

**PROPOSING AND ANALYZING THE GENDER  
STEREOTYPE  
BEHAVIOR MODEL IN CHOOSING CHILDREN'S  
TOYS WITH SIMULATION DATA**

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**ABSTRACT**

The gender stereotype behavior model in choosing children's toys consists of three latent variables i.e. the biological factor, cultural factor, and psychological characteristic. The later variable is endogen whilst the rests are exogenous and covariance. Each latent variable is converted by two observed variables i.e. the gender stereotype behavior and child rearing practice for describing the cultural influence; the testosterone hormone level and the preference in choosing partner based on race reason for describing the biological factor; aggressive behavior and spatial cognitive ability for describing psychological characteristic. Using the simulation data, the model is modified e.g. the spatial observed variable should be correlated with the gender stereotype observed variable. The modification model produces the significance level with the  $p = .171$ , the GFI is .990, and the RMSEA is .045. Those three crucial measurements have been appropriate to obtain the fit model. It is expected that the simulation data can explain the proposed model. Beside that it is proved that the biological factor is the covariance of the cultural influence ( $p < .05$ ).

Key words: Gender stereotype - biological factor - cultural factor - psychological characteristic.

**INTRODUCTION**

Playing and toys are children's world. Parents as the most responsible persons for children should provide them with toys which are appropriate with their psychological development stage. Beside that, parents should also give them sufficient time to play with. In fact, most of parents are unable to provide one of those children's basic needs. Frequently they claim that economic reason is the main root of the problem e.g. children are cheap labor either for public or domestic tasks. When putting tasks on their children, parents consider the children's gender and culture as part of heavenly order. Examples for the major cultures, girls should assist their mothers in the kitchen whereas boys help their fathers in the rice field or other public areas.

When parents afford to procure toys, they will select those toys based on children's gender. It is expected that girls should play with feminine toys such as dolls or kitchen sets while boys should play with masculine toys such as swords or vehicles. Giving time to play and providing toys are parents' method in directing their children's role in the future. In line with research results from Caldera et al by the year 1989, Leaper et al by the year 1995, Leaper and Glesson by the year

1996, Liss by the year 1993, those masculine and feminine toys indeed produce different impacts on both children and parents. Those impacts will influence the development of children's gender roles in the future (Caldera, 1998). Those roles will undoubtedly be in line with the cultures in which those children live.

Providing stereotypic gender toys will give impacts on children's psychological characteristics. Children will obtain different cognition ability primarily based on spatial perception development, and different aggressive levels. When these impacts are not recognized then the gender gap will keep on going. For example women will be concentrated on repetitive and monotonous fields of work, since their spatial cognition abilities are more likely limited than boys. On the other side, men will master the technical fields of work since those types of work require higher spatial cognition levels and men have a better spatial ability. It is expected that the technical type of work commonly offers higher salary than menial work. Therefore men are more likely to enjoy higher job position than women. Then for the aggressive behavior, boys are more likely at a disadvantage the self control behavior, caring for others, and familiarity with domestic tasks. However it is important to note that those kinds of behavior are crucial for survival purposes.

This article is divided into three parts i.e. the theoretical model explanation, the model analysis, and the model examination. On the first part, there are several discussions such as psychological characteristics, cultural influences, and biological factors. In psychological characteristics there are discussions related with aggressive behavior and spatial cognitive ability. In the cultural influence, there are discussions about child rearing practice and parent's perception on gender stereotype mainly on selecting children's toys. Then in the biological factor, there are two discussions e.g. concerning the testosterone hormone level, and people's preference for their mate on race similarity. On the second part of this article - the model analysis there are several discussions in relation with the operational definition, hypotheses (major and minor), and the proposed hypothetical model, the model examination as the last part of this essay is intended to examine the compatibility of the provided simulation data with the proposed hypothetical model.

## **THE THEORETICAL MODEL EXPLANATION**

### **The Aggressive Behavior as the First Psychological Characteristic**

The Indonesian dictionary, edited by the Language Centre of the National Education Department and the *Bahai Pustaka* (2001) mention that aggression is the angry feeling or rough act because of disappointment or failure in achieving any goal or satisfaction. That angry feeling or that aggressive act may be directed to any person, animal, or inanimate object. In the social psychological term, Myers (1994) mentions that aggression is a kind of behavior, aimed to injury, hurt, or to destroy. In fact, children are frequently behaving aggressively. For example, when failing to obtain the intended toy children may destroy many inanimate objects surround them, scream, or possibly hurt them. Nevertheless it is possible this aggressive act could have a positive meaning e.g. for survival goals. This article emphasizes more on the negative meaning on aggressive act.

What is the root of this aggressive act? Why do two children perform different aggressive behavior even though they are in a similar situation? Is this difference because of environmental or

biological factor? Myers (2002) explains that the human's genetic, hormonal, and neural situation indeed influence aggressive behavior. People with a high level of testosterone hormone are more likely to act aggressively than a lower level of that hormone. For the years 1930 and 1950 Sigmund Freud claims the intrinsic factor as the most responsible reason for underlying the aggressive behavior (in Michener & DeLamater, 1999). Freud explains that even a fetus in the mother's womb has two opposite drives e.g. creating and destroying drives. The later drive or death instinct (instinct to kill) is as natural as breathing, and that instinct always demands a release. The death instinct could be meant to hurting others, to increasing self stress, or to suicide. In other words, Freud emphasizes that any one has a possibility to act aggressively since every one has both instincts. Based on the genetic reason, boys are more likely to be aggressive than girls (Josephson & Colwill, 1978). It is because the male chromosomes are XY whilst the female chromosomes are XX- The Y chromosome has a contribution (not the main contribution) for aggressiveness. On the other hand the X chromosome is the inhibiting factor for that aggressive behavior.

However an aggressively predisposed individual will not aggress harshly all the time since that behavior's gradation is neither universal nor periodical. Therefore not all people will be cruel for any reasons. Perhaps one can aggress any time although he or she has not been acted aggressively for longtime. On the other hand, the aggressive behavior will not subside immediately although he or she has acted just before in hostile way. This is contradictory in the animal situation since its aggressive act is universal and periodically. It means that any animal will certainly be angry when it is disturbed intensely. The hostile act will subside immediately after its enemy runs away. Therefore the animal is likely more predictable than the human. The analogy between the animal and the human shows the fact that a human has a naturally capacity to act in a hostile way. However the emergence of aggressiveness depends more on environmental factors rather than biological factors.

How does the environmental factor influence the emergence of the aggressive behavior? Based on the learning theory proposed by Albert Bandura (in Berns, 2004), children learn an aggressive behavior because they experience it by doing directly, observing others, or observing television. Result of their experience will teach those children several lessons e.g. the appropriate time, place, and reason for producing the hostile acts; the appropriate target of that behavior; the type of hostile behavior; and the types of reward and punishment as a result of that hostile behavior. For example a child will not act hostile when his or her toy is taken away by the mother. On the other hand an intensely aggressive behavior will immediately emerge when the child's toy is taken away by his or her peers. This difference occurs since the child is able to detect intelligently that mother is a more powerful figure compared to the child's friend in terms of providing reward and punishment.

Later on Bandura explains the extended learning process through the Social Cognitive Theory by the years 1986 and 1994 (in Thomson & Zerbino, 1997). The theory consists of four processes e.g. the process of attention requirement, the process of memory storage, the process of behavior production, and the process of motivation requirement. The ability to understand those four processes demonstrates that children are very good observers. Children will observe any thing

in their environment that is interesting and they will memorize it. The memory will be transformed immediately into a behavior when there is a sufficient push such as a reward. Reversely, that memory will not be transformed into an overt aggressive act when there is an appropriate counter pressure such as a punishment.

This process is shown in family gatherings when children learn and observe their parents' behaviors. When parents behave stereotypically in treating their offspring based on gender reason, then their children will memorize those events. As children duplicate the gender stereotype behavior and if parents reward them, then the behavior copying will be done repetitively and the behavior becomes permanent. However when negative responses emerge from parents, it is a sign that they do not welcome the children's aggressive behavior. Therefore children will not repeat that behavior in the future. Example of gender stereotype behavior is that boys are encouraged to behave aggressively through sword toys. On the other hand girls are not encouraged to behave aggressively. People are more likely to accept aggressiveness from boys, rather than from girls.

Beside parents, other environmental factors such as mass media, especially television or films contribute great influences on forming aggressive behavior. It is demonstrated from an experiment conducted by Bandura, Ross, & Ross by the year 1963 (in Berns, 2004). A group of kindergarten students watch a woman adult kicking and hitting a Bobo plastic doll, whereas another group watches a woman adult playing the funny and attractive Tinker toys. After watching the film, each child enters a room which is filled with various toys includes the Bobo plastic dolls and Tinker toys. The experimenters observe the child's playing behavior. The experiment shows that children observing the aggressive behavior are more likely to replicate the similar behavior including the aggressive verbal comments than children observing the non aggressive behavior.

To understand those experiment results, one should consider a fact that children only imitate certain model and certain behavior. Children are able to select an appropriate behavior to be imitated. Commonly, parents are the most important model for children. Beside that, watching television is the most favorite method to learn any behavior including the gender stereotype and aggressive behavior. Therefore it can be said that watching television film is the most suitable method for gender socialization (Witt, 1997). It is because watching television is exceedingly cheap and easy compare to watching movies in a theatre, reading a book or magazine. Several research results (in Thomson & Zerbinos, 1997) explain that children as young as 18 months - 2 years acquire watching television habits. Then St. Peters, Fitch, Huston, Wright, and Eakins (1991) find that parents with heavy watching television habits influenced their children to do the similar thing. They watch television 5.9 hours/week on average. On the other hand, children come from parents with less watching television habit only spend their time 3.8 hours/week in front of television sets. Those five researches also explain that parents rarely accompany their children in watching child programs in television.

Through television, children learn many things include the gender stereotype behavior (e.g. the aggressive behavior is only appropriate for boys), social norms, and social roles in their community. Children are more likely to imitate their idol actors. Unfortunately television films tend to picture the masculine aggressive models more than the feminine models. Therefore children have

countless opportunity to imitate those aggressive behaviors. Beside that List, Collins, & Westby (1983) also find that the traditional gender stereotype scenes are more likely to be kept in children's mind than the more egalitarian scenes. However that memorizing process is more profound at children either with a high or a medium level of the gender stereotype concept. Whereas among children with a low level of that stereotypic concept, those two scenes effected similarly. In other words children with a low level of gender stereotype concept have memorized both seen unlikeness.

### **Psychological Characteristics: The Spatial Cognitive Ability**

This spatial cognitive ability is a mental ability to form an object concretely trough changing, adding, subtracting, or manipulating the object (Berns, 2004: 266). This is a required ability for specific fields such as architecture, civil engineering, space design, and art. Maccoby and Jacklin by the year 1974 mention that boys had a higher spatial cognitive ability then girls (in Beery, Poortinga, Segall, & Dasen, 2002). Why does cognitive ability between men and women differ? Comparing to women, do men think differently?

An explanation from Broverman, Klaiber, Kobayashi, and Vogel by the year 1968 (in Lips, Myers, & Colwill, 1978) would be useful to understand the influence of biological factor on the differential spatial ability between men and women. According to those four researchers, the male hormone (androgen or testosterone) and the female hormone (estrogen) influence the intellectual performance. Those hormones will influence and interact differently with the transmitter chemical substance in human's mind. The human sex will influence those different interaction results, and consequently there will be a differential skill mastery either the A tasks or the B tasks. The A tasks require exercises repetitively, and routine tasks. Examples of the A task are typing, color identifying, and learning by heart. To master the A task the central nervous system should be activated. On the other hand the B tasks require the inhibition of the central nervous system in order to reorganize the problem's elements. An example of the B task is the anagram task in the EFT (Embedded Figures Test). The hypothesis of those four researches is that the estrogen hormones are more likely to activate the central nervous system than the testosterone hormones. On other words women are more likely to complete the A tasks whereas men tend to complete the B tasks. A crucial critic lies primarily in categorizing the A and B tasks. However, the theory still contributes an effort to understand the difference between the male and female hormones and their influences on spatial cognitive ability.

The next discussion is inquiring the influence of cultural factors in forming the differential spatial cognitive ability between men and women. Culturally, there is a differential spatial cognitive ability between both sexes. To explain this differential, Green, Bigler, & Catherwood (2004) state a hypothesis that children with masculine toys are more likely to have better spatial cognitive ability compared with the feminine toys. This different ability may influence the future behavior including the fields of work they choose. Later on Putnam, Myers-Walls, & Love (2005) also explain the characteristic of masculine toys such as vehicles actually are basic methods for learning movement, speed, and spatial perception whilst feminine toys are appropriate for learning to

become a good parent (mother and father) and caring a baby.

In fact, the differential spatial ability between men and women is not universal since in other cultures there is a reverse phenomenon or even similar ability on both of sexes.

Berry, Poortinga, Segall, & Dasen (2002) report Berry's research by the year 1996 and MacArthur by the year 1967 that the limit male/female tribal in Eskimo has spatial cognitive ability. When examining with the Kohs block test (a task requires geometric visual and constructive form through routing an object), it is found that there is indeed differential spatial cognitive ability among cultures. Compared with females, males in the agrarian and more settled societies are more likely to be superior on the spatial cognitive ability. On the other hand, female and male among nomad societies and their primary food subsistence by hunting actually have similar spatial cognitive ability or even reverse. Finally Berry, Poortinga, Segal, and Dasen conclude the difference in spatial cognitive ability is not universal since cultural factor plays an important influence.

## **THE CULTURAL FACTOR**

### **The Gender Stereotype**

In many societies, the gender concept is obscure with the sex concept although both concepts have distinctive meanings. The sex concept relates with the dichotomy category i.e. male and female (Fagot, 1995). It means that both of sexes are differentiated based on their biologic functions. Natural functions of female's organs are for menstruation, pregnancy, giving birth, and breast feeding whereas male's organs are for impregnating. These functions can not be reversed. It is because male and female have different biologic functions then their abilities are assumed to be differently. For that reason their tasks and roles in their societies are also different. Then the gender concept emerges as a cultural product. It means that gender is an adjective grouping of things, and it is not limited into masculine and feminine but also merms (male pseudo hermaphrodites), fems (female pseudo hermaphrodites), and herms (true hermaphrodites) (Blume & Blumc, 2003). When nearly all community elements have similar beliefs about the distinguished role and task between men and women and those beliefs are passed on to the next generations, then gender stereotype emerges. According to Berry, Poortinga, Segall, & Dasen (2002), the gender stereotype is a belief about different characteristics of men and women, and all people agree with that belief. This gender stereotype indeed has a strong influence in forming different psychological characteristics between both sexes such as spatial cognitive ability and aggressive behavior.

The root of this gender stereotype comes from family socialization, primarily from a parent. It is because a parent is the first and the closest social environment for children. This parent's strong influence toward children has been shown from various studies: (Knicfmeyer, Wheelwright, Hackctt, Taylor, Raggatt, & Baron-Cohen, 2005; Witt Fagot, 1995), and Lowcvcr Tancnbaum & Leaper (2002) argue on their *meta*-analysis research that parents possibly influence their children mainly in forming self concept and gender attitude. Although there is skepticism, in the daily activity facts all of us have been observed that parents strongly influence children mainly in forming the gender stereotype attitude and behavior.

A clear example comes from Margiyani & Alimi (1999). They explain that parents treat their sons and daughters differently, even when the parents are still in a stage of planning for having a child. Parents are more likely to yearn for having sons rather than daughters. When a mother assumes that she will have a son, she tends to consume more meat. When the baby was born, African parents (Lucas & Young, 1985) as well as Javanese parents (Wimbarti, 1999) tend to name their sons and daughters differently. Besides that parents also tend to provide toys differently between both of sexes. Boys are provided vehicle toys whereas dolls and kitchen sets are for girls. The gender stereotype understanding is also transmitted to children through different types of communication. Fathers tend to respond less positively when their sons play feminine toys such as dolls, whereas mothers tend to push their daughters to communicate more (Fagot & Hagan, 1991).

Boys with masculine toys are more likely to behave aggressively. It is because characteristics of the masculine toy are discouraging several qualities such as physical closeness with friends, verbal interactions (Martin & Ruble, 1997). Those toys stimulate boys to act dynamically, to be able to cope with challenges, to exercise their strength (Kurniawan, 2006), to learn movement and speed, and to foster the spatial cognitive ability (O'Brien & Huston, 1985). On the other hand feminine toys tend to stimulate children to be a good parent (father and mother) (Putnam, Myers-Walls, & Love, 2005), and to enhance cooperation behavior (O'Brien & Huston, 1985). Compared to girls, boys are more encouraged to climb and play far away from home (Margiyani & Alimi, 1999). They even play football in the crowded street or swim in the dirty rivers. Contrasting to girls, boys are enjoying more freedom to do any thing outside of their homes. These privileges facilitate boys to behave more aggressively than girls.

### **Methods of Child Rearing Practice**

Child rearing practice indeed influences forming aggressive behavior. It is because parents treat sons and daughters differently. This segregation is the parents' road to direct their offspring to behave in accordance with social norms. In a patriarchal society - which is very common in many cultures - aggressive boys are more accepted than aggressive girls. Examples from the Javanese family, girls are more directed to assist their mothers in the kitchen, whereas boys enjoy more privileges to play far away from homes, to play in a rough-and-tumble fashion, and to play competitively such as foot ball games. This segregation certainly stimulates aggressive behavior more in boys than girls. However, this segregation is not universal.

A cross cultural research conducted by Beatrice Whiting and Carolyn Edwards in 1988 found that the Nyansongo agrarian tribal boys in Kenya, East Africa, are categorized into similar group with girls and women until they reach puberty. Within that time boys have to look after their younger siblings and to assist other domestic tasks. In contrast, girls have more opportunity to play. When the boys reach puberty they have to pass an initiation to enter adult world legally. After gathering with their brothers, father, and other male community, they have wider opportunity to do the masculine tasks such as hunting. Comparing with other cultures, the Nyansongo children are less likely to behave gender stereotype (Berns, 2004). The Nyansongo case demonstrates that culture has a crucial influence for parents to rear their children in certain ways.

Berry and his colleagues for the year 1957 and 1959 (in Berry, Poortinga, Segal, & Dasen, 2002) explain that parents implement five types of training when they rear their offspring i.e. obedience to other older adults, having responsibility to accomplish domestic tasks, nurture younger siblings and other needing people, reaching certain achievements, and self-reliance. When implementing those five types of training, parents actually emphasize different orientations. Boys are more directed to receive achievement and self-reliance trainings, whereas girls are more likely to have obedience, nurturing, and responsibility trainings. Different orientation in rearing children tends to direct boys to become more active, dynamic, and aggressive than girls.

## **THE BIOLOGICAL FACTORS**

### **The Hormone Level**

A related problem in this part is arguing whether the biologic factor influences the psychological characteristics more than the cultural factor. This is indeed a never ending argument. Jacklin & Reynolds (1993) in their essay have reported several research results to establish the influential factor in forming the gender stereotype behavior i.e. biological or environmental (cultural) factor. According to those two researchers, two factors have influenced the behavior similarities among family members e.g. the genetic similarities (occurred on the twin), and the environment similarities (occurred on the adopted children). Behavior characteristic of the adopted child is influenced either by environmental factor (he or she has 50% similarities with the adopted parents) or biological factor (contribution of 50% similarities comes from the biological parents). Measurement instruments on that study are the feminine and masculine scale within the MMPI (Minnesota Multiphasic Personality Inventory), the CPI (California Psychological Inventory), and the PAQ (Personal Attitudes Questionnaire).

It is found that the biologic factor is more influential than the environmental factor, primarily when the study is conducted on twin adolescences and apply the MF instrument. However two other studies on twin and one study on adopted child and all of them utilize the CPI instrument found that 32% of observed variance on the feminine scale is influenced mainly by the genetic factor whereas 1% of observed variance is influenced by the environmental factor. Interestingly when a twin study is conducted and utilizes the PAQ instrument, it is found that the genetic factor is more likely to influence the masculine scale than the feminine scale. Later on a study of the monozygotic-similar-sex twin found that the gender role of those twins is more alike than the dizygotic twins. These studies demonstrate that the gender role development on men is more likely to be influenced by the hereditary factor than the environmental factor. Unfortunately those studies are unable to show the exact rate of those two factors. Therefore there is still uncertainty that the gender role similarity among male twin is influenced by the biologic or environment factor or even both of them.

A social interaction study on twin children conducted by Baker and Daniels in 1990 found that a high score on care behavior positively correlates with the masculine scale. It means that although they are twins, there is still a big difference on their behaviors. One child has a strong leadership and is remarkably assertive whilst his or her twin has different or even reversed



psychological characteristics. That study even creates confusing in determining the more influential factor i.e. biological or environmental factor. This confusing can not be solved sufficiently since those studies utilize different methods, measure different variables, and therefore the results are confusing.

The inability of biological factor - in this case it is represented by the hormone level - in explaining the relationship with psychological characteristic is well investigated by Knickmeyer, Wheelwright, Hackett, Taylor, Raggatt, & Baron-Cohen (2005). Those six researchers intend to know the underlying reasons regarding the boy's preference on aggressive toys, vehicle toys, and constructive toys, active and dynamic toys. Those are called as the characteristics of masculine toys. Those researches also intend to know the girl's preference on feminine toys such as doll; kitchen set; and other passive toys. The difference preference on toys will influence the other psychological characteristic such as the spatial cognitive ability. In detail, those six researches propose whether the toy preference is influenced by the amniotic testosterone hormone level. Thirty one boys and 22 girls participate in that experiment. Research results indicate that there is a significant difference on the testosterone hormone level between boys and girls ( $p = .00$ ;  $t(4) = 1$ ). However the testosterone level does not correlate with the masculine scale neither for boys ( $p = .98$ ,  $r(31) = .98$ ) nor girls ( $p = .40$ ,  $r(21) = .19$ ). That hormone level does not correlate with the feminine scale neither for boys ( $p = .94$ ;  $r(31) = -.01$ ) nor girls ( $p = .10$ ;  $r(21) = .36$ ). In other words, the amniotic testosterone hormone level either in boys or girls perhaps does not influence the individual psychological characteristics.

Because of that reason, is it better to ignore the biological factor in order to understand the individual difference on psychological characteristics? The answer is no. It is because the biological factor still influences the individual psychological characteristics. This is in line with the law of behavior from Kurt Lewin, the social psychology pioneer in 1936. According to Lewin, human behavior is a simultaneous function of personal situations and the environmental situations, although the degree of its importance is not same in any case (in Myers, 2002). In other words, the biological factor may be more influential in one case but in another case that factor is less influential. An experiment conducted by Pellegrini Sc Perimutter (1989) shows that the children's playing behavior is influenced by two biological factors (age and peer's sexes) and environmental factors (types of toy).

### **Race and Ethnicity**

People very often use the similarity principle when they choose their partner. It can be similarity in biologic or non biologic reasons. The former reasons can be the attractiveness level, height, and health level, the color of eyes, and also race or ethnicity. The non biologic similarity includes religion, education, economic and social status, hobby, political party, attitude, etc (Merry, 2002). How can this similarity principle be explained through the biological factor? According to the evolution theory (Berry, Poortinga, Segall, & Dasen, 2002), most species have many offspring. In fact, not all children are able to survive, because some of them have weaker traits. Based on the natural selection, the survivors are the strongest children. To sustain their generation, those

survivors will select the strongest partners. Uniting two strong traits is more likely to increase the probability of having a much stronger child.

This is demonstrated from several cultures which require the familial marriage. Aim of the familial marriage is to increase the children's trait quality or to prevent other societies acquiring good trait qualities. The basic principle of the familial marriage is the similarity in psychological characteristic (Berry, Poortinga, Segall, & Dasen, 2002). However some other cultures prohibit the familial marriage. It is because the worse traits can be transmitted to the next generation. It is interesting to note that some offspring have better or worse trait qualities in that prohibited familial marriage. How can this phenomenon be explained?

Those four researches then explain that phenomenon through the adaptation concept (p. 259-261). It means that when population increases they will migrate to different places. Characteristics of the new place perhaps are very different than the old place. The different characteristics include temperature, method of food sufficiency, type of food subsistence, type of plants, type of animal husbandry, and many other things. The survivors on that new place are the people with the strongest and the best adaptation traits. Those survivors then develop new physical characteristics which are far different with the people from the previous or other places. Actually these different physical characteristics are the basic type of race.

Biological experts frequently argue regarding the relationship between the environmental changing of the dwelling place with the systematic genetic changing. This is reflected on the race term. For example people in high temperature areas are more likely to adapt by having darker skins. Vogel and Motulsky in 1979 mention that darker skin people are more able to adapt in high temperature areas than the brighter skin people. Other physical characteristics changing include height, nose size, hair color, and blood type. Because of the proximity of the living arrangement, having similar good adaptation quality, having similarity in food for subsistence, having similar physical characteristics, people are more likely to be attracted to each other. Then they will have healthy offspring although they do not come from a close family

The next question relates with a curiosity whether the individual attractiveness also occurs in children, and whether race also has a crucial role. The primary child attractiveness target is toward his or her mother. It means that a child is also attracted to a nearly similar person with him or her. Sears, Freedman & Peplau (1988) explain that certain responses and behavior between child and parent basically are hereditarily, and they become the source of love. Examples of those responses are the infant's ability to ask for breastfeeding, the mother's ability to breastfeeding of her infant, the baby's cry because of inconvenience, and the baby's cry as a call for parent to come. In other words, the basics of the individual attractiveness are biological as well as cultural factors.

## **METHOD**

### **The Operational Definition**

The psychological characteristic is the mental quality, and it is a latent variable. This variable is converted into two observed variables i.e. the aggressive behavior and the spatial cognitive ability. The aggressive behavior is verbal and physical behavior which is intended to hurt other

people, things, or animals. The spatial cognitive ability is the mental ability for people to locate an object in a space. It is as well as an ability to describe an object mentally and to memorize the object's scale.

The cultural influence is the environmental pressure for people to obey. This influence also comes from the learning process. This cultural influence is a latent variable as well, and is converted into two observed variables i.e. the gender stereotype and the child rearing. The gender stereotype is when people believe in female and male common tasks. The child rearing method is a way for parents to train their child primarily on five dimensions e.g. obedience, responsibility, nurturance, achievement, and self-reliance.

The biological factor is a physical individual influence. This is also a latent variable and is converted into two observed variables i.e. hormone level (the testosterone level) and the race or ethnicity (the preference level on his or her mate based on the race similarity).

In order to examine the gender stereotype model in choosing children's toys, a major hypothesis is proposed that "There is appropriateness between the theoretical model and the field data simulation". Three minor hypotheses are also proposed. First, the biological factor influences the psychological characteristic. Second, the cultural factor influences the psychological characteristic. The last hypothesis is that there is a correlation between the biological and the cultural factors.

## THE MODEL ANALYSIS

### The Hypothetic Model

After examining several theories, I propose a hypothetic model. The model contains two correlate exogenous variables i.e. the cultural factor and the biological factor, and one endogen variable (the psychological characteristic). Originally, this model is a relationship model between the contextual variables and the gender behavior difference which is proposed by Berry, Poortinga, Segall, & Dasen (2002). For this article the model is modified into three latent variables and six observed variables. The modification model is shown on Figure 1.

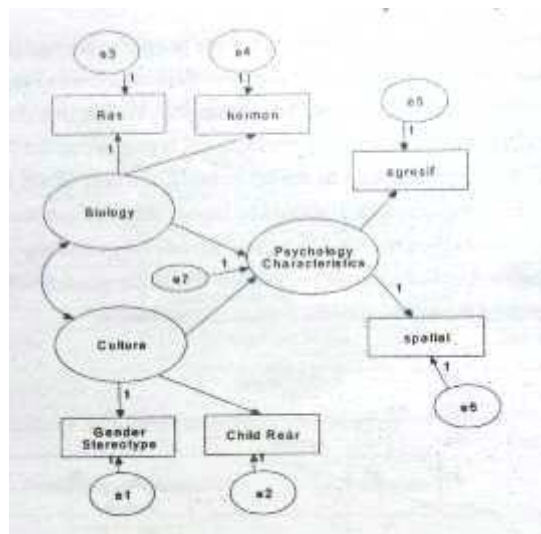


Figure 1. The Hypothetic Model of Gender Stereotype Behavior in The Choosing of Children's Toys.

## RESULT AND DISCUSSION

Figure 2 shows the first examination result of the analyzing the gender stereotype behavior model in the choosing of children's toys with simulation data.

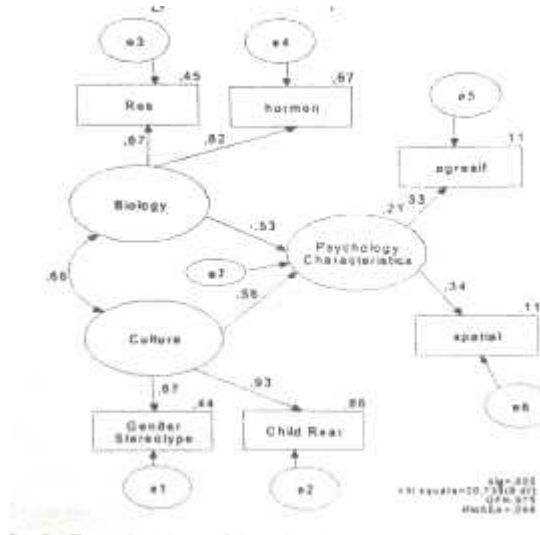


Figure 2. The 1<sup>st</sup> Examination of Gender Stereotype Behavior in The Choosing of Children's Toys.

Figure 2 exposes that the first examination of die gender stereotype in the choosing of children's toys has not been fit yet. It is shown from the lower level of significance (.002), whilst the significance boundary should be at least .005. Beside that the RMSEA of the model is .098, and it is should be less than the limit .05. It means that the RMSEA has been a failure to fulfill the requirement. On the other hand, the GFI of the model (.975) has been able to fulfill the requirement. It should be higher than the low boundary (0.95). To achieve all requirements then the AMOS 5 Program has suggested modifying the model i.e. the spatial observed variable should be correlated with the gender stereotype observed variable. The result of the model modification is shown below.

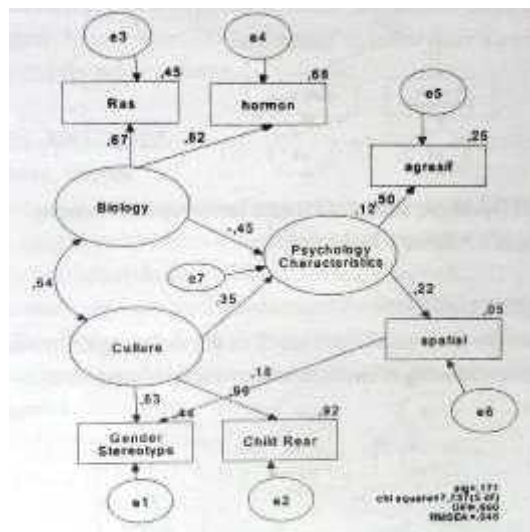


Figure 3. The 2<sup>nd</sup> Examination Model of the Gender Stereotype Behavior in The Choosing of

## Children's Toys

Figure 3 shows that the gender stereotype behavior model in the choosing of children's toys has been fit. This is shown from the three crucial measurements which should fulfill the fit requirements i.e. the significance level is .171 ( $p > .05$ ), the GFI is .990 ( $GFI > .95$ ), and the PMSEA is .045 ( $RMSEA < .05$ ). Those measurements indicate that the simulation data are able to examine the proposed hypothetic model. After reaching the fit requirements, the next analysis is to examine the regression estimation for each A ariable. The result of analysis is at the tables below.

**Table 1. Results of Regression Weights**

Relationship of variables			Estimate	SE	CR	P
Psychological Characteristic		Biological factor	-.023	.025	-.944	.345
Psychological Characteristic		Cultural factor	1.017	.018	.915	.360
Spatial Cognitive Ability		Psychological character.	1.000			
Aggressive behavior		Psychological character.	2.140	2.356	.908	.364
Gender Stereotype		Cultural factor	1.000			
Child rearing practice		Cultural factor	1.198	.164	7.303	***
Race or ethnicity		Biological factor	1.000			***
Hormone level		Biologic factor	1.101	.142	7.726	***
Gender stereotype		Spatial cognitive ability	1.341	.361	3.716	***

**Table 2. Results of Standardized Regression Weights**

Relationship of variables			Estimate
Psychological Characteristic		Biological factor	-.445
Psychological Characteristic		Cultural factor	.352
Spatial Cognitive Ability		Psychological character.	.222
Aggressive behavior		Psychological character.	.496
Gender Stereotype		Cultural factor	.632
CnHd rearing practice		Cultural factor	.957
Race or ethnicity		Biological factor	.671
Hormone level		Biologic factor	.823
Gender stereotype		Spatial cognitive ability	.181

**Table 3. Covariances and Correlations**

Relationship of variables			Estimate	SE	CR	P
Covariances :						
Biological Factor		Cultural factor	3.489	.724	4.821	***
Correlation:		Cultural factor	.643			

Biological Factor						
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The result of the regression weight shows the relationship of several variables such as:

- a. The significance influence of the cultural factor toward the child rearing practice ( $p < .05$ ).
- b. The significance influence of the biological factor toward the testosterone hormone level ( $p < .05$ ).
- c. The significance influence of the spatial cognitive ability toward the gender stereotype behavior ( $p < .05$ ).
- d. The significance correlation between the biologic and the cultural factors ( $p < .05$ )

Based on the simulation data analysis, the major hypothesis is confirmed. It mean that the proposed model of gender stereotype behavior is able to explain the obtame simulation data. From the three proposed minor hypotheses, it is only one hypothesis which is confirmed. That hypothesis emphasizes the theory that there is a correlation between the biological and cultural factors.

## CONCLUSION

The gender stereotype behavior model in choosing the children's toys actually can be examined with the simulation data. The AMOS 5 program is used to examine that model. However, the first proposed model should be modified since several crucial me surements are not appropriate with the fit model requirements. The model examination demonstrates that the major hypothesis and one minor hypothesis are conformed.

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