Patterns and Predictors of Children's Gender-Typed Preferences of Toys

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Abstract

Focusing on social learning and cognitive developmental theories, this study pursued whether children have gender-typed preferences of toys, and also to what extent the variability of children's preferences of toys can be determine by age, gender and social and economic status (SES). 256 children aged between 4 and 10 years old with the age mean 7.23 were selected randomly. Results revealed that children had clear gender-typed recognition and preferences for some toys. This preference was independent of biological gender factor. This study also revealed some dramatic changes in children's responses; that is, through growing up, children gradually prefer some toys as neutral not gender-related toys. This dramatic change was different for each toy.

Keywords: Gender-typed preferences of toys, Predictors of preferences of toys, Gender-awareness, Patterns of children's preferences of toys, Logistic Regression

Introduction

Between first and third years of life, two significant cognitive systems including subjective and objective appear. These systems are the results of children's development of a sense of themselves distinguishing from those surrounded them (Levine & Conway, 2010). Using terms "*I*" and "*Me*" (e.g., "I don't need", "I want that", "I do it by myself", "Me too") in spoken language and developing a symbolic thought, children become able to conceptualize the 'self' (Santrock, Mackenzie, Leung & Malcomson, 2005; Gillibrand, Lam & O'Donnell, 2011; Levine & Conway, 2010). Through understanding of self and others, 'mine' and 'not yours' become

correspondent to ‘me’ and ‘not you’ (Levine & Conway, 2010: 456) which both pronouns reveal the development of self and its major components such as self-awareness, self-control, self-appraisal, self-regulation and others (Gillibrand et al., 2011; Levine & Conway, 2010; Vallotton, 2008; Montirosso, Cozzi, Tronick, & Borgatti, 2012).

Among these components, self-awareness is a unique component, which is the recognition that we are different from others based on our own physical and mental capacities and physical characteristics (Corsini, 1999; Gillibrand et al., 2011). One of the major elements that makes this self-awareness possible is ‘gender-awareness’; that is, children become able to recognize their genitals and to develop a perspective of the acceptance of being boy or girl. As children grow up through different cognitive, biological and affective stages, gender-awareness is profoundly developed and become consistent. This gender consistency is the recognition of gender despite changes in physical appearances such as ‘you are still girl if you have short hair’ (Bornstein, Arterberry & Mash, 2011; Gillibrand, et al., 2011) and regardless of different cultural preferences. Focusing on cultural context, it was argued that culture may have influences on the form of expressing or exhibition of gender identity and gender appropriate traits (Emolu, 2014), but the gender awareness, as a cognitive characteristic, is less culture-based (Owen Blakemore, Berenbaum & Liben, 2009). Hence, there may be no differences between Canadian and Iranian children in gender awareness, but their gender preferences (e.g., gender-typed preferences of toys) or gender appropriate traits are more culture-based. However, both gender awareness and gender-typed preferences occur through some developmental stages.

Stages of gender-awareness

Children at early months of their birth may recognize and distinguish their father from their mothers as a primary signs of gender-awareness (Gillibrand et al., 2011), but they may have difficulty in appreciation of gender faces when individuals’ appearances such as hair and clothing change (Bornstein et al., 2011). However, children construct their appreciation of gender at the first stages of development manifesting clearly at 2 years of age. By 2 years of age, they are able to recognize and define themselves as ‘girl’ or ‘boy’ (Freeman, 2007; Owen Blakemore, et al., 2009; Santrock et al., 2005). From 2 to 5 years of age, they quickly understand how to behave, think, and manage their desires based on gender. They learn how to categorize ‘girl toys’ and ‘boy toys’ which this ability represents their gender-typed perception and preferences (Freeman, 2007; Owen Blakemore, et al., 2009; Aina & Cameron, 2011; Hupp, Smith, Coleman, & Brunell, 2010).

Freeman (2007) found that this categorization and recognition of gender-typed toys is independent to children's gender characteristic; that is, both boys and girls could recognize the gender-typed toys (Freeman, 2007). From 5 to 10, within pre-school environment and school time, they develop their gender stereotype and schema which is characterized by their gender-typed preferences of toys and play and other related behaviors (Freeman, 2007; Owen Blakemore et al., 2009; Aina & Cameron, 2011; Hupp, Smith, Coleman, & Brunell,2010; Santrock et al., 2005; Gillibrand et al., 2011).

Developmental patterns of preference

The above noted stages crystalize some patterns through which children show their stability, consistency, and continuity of gender perception and gender stereotype that can be recognized by measuring their gender-typed behaviors, gender-typed understanding or preferences of toys and play (Owen Blakemore et al., 2009; Hong, Hwang & Chi Peng, 2012). It seems that the more growing up, the more stability in gender-typed preferences of toys and play. However, young children may not be able to determine gender perception because they may not yet have achieved gender consistency as well as adults (Bornstein et al., 2011). As soon as they achieve the gender consistency, their preferences in choosing toys and play become clearer. Studies revealed that there are relatively obvious patterns not only in gender-typed play (Hughes, 1991; Frost, Worthman, & Reifel, 2001; Hong, Hwang, & Chi Peng 2012), but also in gender-typed preferences of toys (Freeman, 2007; Aina & Cameron, 2011).

In one study, it was found that children's gender-typed preferences can be almost observed at early months of life, and this preference is independent to toys' appearances such as colors or shapes (Jadva et al., 2010). It was argued that these gender-typed preferences may "reflect inborn tendencies for girls and boys to prefer different toys" (Jadva, Hinse & Golombok, 2010: 1269). However, cognitive developmental processes related to gender revealed that children at early months of life do not have clear understanding of gender (Bornstein et al., 2011). Also, Hughes (2010) argued that even children who are under five years old show a mixed gender-typed preference of toys and play. Thus, children's gender-typed preferences of toys have not been clearly differentiated during the early years of life. A boy or a girl may play with each other regardless of gender-typed preference of toys; that is, a boy may play with doll and a girl may play with gun machine or train. In these years, children show gender-neutral preferences of toys and also play. This preference changes as soon as they reach at five years of age and older.

Regardless of early years of development, as children grow up (after 5 and during the late childhood), their gender-typed preferences of toys and

behaviors in play become more differentiated (Cherney, Kelly-Vance, Glover, Ruane, & Ryalls, 2003; Owen Blakemore, et al., 2009). The clearest preferences of toys and play can be seen when children reach at late childhood and early adolescence (Fridell, Owen-Anderson, Johnson, Bradley & Zucker, 2006; Owen Blakemore et al., 2009). However, there are some differences between girls and boys in their preferred games (Hong et al., 2012) and toys (Owen Blakemore et al., 2009). These differences can be argued by focusing on different gender theoretical frameworks.

Gender theories and toy preferences

Most gender theories such as gender schema theory (Carter & Lcvy, 1988; Diesendruck & Perez, 2015), social learning theory (Emolu, 2014), cognitive development theory (Aina & Cameron, 2011; Emolu, 2014; Owen Blakemore et al., 2009) demonstrated some developmental stages and different patterns between children's gender-typed preferences of toys through experimental studies. However, each theory has its own justifications about how gender-typed preferences of toys are developed and how this understanding or preference represents the gender identity. These theories also revealed various factors that influence children's gender typed preferences of toys. For gender developmental theorists, who emphasize gender as a learned and cognitive concept (Aina & Cameron, 2011), play materials (toys) have main role in children's perceptions of gender and sex-typed behavioural patterns since the materials affect children's cognitive skills (Owen Blakemore et al., 2009; Emolu, 2014). Kohlberg (1966 cited in Owen Blakemore et al., 2009) as a cognitive developmental theorist believed that children's cognitive understanding of gender will increase their gender stereotyped behaviors. Alignment with this theory, gender schemas theorists argued that each person has two different but integrative schemas including general schema and own-sex schema that are constructed through individuals' experiences contextually (Carter & Lcvy, 1988; Emolu, 2014). The content of these schemas develops based on cognitive skills and individual experiences, which determine what gender-typed toys are preferred to have or play. Regardless of gender schema theory in which contextual experiences are important, social learning theory of gender argue that parents' feedbacks or interactions are typical reinforcement influencing children's gender-typed preferences of toys and their gender identity development (Emolu, 2014; Jadva, Hines & Golombok, 2010; Bornstein & Lamb, 2011).

Based on this theory, children's preferences of sex-typed toys are under extreme influences of parents' behaviors and social factors that provide an opportunity of socialization. The process of socialization, which is "a process by which human begins incorporate the social norms pertaining

to certain culture or cultural group…" (Emolu, 2014, p. 22), needs a close interaction with cultural norms and standards that are embedded in different objects (e.g., toys for children). Parents, who are the main source of cultural norms, influence children's preferences of toys affecting their gender identity. In her study, Freeman (2007) found that 5-year-olds children have a clear and rigid gender stereotype. These children preferred playing with toys that their parents approve gender-typed appropriately. Based on Freeman's (2007) research, it is assumed that family has main role in children's gender-typed preferences of toys and also in their gender-identity development.

In addition to this factor, there are some other determinants that demonstrate how children's gender-typed preferences of toys are shaped.

Determinants of children's preferences

Regardless of toys' apparent characteristics such as color or shape, and alignment with Freeman's findings, one of the most influential factors in children's preferences of toys is parents' encouragement or discouragement, and their approval or rejection (Kane, 2006; Aina & Cameron, 2011). The terms 'real girl' and 'real boy' determine what roles family approve for their children's gender-typed preferences of toys. These roles can be seen even in Canadian families, which live in a modern-liberal country, from the first days of decorating children's rooms by gender-typed toys showing a tendency to differentiate boys' rooms from girls' room (Auster & Mansbach, 2012). It is also demonstrated that children prefer to choose those toys to have or to play that their parents have approved (Freeman, 2007). However, some children may show gender-neutral preferences of toys and play (Hughes, 2010).

Factors influence children's preferences of toys are not limited to family and the roles of parents; moreover, it was argued that biological sex characteristics of children (being boy or girl- Francis, 2010; Owen Blakemore et al., 2009; Emolu, 2014; Cherney et al., 2003), age growth (Freeman, 2007) and social and economic status (SES) (such as market influences - Aina et al., 2011) are also important factors in children's preferences of gender-typed toys. The SES let children not only what toys to be chosen to play, but also it determines to what degree they are free and have accessibility to play with opposite sex (Shahidi, 2012). In a literature review, Shahidi (2012) demonstrated that in low-income classes there are some restrictions for children's choices of play and having autonomous movements or outdoor play. Since play is always associated with chosen toys (Hughes, 2010; Burton, Henninger, Hafetz & Cofer, 2009; Freeman, 2007; Fridell et al., 2006), it is assumed that SES has an influential role in children's gender-typed preferences of toys. Although some researchers argued that SES should be studied in microsystems of family, peer group,

school, community and media to understand how gender role is socialized (Oncu & Unluer, 2012), we argue that SES can be studied through major economic and social indexes of residential regions in one city (Ashournejad & Farajee-Sabokbar, 2014). The SES represents general economic and social situations that can affect children's accessibility of education, toys, play, and entertainment facilities and others (Shahidi, 2012; Oke, Khattar, Pant & Saraswathi, 1999; Kantz, 2004). Affecting from this situation (SES), children may have different gender-typed preferences of toys that may influence their gender role socialization. However, since there are few studies about which toys are more under SES influences, we focused on whether children have gender-typed preferences of toys, and also to what extent the variability of children's preferences of toys can be determine by age, gender and SES.

Research Questions

To follow these purposes and based on the literature review the following research questions were posed in this paper: 1) Although some researchers argued that children have gender-typed preferences of toys starting at early years of life (Owen Blakemore et al., 2009; Hong, Hwang, & Chi Peng, 2012), there are some other findings revealing that children at early years of age may not have a consistent understanding of gender (Bornstein et al., 2011) or prefer gender-neutral toys (Caldera, Huston & O'Brien, 1989; Kane, 2006). This contrast was a focused-matter in this paper, and thus we wanted to know whether children aged 4 to 10 years old have gender-typed preferences of toys or not. 2) Since previous studies revealed that girls at early years of age have more gender-neutral preferences of toys than boys' (Kane, 2006); we also wanted to examine whether gender factor has a significant role in children's gender-typed preferences of toys. 3) Although it was demonstrated that children in Western countries showed gradually consistency in their understanding and preferences of gender-typed toys at middle and late childhood showing a developmental pattern (Cherney et al., 2003; Owen Blakemore et al., 2009), we assumed that this developmental pattern is less dependent of culture and therefore our participants may show the same developmental pattern. If so, is there any remarkable pattern in Iranian children's gender-typed preferences of toys in terms of age development? 4) As it was noted above, we also examined whether biological sex (gender per se), age development and different SES regions can determine the variability of children's preferences of toys.

Method

Participants

This study involved 256 Iranian children aged between 4 to 10 years old with the age mean 7.23 (SD = 1.94). Of 256, 50% (N=128) were boys

and 50% were girls. Categorizing the age of the participants based on cognitive theory of development (Gillibrand et al., 2011), two categories were made: category 1 including 4 to 6 years old children (N=136, 53%) and 7-10 years old children (N=120, 47%). These age categories correspond to what most cognitive theories argued as major stages in cognitive skills development (Gillibrand et al., 2011; Demetriou, Doise & Lieshout, 1998).

SES: The participants were selected randomly from three different regions of residency from the city of Great Tehran based on the cluster random sampling method. The SES of three regions was based on the mean of SES indexes for Tehran (Ashournejad & Farajee-Sabokbar, 2014). The SES indexes (e.g., the number of cultural and educational centers, office work centers, entertainment and sport centers, and medical and health centers) were calculated based on Ranking and Comprehensive Preference Model conducted by Ashournejad and Farajee-Sabokbar (2014). Following Ashournejad et al's research, the mean of indexes based on the density of population for each of Tehran's region was calculated. Then, based on the sampling method, three regions including region 1 (North of Tehran), region 4 (downtown) and region 8 (East of Tehran) were selected. All participants grew up in these regions.

Toys: In this study, toys were play dough, car, doll, yo-yo, throwing rings, bicycle, and teddy bear.

Measures

Gender-typed toys checklist and toy card: Since physical and cultural characteristics and the social popularity of toys can provide a proper condition to choose toys to study children's gender-typed preferences (Freeman, 2007; Jadva et al., 2010; Auster et al., 2012; Sandberg & Vuorinen, 2008), a check list of toys including 30 toys was prepared. The list was given to five child psychologists to rank based on the popularity of toys in Iran. Then, 7 toys were selected based on the highest inter-rater agreement (Table 1). For each toy three pictures were selected and embedded in a separate card. Each card consists of a question with three choices about whether the toy is boyish, girlish or both (boyish and girlish). Since more than 60% of participants were pre-schoolers, three psychology students were trained how to use the cards and interview the participants. The three choices were quantified based on nominal scale: 1 for girlish, 2 for boyish and 3 for both (boyish and girlish).

Table 1. Inter-Rater Agreement Coefficients

Toys	Car	Doll	Teddy Bear	Bicycle	Play Dough	Yo-yo	Throwing Rings Kit
Degree of Agreement	0.89	0.95	0.85	0.84	0.82	0.81	.78

Demographic questionnaire: A demographic questionnaire was constructed to measure age, gender, and SES of children. The questionnaire for pre-schoolers was completed by child educators who worked with samples at daycares or schools. For each child, his or her questionnaire and toy card were same coded for the analysis.

Procedure

After determining the SES of all Tehran's regions based on the mean of SES indexes for Tehran (Ashournejad, & Farajee-Sabokbar, 2014), a sampling plan was provided. Based on sampling method, three regions (region 1, 3, and 8) were selected and all daycares and elementary schools located in these regions were identified based on an official list provided by Tehran's Educational Central Board. From the list of daycares and schools, eight daycares and schools that were located in north, east, south and center of each region were selected randomly. After providing the parents' consensus, the trained students conducted the interview and collected the data.

Results

On the basis of the nature of variables, purpose of study and research questions (RQ), the researchers used chi-square, logistic regression analysis and some graphical procedures.

RQ 1: Do children aged 4 to 10 years old have gender-typed preferences of toys?

To analyze this question, children's responses in a three-choice format (1 for girlish, 2 for boyish, and 3 for both) merged and recoded to create a gender-typed choice (coded 1) comparing with a neutral choice (coded 2). The original responses were maintained for further analyses. Then, based on the nature of variables, chi-square was used. In general, chi-square tests are non-parametric tests that usually are used to compare ratios, percentages and frequencies in uni-variable and multi-variable problems (Beshlideh, 2012; Cohen, 1996; Hooman, 2010). One of the most important tests of chi-square is goodness of fit that in behavioral science research is commonly used in order to determine the goodness and pattern of experimental data and also comparing them to theoretical models (Hooman, 2010; Cohen, 1996). The chi-square formula in its simple structure is:

$$x^2{}_{ob} = \sum (f_o - f_e)^2 / f_e$$

Where, f_o is observed frequency and f_e is expected frequency. Using chi-square for children's responses to all seven toys, the analysis showed that for toys car, doll, teddy bear, bicycle, play dough and yo-yo there are significant differences between children's gender-typed preferences of toys

and their neutral preferences (Table 2). However, there was not such difference for throwing ring kit.

Table 2. General Gender-typed Preferences of Toys

Toys	Chi-Square	df-N	Frequency	
			Genderized Preferences	Neutral Preferences
Car	107.64**	1-256	211	45
Doll	97.52**	1-256	207	49
Teddy Bear	45.56**	1-256	182	74
Bicycle	39.06**	1-256	78	178
Play Dough	28.89**	1-256	85	171
Yo-yo	11.39*	1-256	101	155
Throwing Ring Kit	.391	1-256	133	123
	* P < .00	** P < .000		

Based on the frequencies of children's responses (Table 2), the toys car, doll and teddy bear were seen genderized and bicycle, play dough and yo-yo were recognized as neutral toys showing neutral preferences. Also the frequency of responses in throwing ring kit was approximately the same for gender-typed preferences and neutral preferences.

RQ 2: Does gender factor have a significant role in children's gender-typed preferences of toys?

To analyze this question, the original choice format for responses (1 for girlish, 2 for boyish, and 3 for both) along with 2 rows of children's gender was used and the results of chi-square analysis for the toys were listed in Table 3. The general result showed that there is a significant difference between girls and boys (based on their gender) in their gender-typed preferences of car, bicycle, play dough, yo-yo at p <.000 (Table 3).

Table 3. Gender and Gender-typed Preferences of Toys

Toys	Chi-Square	df-N	Frequency & Percentage of Responses					
			Girls (N=128)			Boys (N=128)		
			Girlish	Boyish	Neutral	Girlish	Boyish	Neutral
Car	16.85**	2-256	9 (7%)	109 (85%)	10 (8%)	7 (5.5%)	86 (67%)	35 (27%)
Doll	4.50	2-256	106 (82.8%)	2 (1.6%)	20 (15.6%)	93 (72.7%)	6 (4.7%)	29 (22.7)
Teddy Bear	3.80	2-256	48 (37%)	36 (28%)	44 (34%)	54 (42%)	44 (34%)	30 (23%)
Bicycle	34.77**	2-256	18 (14%)	10 (7.8%)	100 (78%)	4 (3%)	46 (36%)	78 (61%)
Play Dough	20.88**	2-256	23 (18%)	9 (7%)	96 (75%)	16 (12%)	37 (29%)	75 (58%)
Yo-yo	15.74**	2-256	25 (19%)	22 (17%)	81 (63%)	9 (7%)	45 (35%)	74 (57%)
Throwing Ring Kit	7.28*	2-256	19 (15%)	39 (30%)	70 (55%)	15 (11%)	60 (48%)	53 (41%)
			*p <.05		*p <.000			

Regarding the car, most of the girls (85%) recognized and preferred the car as a boyish toy, and just 7% of girls recognized that as a girlish toy, and also 8% preferred it as a neutral toy. In contrast, 67% of boys thought car is boyish and interestingly 27% of boys recognized that as neutral toy. Comparing the children's responses to neutral choice for toy car revealed that girls had more gender-typed preferences about the car than boys.

In case of doll, the results revealed that there were not any significant differences between girls' and boys' responses indicating that both boys and girls recognized doll as a girlish toy. Thus, children's preferences for doll were independent to gender factor. Based on Table 3, the chi-square for toy teddy bear was not significant indicating that both boys and girls had similar responses about their preferences. Thus, children's preferences about teddy bear were independent to gender factor. Regarding the bicycle, most of the girls (78%) thought this is a toy for both genders, whereas 61% of boys thought this toy is appropriate for both genders. And also 36% of boys preferred bicycle to be a boyish toy. Thus, it seems that gender factor for bicycle influenced children's preferences.

Chi-square was significant about the differences in children's preferences in play dough. 96 girls (75%) thought play dough is a neutral toy, but 75 boys (58%) thought similar to girls. Additionally their gender-typed preferences were different since 37 boys (29%) preferred this toy to be boyish; whereas, only 9 girls (7%) had the same response. Children's preferences were different about yo-yo too. Both genders (boys 57% and girls 63%) recognized this toy as a neutral toy; that is, yo-yo is independent to gender factor. Regarding throwing ring kit, girls preferred this toy to be for both genders; however, boys thought throwing ring kit is more appropriate for boys than girls or than both.

RQ 3: *Is there any remarkable pattern in Iranian children's gender-typed preferences of toys in terms of age development?*

Analyzing the third research question led the researchers using 2-dimensional chi-square test including their gender-typed preferences of toys and their categorical-aged groups (Table 4). All participants were categorized in two groups, 4 to 6 and 7 to 10 years old. In order to illustrate the pattern of possible changes some graphical procedures were employed for each toy based on each year of age.

Table 4. Age and Gender-typed Preferences

Toys	Chi-Square	df-N
Car	7.21*	2-256
Doll	4.96*	2-256
Teddy Bear	2.71	2-256
Bicycle	19.96**	2-256
Play Dough	1.32	2-256
Yo-yo	37.37**	2-256
Throwing Ring Kit	29.32**	2-256

*p <.05 *p <.000

The results for toy car showed that children's gender-typed preferences change in terms of age X^2 (2, N = 256) = 15.58, p =.027. As children grow up, they think of the car as a more boyish toy. As the graphic image (Figure 1) shows, this change is meaningful. As it can be seen, even though children's perception about the car rose about age 8 and 9 on "Both" option, their selection is mostly on "Boyish".

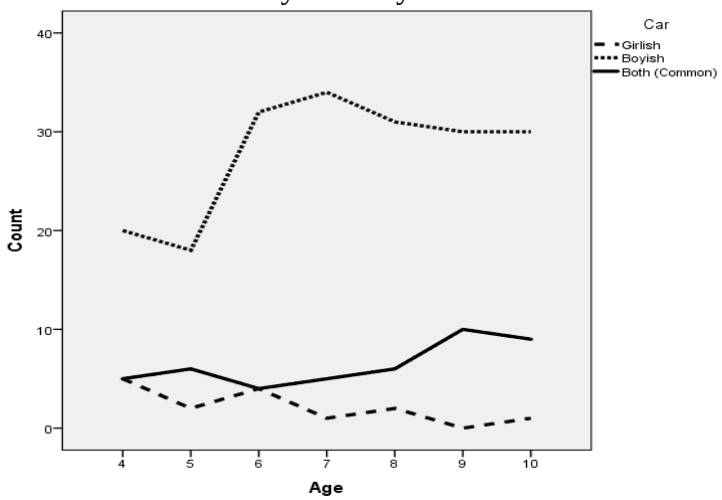

Figure 1. The pattern of gender-typed preferences of car toy in terms of age

Chi-square for the doll was X^2 (2, N = 256) = 4.96, showing a significant change (p =.044); that is, as children get older, their gender-perception/preferences of doll become more girlish (see Figure 2).

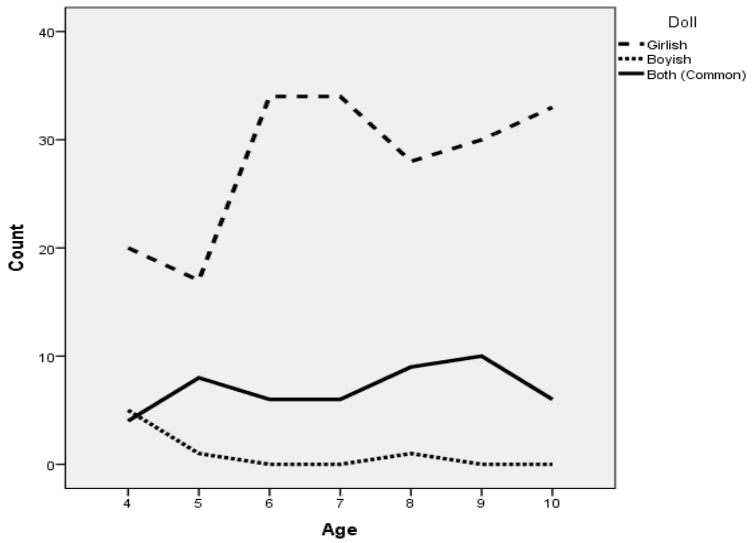

Figure 2. The pattern of gender-typed preferences of doll toy in terms of age

Children's responses about the teddy bear did not display a significant change X^2 (2, N = 256) = 2.71, p =.258. Likewise, the Figure 3 shows that all three options don't have dramatic change in ages between 4 and 10; although, some fluctuations can be seen (see Figure 3).

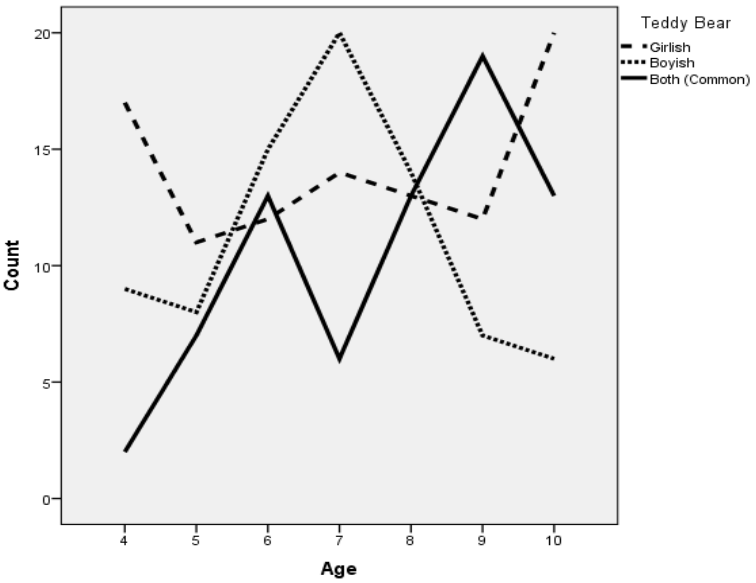

Figure 3. The pattern of gender-typed preferences of teddy bear in terms of age

The results for bicycle showed that children's responses changed dramatically from the first aged-group 4-6 years old to the second group 7-10 with X^2 (2, N = 256) = 19.96, p =.000. As the Figure 4 indicates, younger

children preferred bicycle more as a genderized toy, while older children believe it as a more neutral toy.

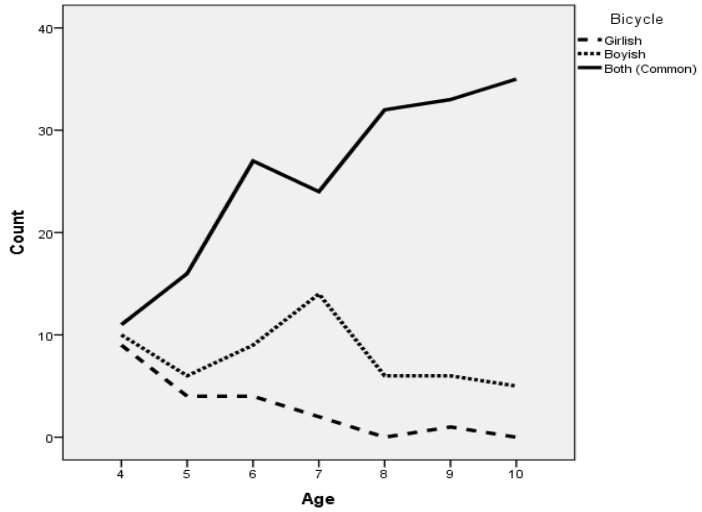

Figure 4. The pattern of gender-typed preferences of bicycle in terms of age

In case of play dough, the result showed that as children's age increase they think more of it as a neutral toy with X^2 (2, N = 256) = 6.43, p =.040. Based on Figure 5, although children at age 4 and 5 preferred play dough as a gender related toy, through growing up (age 6 to 10) they recognized the toy more neutral.

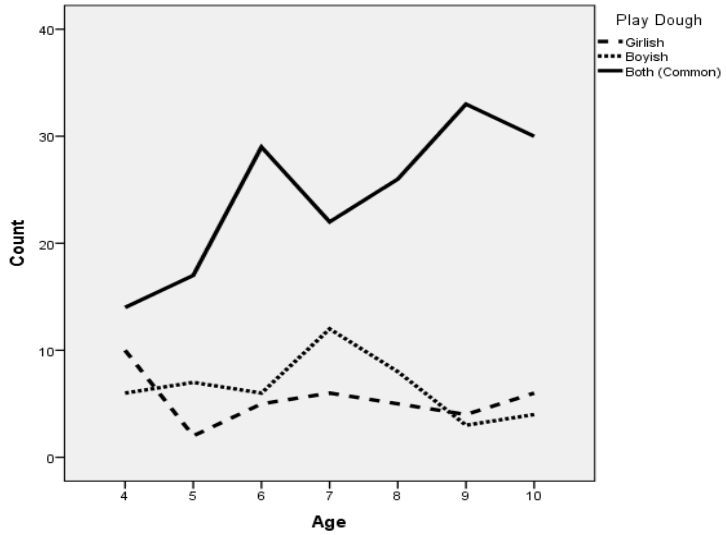

Figure 5. The pattern of gender-typed preferences of play dough in terms of age

The chi-square for the yo-yo was X^2 (2, N = 256) = 37.37, p =.000 indicating significant changes in children's gender-typed preferences during their development. Both chi-square value and the graph of the responses

revealed that as children grow up their preference regarding yo-yo become more neutral than genderized (see Figure 6).

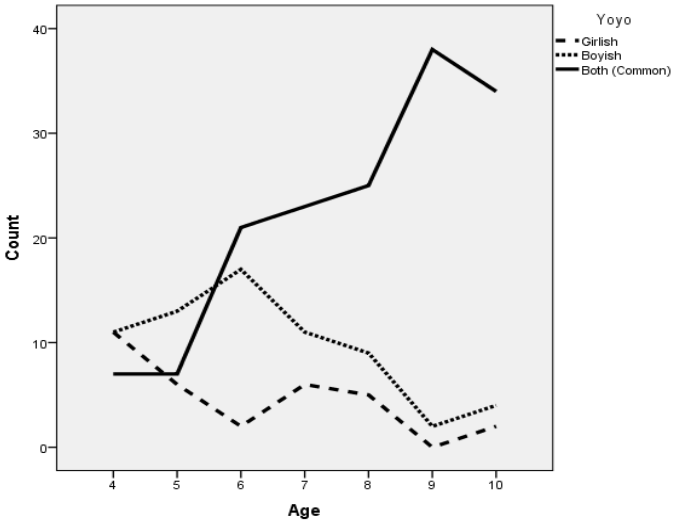

Figure 6. The pattern of gender-typed preferences of yo-yo in terms of age

For throwing rings kit, the chi-square was X^2 (2, N = 256) = 29.31, p =.000 indicating significant changes in children's preferences in terms of age. The Figure 7 also showed that there were some fluctuations during age 4 to 8 in children's gender-typed preferences, but after age 8, children changed their idea noticeably and they thought throwing rings kit as a toy for both genders (see Figure 7).

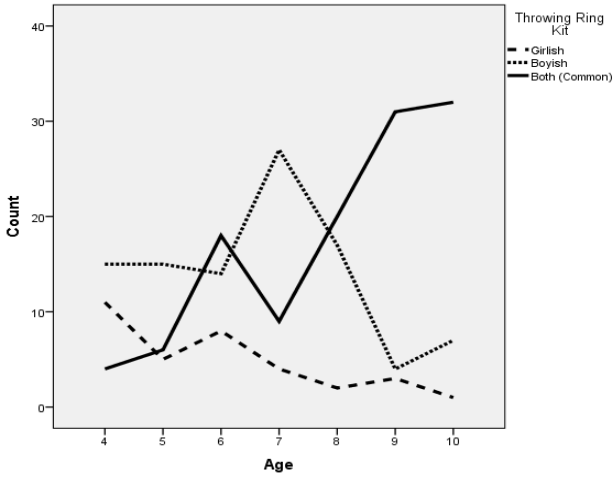

Figure 7. The pattern of gender-typed preferences of throwing rings in terms of age

RQ 4: *Do biological sex (gender per se), age development and different SES regions predict and determine the variability of children's preferences of toys.*

This research question was focused on the extent to which children's gender-typed preferences of toys can be determined by their gender, age and SES. Based on the nature of independent and dependent variables, a three-predictor logistic model was fitted to the data to test the degree of likelihood of the variability of children's gender-typed preferences that may be predicted by age, gender and SES. The logistic regression analyses for the 7 selected most popular toys were carried out by the SPSS version 22. The results for each toy and their predictors are shown in the Table 5.

Table 5. Logistic Regression Equation for 7 Toys

Toys	Predicted Logit of (GENDER-TYPED PREFERENCE)
Car	$-1.670^{a} + (-9.279)^{h} \times SES + (0.139)^{j} \times AGE + (-1.502)^{r} \times GENDER$
Doll	$-1.447^{a} + (-27.663)^{h} \times SES + (0.111)^{j} \times AGE + (-0.463)^{r} \times GENDER$
Teddy Bear	$-2.955^{a} + (-34.551)^{h} \times SES + (0.398)^{j} \times AGE + (0.558)^{r} \times GENDER$
Bicycle	$-2.331^{a} + (-23.338)^{h} \times SES + (0.504)^{j} \times AGE + (0.967)^{r} \times GENDER$
Play Dough	$-0.947^{a} + (-38.005)^{h} \times SES + (0.364)^{j} \times AGE + (0.832)^{r} \times GENDER$
Yo-yo	$-3.832^{a} + (-22.440)^{h} \times SES + (0.693)^{j} \times AGE + (0.307)^{r} \times GENDER$
Throwing Ring Kit	$-4.766^{a} + (-39.448)^{h} \times SES + (0.784)^{j} \times AGE + (0.697)^{r} \times GENDER$

^{a} B coefficient for the Constant
^{h} B coefficient for the SES
^{j} B coefficient for the AGE
^{r} B coefficient for the GENDER

According to the model, the log of the odds of a child's gender-typed preference was negatively related to his/her SES ($p < .05$), positively related to his/her age and gender ($p < .05$), and this pattern is right for almost all of the toys (Table 5). In other words, the higher the SES, the less likely it is that a child would genderize his/her responses about the toys. In contrast the higher the age, the more likely it is that a child would genderize his/her responses about car, doll, teddy bear and play dough. Given the same SES and age, boys were more likely to genderize his/her responses about the toys than girls because boys were coded to be 2 and girls 1, except car and doll for which girls genderized their responses more than boys.

Table 6 shows the results of the logistic regression model, with gender variable that was defined as categorical. Based on the results, three predictors (SES, age and gender) could significantly predict children's gender-typed preferences in almost all of the toys, but not for doll and car; that is, gender was significant just for the car and SES just for the doll.

Table 6.—Logistic Regression Analysis of 256 Children's Gender-Typed Preferences

Toy	Predictor	β	SE	Wald	*df*	*p*	Exp(β)	OR 95 % CI	
Car	SES	-9.279	14.05	.436	1	.509	.000	.000	850831.3
	Age	.139	.116	1.447	1	.229	1.149	.916	1.441
	Gender (2=boys,1=girls)	-1.502	.386	15.151	1	.000	.223	.105	.474
	Constant	-1.670	.686	5.936	1	.015	.188		
Doll	SES	-27.663	12.892	4.604	1	.032	.000	.000	.091
	Age	.158	.111	2.035	1	.154	1.172	.942	1.457
	Gender (2=boys,1=girls)	-.463	.325	2.023	1	.155	.629	.333	1.191
	Constant	-1.447	.642	5.079	1	.024	.235		
Teddy Bear	SES	-34.55	12.453	7.698	1	.006	.000	.000	.000
	Age	.398	.104	14.768	1	.000	1.489	1.215	1.825
	Gender (2=boys,1=girls)	.558	.289	3.727	1	.054	1.747	.992	3.076
	Constant	-2.955	.626	22.270	1	.000	.052		
Bicycle	SES	-23.338	10.978	4.520	1	.034	.000	.000	.162
	Age	.504	.100	25.527	1	.000	1.655	1.361	2.012
	Gender (2=boys,1=girls)	.967	.303	10.188	1	.001	2.630	1.452	4.763
	Constant	-2.331	.601	15.033	1	.000	.097		
Play Dough	SES	-38.005	11.399	11.117	1	.001	.000	.000	.000
	Age	.364	.090	16.217	1	.000	1.439	1.205	1.718
	Gender (2=boys,1=girls)	.832	.285	8.520	1	.004	2.299	1.314	4.020
	Constant	-.947	.570	2.761	1	.097	.388		
Yo-yo	SES	-22.440	11.140	4.057	1	.044	.000	.000	.546
	Age	.693	.109	40.623	1	.000	2.000	1.616	2.475
	Gender (2=boys,1=girls)	.307	.292	1.106	1	.293	1.360	.767	2.411
	Constant	-3.832	.639	35.920	1	.000	.022		
Throwing Rings Kit	SES	-39.448	12.322	10.249	1	.001	.000	.000	.000
	Age	.784	.116	45.520	1	.000	2.190	1.744	2.751
	Gender (2=boys,1=girls)	.697	.293	5.645	1	.018	2.008	1.130	3.570
	Constant	-4.766	.694	47.207	1	.000	.009		

β estimated value of the regression coefficient, *SE* Standard error, *Wald* Wald statistic, *df* degrees of freedom, *p* level of significance, *OR 95% CI* Odds ratio with a 95% confidence interval

The general models fit were also statistically significant for all the toys. For instance, for bicycle was ($\chi 2 = 39.85$; $p < .000$) in relation with the null model. Finally, the model showed a moderate-low level of explained

variance (R^2 = .204) with 72% of correct classification, and for throwing rings kit was ($\chi 2$ = 73.96; $p < .000$) with explaining of 34% of the variance and 75% of correct classification. Also the model fit was statistically significant for yo-yo too ($\chi 2$ = 63.57; $p < .000$) with 30% of variance explanation and a 73% of correct classification.

Discussion

In contrast to the notion in which children have an inborn tendency to prefer toys differently based on their genders (Jadva et al., 2010), this study relied on social learning theory and cognitive developmental theory in which children develop their self-awareness, gender-awareness and their gender-typed preferences of toys through some specific developmental stages and trajectories that are influenced by biological, cognitive and social factors (Emolu, 2014; Jadva, Hines & Golombok, 2010; Bornstein & Lamb, 2011; Kane, 2006; Aina & Cameron, 2011).

Accordingly, we attempted to find reliable answers to all above noted questions. Unlike some studies (Caldera, Huston & O'Brien, 1989; Kane, 2006), the result of first question revealed that children had clear gender-typed recognition and preferences of toys. In detail and alignment with the previous studies (Owen Blakemore, et al., 2009; Hong, Hwang, & Chi Peng, 2012; Freeman, 2007; Aina & Cameron, 2011), this study revealed that children displayed their gender-typed preferences for car, doll, teddy bear, bicycle, play dough and yo-yo; although, they did not have this preference for throwing ring kit.

As the results showed, this preference for some toys such as car, bicycle, play dough and yo-yo is dependent to gender factor. However, children's preferences of teddy bear and doll were independent to gender factor; that is, there were not any significant differences between boys' and girls' responses. Both boys and girls recognized and preferred doll as girlish toy and teddy bear as neutral toy. This result is opposite of Kane's (2006) finding in which girls at early years of age have more gender-neutral preferences of toys than boys'.

Regarding age development and the patterns of children's gender-typed preferences of toys, this study demonstrated that for some toys such as car, doll, bicycle, play dough, yo-yo and throwing rings kit some dramatic changes can be observed in children's preferences as they grow up. These dramatic changes display some meaningful patterns in children's gender-typed preferences of toys. This result aligned with Freeman's (2007) findings for doll, and generally is compatible with this notion that age development will change children's preferences of toys (Cherney et al., 2003; Owen Blakemore et al., 2009). The remarkable finding of current research was that the dramatic changes in children's responses for bicycle, play dough, yo-yo

and throwing rings kit are directed from gender-typed to neutral type; that is, through growing up children gradually prefer these toys as neutral not gender-related toys. Since culture can influence children's behaviors in play and choosing toys (Freeman, 2007; Hughes, 2010; Shahidi, 2012), this type of pattern is expected for both Iranian boys and girls as they grow up and face more cultural factors that allow them to play with such toys regardless of their gender freely. Regarding the predictors of children's preferences of toys, the result of logistic regression showed that the log of the odds of a child's gender-typed preference was negatively related to his/her SES and positively related to his/her age and gender. Additionally, this predictive pattern was right for almost all of the toys in this study (Table 5). This result aligned with the previous findings in which environmental factors, SES, gender and age can determine children's preferences of toys (Hughes, 2010; Burton, Henninger, Hafetz & Cofer, 2009; Freeman, 2007; Fridell,et al., 2006). Regardless of above noted findings, the current research was not focused on some other toys and early aged children. Moreover, the current study was focused on a cross-sectional sampling and therefore it is suggested that researchers study any patterns in children's gender-typed preferences through longitudinal methodology.

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