

Characteristics of the Japanese National Team of the First Youth Olympic Games

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Abstract

Objective: To investigate the change in young elite Japanese athlete's attitudes during the Youth Olympic Games (YOG) in 2010.

Design: Survey study.

Setting: 2010 YOG, Singapore.

Participants: Data were collected from individual surveys completed by 57 athletes selected for the Japanese national team.

Main outcome measures: Main outcome measures were change in athlete's awareness of the equal emphasis on sport, culture, and education and athlete understands of anti-doping education.

Results: A total of 57 athletes agreed to participate in this study, Twenty-five respondents indicated that their main route of entry into their competition sport was family members who played the sport. Thirty-one respondents indicated that fun upon winning the game was their primary motivation for continuing to participate in the sport and 42 respondents stated that a good result in the competition was the main types of satisfaction gained from participation.

Conclusions: The results revealed the influences for taking up sports among young elite athletes on the Japanese national team competing at the Singapore YOG in 2010. The findings indicated that athletes were originally influenced by their parents. Lastly, the attitude of the Japanese athletes was significantly broadened through participation in the YOG.

Keywords: Youth Olympic games; Elite athletes; Anti-doping education; Characteristics; Olympic education

Introduction

The inaugural Youth Olympic Games (YOG) were held in Singapore from August 14 to 26, 2010. The Games accommodated 3,600 athletes aged 14-18 years across 26 sports. The goal of the Olympic Movement is "to contribute to building a peaceful and better world by educating youth people through sport practiced in accordance with Olympism and its values" [1]. The YOG are a realization of that statement, and aims to bring talented young athletes together as part of its greater vision of inspiring young people around the world to participate in sport and to adopt and live within the Olympic values. It is a world-class multi-sport event that integrates various cultural activities through its Culture and Education Program (CEP) in addition to its athletic activities [2,3]. Professor Jigoro Kano, who developed judo from jujutsu, similarly expressed an opinion on the relationship between judo and education. He too, emphasized the importance of education through sports [4-6].

This study focuses on a number of aspects of the YOG and its impact on the members of the Japanese YOG national team. The following topics are covered in this research: the nature of athlete's entry into sport and age at which participation in their competition sport began; their motivation for continuing in the sport and the types of satisfaction gained from participation; the types of positive outcomes experienced from participation in the sport; the existence of role models and their influence; the nature of sacrifices made to compete at the junior elite level; the source, content, and perceived importance of the anti-doping education program; and their reasons for competing at the YOG. The importance of elements of the anti-doping education programs is

ethical and health related knowledge and technical knowledge seen as the important impression on anti-doping education program to the elite athletes. Environment is apparent surrounding junior athletes have experienced a Japanese sports and education from the characteristics of the Japanese national team of the first Youth Olympic Games.

Methods

In the 1st YOG, 25 male and 46 female athletes participated as part of the Japanese national team; of them, 23 male and 34 female participants completed a questionnaire (Table 1).

Participants

The protocol was revised and approved by the Ethics Committee on Human Research of Waseda University. The participants included in the study consist of 23 boys (mean age 16.74 years, SD = 0.75) and 34 girls (mean age 16.26 years, SD = 1.11). These 57 young elite athletes were selected from the Japanese national team, which competed at the

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	Male		Female		Total	
	n	%	n	%	n	%
Athletics	8	34.8	7	20.6	15	26.3
Aquatics	4	17.4	4	11.8	8	14.0
Archery	1	4.3	1	2.9	2	3.5
Badminton	1	4.3	2	5.9	3	5.3
Basketball	0	0.0	4	11.8	4	7.0
Cycling	2	8.7	1	2.2	3	4.3
Gymnastics	2	8.7	6	17.6	8	11.6
Judo	1	4.3	1	2.2	2	2.9
Rowing	0	0.0	1	2.2	1	1.8
Sailing	1	4.3	1	2.2	2	2.9
Table tennis	0	0.0	1	2.2	1	1.4
Tennis	1	4.3	2	4.3	3	4.3
Triathlon	1	4.3	1	2.2	2	2.9
Wrestling	1	4.3	1	2.2	2	2.9
Weightlifting	0	0.0	1	2.2	1	1.4
Total	23	100.0	34	100.0	57	100.0

Sports subjects are categorized based on the sport events featured in the Singapore 2010 Youth Olympic Games

Table 1: Categorization of sports subjects.

Stage	Stage Description	Chronological/Developmental Age	Chronological Age	Developmental Age	Key Characteristics
Stage 1	Active Start	Chronological Age	0-6	0-6	- Focus on learning proper movement skills such as running, jumping, wheeling, twisting, kicking, throwing and catching - Active movement environment combined with well-structured gymnastics and swimming programs.
Stage 2	Fundamentals	Chronological Age	6-9	6-8	- ABC's of athleticism: agility, balance, coordination and speed - ABC's of Athletics: running, jumping, wheeling and throwing
Stage 3	Learning to Train	Chronological/Developmental Age	9-12	8-11	- Introduction to mental preparation - Integrated mental, cognitive and emotional development
Stage 4	Training to Train	Chronological/Developmental Age	12-16	11-15	- Major fitness development stage: aerobic and strength - The onset of Peak Height Velocity (PHV) and PHV are the reference points - Peak Strength Velocity (PSV) comes a year or so after PHV (at the age of 13) - Develop mental preparation
Stage 5	Training to Compete	Chronological/Developmental Age	16-23+/-	15-21+/-	- Advanced mental preparation - Sport, event, position-specific physical conditioning - Sport, event, position-specific tactical preparation
Stage 6	Training to Win	Chronological Age	19+/-	18+/-	- Maintenance or improvement of physical capacities - Further development of technical, tactical and playing skills
Stage 7	Active for Life	Enter at any age			- Move from highly competitive sport to lifelong competitive sport through age group competition. - Minimum of 60 minutes moderate daily activity or 30 minutes of intense activity for adults.

Long-Term Athlete Development, Canadian Sport for Life center, Resource Paper v2

Table 2: The seven stages of long-term athlete development.

2010 YOG in Singapore. The surveys were carried out before and after the games, following receipt of an agreement of informed consent from the candidates.

Because the members of the women's volleyball team were not junior national level, they are not included in this study.

Quantitative method

The questionnaire was composed of 12 pre-competition items (12 multiple-choice items, 1 free-response question) and 1 post-competition items (all multiple-choice items). The questionnaire's items addressed motivation and sports, anti-doping, and the significance to participants of participating in the YOG.

Statistical analysis

Boys' and girls' responses were compared using the chi-square test, calculated using IBM SPSS Statistics version 17.0 for Windows. Statistical significance was set at $P < 0.05$.

Age categories

The age category at which participation in athlete's competition sports began is discussed on the basis of long-term athlete development (LTAD) which is "based on the physical, mental, emotional, and cognitive development of children and adolescents" (The Canada Sport Centres, 2010: 7). The LTAD focuses on "the general framework of athlete development with special reference to growth, maturation and development, trainability, and sport system alignment and integration". Following a Canadian model of LTAD, which is divided into seven stages in terms of age and gender, the main points of seven stages are described. In terms of the age at which participation in their competition sports began, we can divide three groups: those who began their athlete's lives aged under 6, between the age of 6 and 10, and aged over 10 (Table 2.) [7].

Anti-doping items

The open-ended responses to the themes which were perceived

	Male	Female	Total
	n	n	n
A) Your family was playing the sport	9	16	25
B) Recommended by your family	6	5	11
C) Recommended by your friends	2	6	8
D) Start at school or sports club	3	3	6
E) There were facilities or sports clubs near by	5	8	13
F) Inspired by watching a game	4	5	9
G) Others	0	5	5

Pre Questionnaire 1.-1) What made you start your sports? (Multiple choices allowed)
The mean difference between boy's and girl's responses was not significant

Table 3: The nature of the route into sport.

Categorization of sports	Under 6	Form 7-8y	Form 9-10y	Form 11-12y	Form 13-15y	Form 16-18y	Others	Total
Athletics (M)	1	1	2	1	3			8
Athletics (F)	2	1	1		3			7
Aquatics (M)	3	1						4
Aquatics (F)	3	1						4
Archery (M)					1			1
Archery (F)			1					1
Badminton (M)		1						1
Badminton (F)		1	1					2
Basketball (F)		1	2	1				4
Cycling (M)	2							2
Cycling (F)			1					1
Gymnastics (M)	2							2
Gymnastics (F)	4	2						6
Judo (M)	1							1
Judo (F)	1							1
Rowing (F)						1		1
Sailing (M)				1				1
Sailing (F)					1			1
Table tennis (F)		1						1
Tennis (M)		1						1
Tennis (F)	2							2
Triathlon (M)								1
Triathlon (F)			1					1
Wrestling (M)			1					1
Wrestling (F)		1						1
Weightlifting (F)		1						1
	21	16	16	5	10	1		57

Table 4: The age at which participation in their competition sport.

as being important in the anti-doping education session received were analyzed and deemed to fall into one of the following four major categories: ethical and health-related knowledge (side effects, moral principles, reasons to not dope); technical knowledge (how testing is done, how to avoid violation, prohibited substances, attention to contents); implications of failure to comply (sanctions, reasons athletes dope); and the impact of doping on performance.

Results

Nature of athlete's entry into sport

Regarding the nature of the route by which athletes became involved in their sport, 25 respondents indicated that members of their family played the sport and 11 indicated that the sport was recommended to them by their family. In total, 36 of the 57 athletes shared this viewpoint that family was the most influential factor for them in becoming athletes. In the multiple-choice section, 8 athletes indicated that the sport was recommended by their friends and 6 indicated that they started at school or a sports club. Furthermore, 13 athletes said that

there were facilities or sports clubs nearby and 9 answered that they were inspired by watching the sport (Table 3).

Age at which athletes began participating in their competition sport

The earliest group of athletes began practicing their sport at below age 6. These athletes were involved in aquatics, cycling, gymnastics, judo, and tennis. The gender and sports of the respondents were as follows: both boys and girls in aquatics; boys in cycling; boys and girls in gymnastics; boys and girls in judo; and girls in tennis. Athletes who began practicing their sport between age 6 and 10 were involved in athletics, archery, badminton, basketball, cycling, table tennis, tennis, triathlon, wrestling, and weightlifting. More specifically, the respondents' gender and sports were as follows: girls in athletics; girls in archery; boys and girls in badminton; girls in basketball; girls in cycling; girls in table tennis; boys in tennis; boys and girls in triathlon; boys and girls in wrestling; and girls in weightlifting. Sports began at over age 10 were athletics, archery, basketball, rowing, and sailing. More specifically, the respondents' gender and sports were as follows: boys

	1st		2nd		Total	
	Male	Female	Male	Female	Male	Female
A) It is fun to win the game	7	15	6	3	13	18
B) Aiming for the best	4	6	1	8	5	14
C) Want to participate in the world championships and the Olympic Games.	9	5	7	9	16	14
D) To get on a scholarship	1	0	0	1	1	1
E) Make friends or to meet variety of people	1	2	6	9	7	11
F) To make people who support me happy	1	4	3	2	4	6
G) Been told by my family/coach to continue	0	0	0	0	0	0
H) Others	0	1	0	1	0	2
Total	23	33	23	33	46	66

Pre Questionnaire 1.-3) Why do you continue playing your sport?

The mean difference between boy's and girl's responses was not significant

Table 5: Their motivation for continuing to participate in the sport.

	1st		2nd		Total	
	Male	Female	Male	Female	Male	Female
A) Good result at the game	17	21	2	2	19	23
B) No matter what results are, you performed to your best	2	8	2	5	4	13
C) You performed to the level where your coach expected you to do	0	0	6	3	6	3
D) To beat your rival	2	1	5	2	7	3*
E) To make people around me happy	1	3	5	11	6	14
F) Been able to make friends through competitions	1	0	0	10	1	10*
G) Others	0	0	0	0	0	0
Total	23	33	20	33	43	66

Pre Questionnaire 1.-4) What makes you feel good about yourself as being an athletes?

n=66 *p<0.05

Table 6: The types of satisfaction gained from participation.

	1st		2nd		Total	
	Male	Female	Male	Female	n	
A) Become mentally stronger	11	26	6	2	45	
B) Make friends and travel together	6	3	6	21	36	
C) Become more polite	6	3	7	8	24	
D) More communication with your family	0	0	0	1	1	
E) Receive praise from people around you	0	0	1	0	1	
F) Become fitter	0	0	2	0	2	
G) Others	0	1	0	0	1	
Total	23	33	22	32	110	

Pre Questionnaire 1.-5) What are the positive things about playing your sports?

The mean difference between boy's and girl's responses was not significant

Table 7: The type of positive outcome experienced from participation in the sport.

and girls in athletics; boys in archery; girls in basketball; girls in rowing; and boys and girls in sailing (Table 4).

Athlete's motivation for continuing in their sport

Regarding their motivation for continuing to participate in the sport, 31 respondents indicated that they participating because they enjoyed competing and winning, 19 that they were aiming to be the best they could, 30 that they wanted to participate in world championships and the Olympic Games, 2 that they wanted to receive a scholarship, 18 that they thought they could make friends and meet a variety of people through sports, and 10 that they wanted to make the people who support them happy (Table 5).

Types of satisfaction gained from participation

The mean difference between boys' and girls' responses was statistically significant at the 0.05 level.

The answer "a good result at the competition" was indicated by 42 respondents, representing a majority of the total. The second-largest

number, 20 respondents, chose "to make people around me happy". The remaining answers were indicated by a similar number of athletes: 17 respondents indicated "doing one's best, no matter the outcome"; 9 indicated "performing in line with the coach's expectations"; 10 respondents indicated "beating a rival"; and 11 respondents indicated "being able to make friends through competition" (Table 6).

Types of positive outcomes experienced from participation in the sport

The majority of athletes chose "becoming mentally stronger" (45 respondents), "becoming more polite" (24 respondents), and "making friends and traveling together" (36 respondents). Only 2 athletes responded "becoming physically fitter", and only 1 respondent each answered "improving communication with family" and "receiving praise from surrounding people" (Table 7).

Existence of role models

52 of the 56 athletes (92.9%) who participated in the YOG

	Male	Female	Total	%
Yes	22	30	52	92.9
No	1	3	4	71.0
Total	23	33	56	100.0

Pre Questionnaire 2.-2) Do you have a role model athlete?
The mean difference between boy's and girl's responses was not significant

Table 8: The existence of role models.

	Male	Female	Total	%
A) Family	4	5	9	15.8
B) Coach	6	9	15	26.3
C) Doctor or trainer	0	1	1	1.8
D) Friends	0	5	5	8.8
E) Your rival	4	6	10	17.5
F) Role model athlete	8	6	14	24.6
G) Animation or character of TV	0	0	0	0.0
H) Others	1	2	3	5.3
Total	23	34	57	100.0

Pre Questionnaire 2.-1) Who influences you the most when you are playing your sport? (only one)
The mean difference between boy's and girl's responses was not significant

Table 9: Their influence when they are playing their sport.

	Male	Female	Total	%
Yes	21	30	51	89.5
No	2	3	5	8.8
N/A	0	1	1	1.8
Total	23	34	57	100.0

Pre Questionnaire 2.-3) Do you have anything to cut down in your life to become an athlete?
The mean difference between boy's and girl's responses was not significant

Table 10: The nature of sacrifices made to be able to compete at the junior elite level.

	1st		2nd		Total	
	Male	Female	Male	Female	Male	Female
A) Meal (Because you have to lose weight for a competition)	3	10	3	0	6	10
B) Play with your friend	13	10	3	10	16	20
C) Fashion or Hairstyle	0	3	6	3	6	6
D) Study hours	1	1	0	1	1	2
E) Spend time with your family	2	4	1	5	3	9
F) Attendance at your school	0	1	3	1	3	2
G) Others	2	0	1	3	3	3
Total	21	29	17	23	38	52

Pre Questionnaire 2.-3-1) Which you have cut down to become an athlete?
The mean difference between boy's and girl's responses was not significant

Table 11: The nature of sacrifices made to be able to compete at the junior elite level.

responded that they had an athlete role model and 4 responded that they did not (Table 8).

Influence when playing their sport

Nine athletes (15.8%) answered that family influenced them the most while they were playing their sport, while 5 (8.8%) answered that friends influenced them the most. However, 15 (26.3%) responded that their coaches were the most influencing factor and 1 athlete indicated their doctor or trainer. Other responses were "a rival" (10 athletes, 17.5%), "athlete role models" (14 athletes, 24.6%); and "a television character", (3 athletes, 5.3%) (Table 9).

Nature of sacrifices made to be able to compete at the junior elite level

Table 10 shows that 51 respondents (89.5%) felt they had made sacrifices to compete at the junior elite level and 5 respondents (8.8%) did not. "Playing with friends" was the answer given by the majority (36) of respondents. "Meals (due to the need to lose weight for competition)" was given by 16 respondents, "time with family" was each given by 12 respondents. Furthermore, 12 respondents cited "fashion or hairstyle"; 3 respondents, "study hours" and 5 respondents, "school attendance" (Table 11).

Source, content, and perceived importance of elements of the anti-doping education program

21 respondents stressed ethical and health-related knowledge, 12 stressed technical knowledge, 6 stressed the implications of failure to comply, and no respondents stressed the impact of doping on performance, as shown in (Table 12).

Athlete's main reason for competing in the YOG

Before participating in the YOG, 40 respondents answered that their main purpose was to win the games; 21 respondents, to compete fairly; 36 respondents, as a step toward the Olympic Games; 30 respondents, to meet athletes from all over the world; 22 respondents, to participate in sport and cultural activities simultaneously; and 23 respondents, to enjoy participating in the competition.

After participating in the YOG, 15 respondents answered that their main purpose was to win the competition, 20 respondents, to compete fairly; 42 respondents, as a step toward the Olympic Games; 30 respondents, to meet athletes from all over the world; 31 respondents, to participate in sport and cultural activities simultaneously; 31 respondents, to enjoy participating in the games; and 8 respondents, "other" (Table 13).

	Male	Female	Total
	n	n	n
Impact of doping on performance	0	0	0
Implications of failure comply	2	4	6
Technical knowledge	5	7	12
Ethical and health related knowledge	9	12	21
Total	16	23	39

Pre Questionnaire 3.1)-1 What element of the anti-doping session/ lectures left the most important impression?
The mean difference between boy's and girl's responses was not significant

Table 12: Source, content, and perceived importance of elements of the anti-doping education program.

	Pre	Post
A) To win the game	40	15
B) To compete fairly	21	20
C) Step towards the the Olympic Games	36	42
D) To meet many athletes from all over the world	30	30
E) To be able to participate in your sport and meny cultural activities at the same time	22	31
F) To enjoy yourself by participating the games	23	31
G) Others	0	8

Post Questionnaire 1. What is your main reason to compete at YOG ? (Multiple choices allowed)
The mean difference between Pre and Post responses was not significant

Table 13: What is your main reason to compete at YOG.

Discussion

The surveys were conducted before and after the YOG and a total of 57 young athletes belonging to the national team, in 15 different categories of sports, participated, 23 of whom were male athletes and 34 of whom were female athletes. The questionnaires consisted of 12 questions and were divided into 7 categories as follows.

Nature of athlete's entry into sport and the age at which participation in their competition sport began

Question Pre1-1 "What made you start your sport?" and Question Pre1-2, "When did you start your sport?" will discuss nature of the athlete's entry into sport and the age at which participation in their competition sport began, respectively. Although this implies that athlete's friends and school have some influence, access to facilities is one of the most influential factors for athletes to begin practicing their sport. Therefore, family support and recommendation as well as access to facilities are seen as the most powerful component of athlete's entry into sport [8,9].

The age at which participation in athlete's competition sports began is discussed based on the categories used by the LTAD of Canadian Sport for Life. The earliest age group, those who started their sport at under age 6 years, was reported by 22 athletes. These sports probably require that athletes have agility, balance, coordination, and speed, which are fundamental abilities as defined by the ABCs of Athletics. This categorization also contains running, jumping, wheeled movement (for para sports), and throwing [7].

The second group comprises athletes who began their sports between ages 6 and 10. Most athletes in this group joined team sports, which use equipment. The fact that most athletes who joined team sports that use of equipment usually begin their sports at this age may imply that, this age range between 6 and 10 years is the earliest athletes are normally able to acquire the skills and strategy for understanding how to play such team sports.

The last group comprises athletes who began their sports at over age 10. The athletes practicing these sports probably were expected to possess prerequisite knowledge, such as on water safety, and high skills for utilizing more complicated equipment before they could begin the sport.

Nature of athlete's entry into sport and the age at which participation in their competition sport began is greatly affected by their family and close person and environment around the athletes.

Athlete's motivation for continuing in their sport and the types of satisfaction gained from participation

The second category deals with two factors, the motivation for continuing a sport and the types of satisfaction gained from participation. Question Pre1-3, which asked "Why do you continue playing your sport?" examined motivation for continuing to participate and Question Pre1-4, "What makes you feel good about yourself as an athlete?" examined the relationship with the types of satisfaction gained from participation.

Both questions that the results of athlete's performance can be an important element to make athletes feel good about themselves. Also I think the relationship between the target and the games has a significant impact of Athlete's motivation for continuing in their sport and the types of satisfaction gained from participation.

Types of positive outcomes experienced from participation in the sport

Through Question Pre1-5, which asked "What are the positive aspects of playing your sport?" the young athletes showed their internal development, such as improvement in their personality or attitude toward their competitors, through participation in the event. Athletes tend seeking spiritual growth from participation in the sport.

The existence of role models and their influence

The presence of role models plays an important role for young athletes in establishing themselves and they are strongly influenced by their coaches in terms of playing their sport [10]. The influences has a great impact on children's choices of heroes and role models [11]. This tells us that having a role model strongly motivates and influences young athletes, such as those in this survey. I considered players strong influenced by their coaches and the role model athletes.

Nature of sacrifices made to be able to compete at the junior elite level

In this category, the athletes were asked "Is there anything you had to cut down in your life to become an athlete?" Fifty-one respondents (89.5%) answered "yes", the majority (36) of whom specified that they had to cut down on playing with friends. Athletes in the present study were aged 14-18 years, and youths of this age generally want to play with their friends. Many athletes have cut down to ensure the practice time.

Source, content and perceived importance of the anti-doping education program

Supplements were used for health and well-being by 62.7% of the respondents of the Japanese national YOG team [12]. The use of supplements among athletes is widespread [13,14]. The Japanese national high school curriculum for 2013 includes anti-doping education. Students learn the values of athletics and the basic principles of anti-doping. The curriculum increase the appreciation of athletic values in Japanese society and promote anti-doping activities [15]. The YOG are an opportunity for young athletes to understand for themselves, to discover the social significance of sport, and to learn about fair play through anti-doping education. Of the 39 respondents, 21 stressed ethical and health-related knowledge and 12 identified technical knowledge of anti-doping, for example how testing is done, as being the most significant elements of the anti-doping session. Only 6 respondents stated negative elements as having been emphasized, namely the implications of failure to comply. No respondents responded that the impact of doping on performance had been emphasized. Japan Anti-doping Agency (JADA) opened sports pharmacist system in 2010. Pharmacists are experts in prohibited substance and advice athletes, and to join in the cause against doping [16].

Reasons for competing

This study aimed to identify any change of young athlete's attitude on sport pre- and post-YOG, and there were some changes in young athlete's attitude. Before participating in the YOG, athlete's major aim was to win competitions, while after participating, their aim changed specifically to taking a step closer to the Olympic Games.

Conclusion

This research was aimed at identifying the impact of the YOG on the members of the Japanese national team and contains data from 57 Japanese athletes who participated in the YOG. Concerning the

nature of the route into sport and the age at which participation in their competition sport began, friends and school can be influential to the athletes but accessibility to facilities remains a crucial factor. Three groups of respondents implied that the starting age of athletes can be based on the characteristics of the sports being practiced.

The results revealed what athletes experience or learn through sports competitions, the importance of role models to them, and the impact of the role model as a target of the athlete's dream. Even though athletes made sacrifices for the sake of their sports, they perceived themselves as becoming mentally stronger and having more respect for others as a result of taking part in the sports competitions.

Before the YOG, respondents suggested that winning was the most important factor, but their commitments after participating in the YOG was primarily to go forward toward participating in the Olympic Games. This suggests that the attitude of the Japanese athletes was significantly influenced by participation in the YOG, with a greater commitment to future participation in sports at the Olympic level.

Implications for future research

This study suggests that in the future, more systematic and comprehensive investigations on youth athlete education programs, going beyond just the Japanese team, will be needed. This will allow comparison of those athletes participating in different sports, of those who won medals and those who did not, age cohorts, gender and country/continent of origin. It may also allow education of the application of anti-doping regimes to be undertaken across a broader spectrum in different national contexts.

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