of the participants according to the variable of doing regular sports, it was seen that 113 (80.1%) of them do sports regularly, while 28 (19.9%) do not do sports regularly. 16 (11.3%) of the participants who do sports regularly, once a week, 18 (12.8%) 2 days a week, 25 (17.7%) 3 days a week, 54 (38.3%) It was observed that ten of them had time to do sports.

Table 3: Results Regarding the Mental Resilience Levels and Sub-Dimensions of the Participants

	n	Cover.	ss	min	Max
Trust	141	19.55	2.531	13.00	24.00
Continuity	141	10.66	1,216	8.00	14.00
Control	141	10.29	2,682	4.00	16.00
Total	141	40,50	3,430	29.00	50.00

In Table3, the mental toughness score averages of the participants in general and their sub-dimensions are examined. As a result of this review; it is understood that while the average score of the total mental toughness level of the athletes participating in the research is 40.50, the average of the confidence level is 19.55, and the average of the control level is 10.29, while the continuity level averages of 10.66 are close to the medium level.

Table 4: T-test results of the Total and Sub-Dimensions of the Mental Resilience Scale by Gender

	Gender	n	$\overline{X}$	ss	sd	t	p -value
Trust	Male	85	19.85	2,509	139	1-710	,089
	Female	56	19,11	2,520			
Continuity	Male	85	10.53	1.150	139	-1.587	,115
	Female	56	10.86	1.271			
Control	Male	85	9.78	2,638	139	-2,877	,005
	Female	56	11.07	2,579			
Total	Male	85	40,15	3.421	139	-1,502	,135
	Female	56	41,03	3,406			

*p<.05

In Table 4, whether the mean scores of the mental toughness scale sub-dimensions of the coaches and their total differ according to the gender variable was examined by the t-test. As a result of the examination, the mean score of the male participants was $\bar{X}$= 9.78 and the mean score of the women was $\bar{X}$= 11.07, and a statistically significant difference was found between the control scores of women and men in favor of women (*t: -2.877 p<0 .05)*.

Table 5: F-Test Results of Total and Sub-Dimensions of Mental Toughness by Income Status of Coaches

		n	$\overline{X}$	ss	sd	F	p -value	
Trust	Between 0 – 4500 TL	59	18.80	2,571	3	3,043	,031	1-2
	Between 4501 TL – 7000 TL	47	19.85	2.511				1-4
	Between 7001 TL - 9000 TL	21	19.05	1,830				
	9001 TL – and more	14	19.78	2,778				
Continuity	Between 0 – 4500 TL	59	10.42	1,086	3	1,442	,233	-
	Between 4501 TL – 7000 TL	47	10.87	1.191				
	Between 7001 TL - 9000 TL	21	10.86	1,389				
	9001 TL – and more	14	10,64	1,393				
Control	Between 0 – 4500 TL	59	9.95	2,687	3	1,451	,231	-
	Between 4501 TL – 7000 TL	47	10.34	2,324				
	Between 7001 TL - 9000 TL	21	11.33	2,817				
	9001 TL – and more	14	10,00	3.397				
Total	Between 0 – 4500 TL	59	40,17	3,465	3	,644	,588	-
	Between 4501 TL – 7000 TL	47	41.06	3.206				
	Between 7001 TL - 9000 TL	21	40.23	3,833				
	9001 TL – and more	14	40,43	3,524				

*p<.05

In Table 5, whether the mean scores of the coaches ' mental toughness scale sub-dimensions and the total differ according to the income status variable was examined with the F test. As a result of the examination; the mean confidence score of the participants is between 0-4500 TL $\bar{X}$= 19.80, the mean confidence score of the participants is between 4501 and 7000 TL $\bar{X}$= 19.85, the trust score average of the participants is between 7001 and 9000 TL $\bar{X}$= 18.05. A statistically significant difference was found between the participants with an income of 0-4500 TL, 7001 - 9000 TL and 4501 - 7000 TL in terms of confidence scores (F:3,043). p<0.05).

Table 6: F-Test Results of the Total and Sub-Dimensions of the Mental Resilience Scale According to the Variable of Place of Residence of the Coaches

		n	$\overline{X}$	ss	sd	F	p -value	
Trust	Metropole	49	19.88	2,288	3	,864	,462	-
	City	56	19.61	2,542				
	District	24	19.17	2,959				
	Town/Village	12	18,75	2,563				
Continuity	Metropole	49	10.37	1.185	3	1,718	,166	-
	City	56	10.84	1,290				
	District	24	10,67	1.129				
	Town/Village	12	11.00	,853				
Control	Metropole	49	9.57	2,731	3	2,706	,048	1-4
	City	56	10.36	2,430				1-3
	District	24	10.96	2,956				
	Town/Village	12	11.58	2,466				
Total	Metropole	49	39,82	3,615	3	1,091	,355	-
	City	56	40.80	3.349				
	District	24	40,79	3.362				
	Town/Village	12	41,33	3,085				

*p<.05

In Table 6, whether the mean scores of the mental toughness scale sub-dimensions and the total of the coaches differ according to the variable of residence was examined with the F test. As a result of the examination; the mean control score of the participants living in the metropolis area is $\bar{X}$= 9.57, the mean control score of the participants living in the city is $\bar{X}$= 10.36, the mean control score of the participants living in the district is $\bar{X}$= 10.95, the mean control score of the participants living in the town/village is $\bar{X}$= 11.58 and in terms of confidence scores, a statistically significant difference was found between the participants living in the metropolitan city and the participants living in the district and town/village (F:2,706 p<0.05).

Table 7: T-test results of the Total and Sub-Dimensions of the Mental Toughness Scale According to the Variable of Doing Sports Status of the Coaches

	Gender	n	$\overline{X}$	ss	sd	t	p -value
Trust	Yes	113	19.88	2.412	139	3,230	,002
	No	28	18.21	2.601			
Continuity	Yes	113	10,57	1,201	139	-1,679	,095
	No	28	11.00	1,186			
Control	Yes	113	11.03	2,589	139	-2,389	,029
	No	28	10.36	2.831			
Total	Yes	113	40.49	3,625	139	-,117	,907
	No	28	40,57	2,545			

*p<.05

In Table 7, whether the mean scores of the mental toughness scale sub-dimensions and total of the coaches differ according to the variable of doing sports was examined with the t-test. As a result of the examination, the mean score of the confidence dimension of the participants who do sports was $\bar{X}$= 19.88 and the mean score of those who did not do sports was $\bar{X}$= 18.21, and a statistically significant difference was found between those who do sports and those who do not, in favor of the participants who do sports (*t:3,230 p<0.05*).
The mean score of the control dimension of the participants who do sports was $\bar{X}$= 11.03 and the mean score of those who did not do sports was $\bar{X}$= 10.35, and a statistically significant difference was found between those who do sports and those who do not in terms of control dimension scores in favor of the participants who do sports (*t:- 2,389 p<0.05*).

Table 8: F-Test Results of the Total and Sub-Dimensions of the Mental Toughness Scale by the Variable of Regular Exercise of the Coaches

		n	$\overline{X}$	ss	sd	F	p - value	
Trust	1 per week	16	18,75	3,194	4	3,300	,013	1-4
	2 per week	18	19.50	2,229				
	3 per week	25	20,28	2,685				
	4 and + per week	54	20,09	2.341				
	none	28	18.36	2,076				
Continuity	1 per week	16	11,50	1.033	4	3,617	,008	1-2
	2 per week	18	10.28	1,406				1-3
	3 per week	25	10,40	1,155				1-4
	4 and + per week	54	10,50	1.145				
	none	28	10,96	1.105				
Control	1 per week	16	10,75	2.295	4	1,390	,241	-
	2 per week	18	10,17	2.121				
	3 per week	25	9,28	2,716				
	4 and + per week	54	10.35	2,849				
	none	28	10.89	2.753				
Total	1 per week	16	41,00	2,633	4	,626	,645	-
	2 per week	18	39.94	3.621				
	3 per week	25	39,96	3,713				
	4 and + per week	54	40.94	3,872				
	none	28	40,21	2,470				

*p<.05

In Table 8, whether the mean scores of the mental toughness scale sub-dimensions and total of the coaches differ according to the variable of regular exercise was examined with the F test. As a result of the examination; confidence dimension average score of the participants who do sports once a week is $\bar{X}$= 18.75, average of the trust dimension points of the participants who do sports twice a week is $\bar{X}$= 19.50, the average trust dimension score of the participants who do sports 3 times a week is $\bar{X}$= 20.28, a statistically significant difference was found between the participants who do sports 4 or + times a week is $\bar{X}$= 20.09, and in terms of confidence scores, there is a statistically significant difference between the participants who do sports once a week and those who do sports 4 or + times a week (F : 3,300 p. <0.05).

Continuity dimension average score of the participants who do sports once a week is $\bar{X}$= 11.50, the average of the continuity dimension points of the participants who do sports twice a week is $\bar{X}$= 10.28, the average of the continuity dimension points of the participants who do sports 3 times a week is $\bar{X}$= 10.40, and a statistically significant difference was found between the participants who do sports 4 and + times a week, the mean of

continuity dimension is $\bar{X}$ = 10.50, and the confidence scores between the participants who do sports once a week and those who do sports 2, 3 and 4 times a week (F: 3.617 $p<0.05$).

4. Discussion and Conclusion

Total and sub-dimension (trust, continuity, control) score averages of the coaches participating in the study were examined. As a result of this examination, it was concluded that the total and sub-dimension levels of the mental toughness scale of the participants included in the study were at a moderate level. It can be said that the reason for this is the positive effect of sports on human psychology. When the literature is examined; in the study conducted by Demir and Türkeli (2019) on the students of the faculty of sports sciences, the fact that the mental toughness levels of the participants were above the average was made on the relationship between the loneliness levels of the American football players and the mental toughness levels in sports, and the values were higher than the average value. It is understood that the study conducted by Kurtulget et al., (2018) on basketball players is in parallel with the current study in terms of the mental toughness of the athletes at a good level in the continuity sub-dimension, the medium level in the confidence dimension, and the results of Harman's (2019) study on cyclists. It was observed that there was no significant difference in terms of age and working time of the participants participating in the study.

When the literature is examined, some studies that show parallelism with our study and some studies that do not. For example, in contrast to our study, Crust (2009) found no relationship between mental toughness and age. But, Crust et al. (2014) also stated that age is important in determining the level of mental resilience in parallel with the results of our study. Also, Marchant et al. (2009) and Nicholls et al. (2009) also states that mental toughness develops in parallel with age.

A significant difference was found in terms of gender, income status, place of residence, and duration of doing sports of the participants participating in the research. According to this; Among the coaches participating in the research, it was concluded that female participants had more mental toughness and control levels than male participants. It can be said that the reason for this is that women are supported by more people than men today. When the relevant literature is examined, it can be said that there are some studies that show parallelism with our study results or that do not. For example, in a study done by Yarayan et al. (2018), no significant difference was found between mental toughness and gender. However, there are studies in the literature that detect significant differences between the level of mental toughness in sports by gender (Farrokhi , Kashani, & Motasharei, 2011; Findlay & Bowker, 2009; Masum, 2014; Nicholls et al., 2009; Orhan, 2018; Yazıcı, 2016). Nicholls et al. (2009) reported in his study that mental toughness levels changed in favor of men. On the other hand, in his study on tennis players, Masum (2014) also mentions the mental t toughness levels that he determined in favor of men. Juan and Lopez (2015) also state that male athletes have higher mental toughness levels compared to female athletes.

According to the income level of the coaches, it was concluded that the participants with an income between ₺ 0 and 4500 had a lower level of confidence in mental resilience than the participants with an income between ₺ 7001 - 9000 and ₺ 4501 - 7000. From this point of view, it can be said that the abundance of material income is due to the fact that it has a significant impact on human life. When the literature is examined, Tekkurşun et al. (2019) on the students of the faculty of sports sciences, it is seen that there was no significant difference between exercise addiction and mental toughness levels in sports, according to the monthly income of the participants, which shows that this does not support the current study.

It was concluded that the participants living in the metropolis city had less mental toughness scale control level than the participants living in the district and town/village, according to the place of residence of the coaches. From this point of view, it can be said that the difficulty of living in a metropolitan city (in economic, social and cultural sense) has a negative effect on the mental resilience control dimension. When examining the literature, Kalkavan et al. (2020) on mountain bike athletes, it can be concluded that there was no significant difference between the mental toughness levels of the athletes depending on the environment in which they lived.

According to the coaches' doing sports variable, it was concluded that the participants who do sports have a higher level of mental toughness, confidence and control than the participants who do not do sports. It can be said that the reason for this is that sports have a positive effect on people's lives, as in everything else. When the literature is examined, no study has been found that examines the relationship between mental toughness and whether or not to do sports.

According to the variable of the frequency of doing sports of the coaches, it was concluded that the participants who do sports 3 days a week have a higher level of confidence in mental toughness than the participants who do sports 1 day a week. Therefore, the frequency of doing sports plays an important role in terms of positive perception. In terms of continuity, it is seen that the participants who do sports 1 day a week have more mental toughness than those who do sports 2, 3 and 4 days a week. It can be said that the reason for this is that doing more sports has a negative effect on the continuity of mental toughness. Again, when the literature is examined, it is seen that some studies support the current study and some do not. For example, Tekkursun et al. (2019) on the students of the faculty of sports sciences, it was determined that the mental toughness level of the participants in sports differed significantly according to the regular sports status. Accordingly, while it was not in parallel with the current study in the "Continuity" dimension, it was found that the mean scores of those who did not do regular sports in the "Control" sub-dimensions were significantly higher than those who did regular sports, which was in parallel with the current study. Crust (2009) stated that there is no significant relationship between mental toughness and sports experience. On the other hand, Nicholls et al. (2009) and Connaughton et al. (2008), it was found that mental toughness differs significantly in terms of sports experience.

5. Suggestions

In this section, suggestions developed according to the results of the research and the experiences gained by the researcher are given. The correlation or the effect of the mental toughness levels of the coaches who are coaching in various branches can be examined.

5.1. Suggestions for Future Research;

The mental toughness levels of coaches working in various branches were examined.

- It can be done to different sample groups.
- The research can be expanded and applied to a larger sample group.
- With different data sources such as interviews and observations, the validity of the research can be ensured and a richer information can be obtained.

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