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HOW ARE VIRTUAL GOODS SOLD TO CHILDREN THROUGH ONLINE GAMES?

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HOW ARE VIRTUAL GOODS SOLD TO CHILDREN THROUGH ONLINE GAMES?

BY

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ABSTRACT

HOW ARE VIRTUAL GOODS SOLD TO CHILDREN THROUGH ONLINE GAMES?

BY

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This paper is a qualitative study using the case study approach to examine how virtual goods are sold to child players through online games and the possible influence of this new form of marketing on children as consumers. Academic literature has showed that children gradually develop their cognitive ability, information-processing capacity, persuasion knowledge, and consumption motives throughout childhood. In today's media world, new technology has posed new challenge to children's advocates. Considering the recent emergence of online games targeting children, it is necessary for researchers to continue to examine children's vulnerability as a marketing audience because marketing and advertising can no longer be distinctive in an online game marketing context. In other words, the line between entertainment and persuasion may no longer exist. Thus, how can we indentify persuasive intents and methods when there is no such line? This study can be viewed as the first step to answer this question. Based on the findings of previous research, especially the three knowledge structures pertaining to persuasion proposed by Friestad and Wright (1994), I apply a set of game analysis methods to my case study of an Chinese online game, trying to develop a description of this new form of marketing to children and to assess what children know about such entertainment as a tool of persuasion.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PROBLEM STATEMENT

Virtual goods are non-physical objects such as characters, items and currencies that are purchased for use in various online games and online communities. The virtual goods industry has experienced significant growth over the past several years. Analysts estimated in 2009 that virtual goods could bring in a billion dollars in the United States and around $5 billion worldwide. The growth of real-money purchase of virtual goods has increasingly been driven by Massive Multiplayer Online Role-Playing Games (MMORPGs).

MMORPG is a type of online games in which a very large number of players interact with each another through a range of games and activities. In MMORPGs, players often assume the role of fictional characters and take control over their actions. Some of the well-known MMORPGs for adults are Second Life (www.secondlife.com), World of Warcraft (www.worldofwarcraft.com) and VastPark (www.vastpark.com).

Such MMORPGs, with the purpose of selling virtual goods, significantly blur the line between entertainment and persuasion. MMORPG operators put considerable effort into overall game design and virtual goods marketing, identifying the tastes of their target consumer and creating demand among players for long-term commitment to their games. For adult players, the games product offerings are likely to be understood as marketing efforts. However, when games are designed for children, then the offering of goods for sale as part of gameplay may not be understood as a marketing effort, but merely part of gaming. This may be at best an unfair practice when targeting children, but at its worst it is a duplicitous threat to children who are still developing knowledge of persuasion attempts and are being socialized as consumers. The numbers of children who may be

influenced in these games is difficult to estimate, but to look at just one example, 51mole (a Chinese MMORPG for 7-12 year olds) now has more than 50 million user accounts.

A number of studies have examined online video games as a marketing strategy directed at children to sell real goods such as foods and toys. However, little research has been conducted into virtual goods in MMORPGs for children. Thus, by examining the game mechanics and game elements of MMORPGs, we will gain an empirical understanding of how MMORPGs are applied to children with the purpose of selling virtual goods.

The study proposed will examine 51mole, the most popular MMORPG in China for children. The research will employ a qualitative approach to understanding the game mechanics and game elements in 51mole for a marketing perspective. The Persuasion Knowledge Model and theories of consumer socialization of children will inform the development and interpretation of the findings of this study. The findings will provide a foundation for future quantitative studies that can examine the links between game elements and persuasion, and can offer insights for the development of public policy.

BACKGROUND

Massive Multiplayer Online Role-Playing Games

As a genre of online games, MMORPGs surged into popularity throughout the late nineties. Over the last ten years, MMORPGs have attracted the attention of academia. To date there have been quite a few published academic studies concerning online gaming. Previous studies have examined areas such as game traffic, game design, player profiles, social experiences within MMORPGs, motivations of gameplay, and online gaming addiction. However, among the studies pertaining to MMORPGs, only a handful deal with children as game players, while in real world this genre of online games has become quite popular among children. Previous research on children and gameplay merely focuses on the education application of gameplay and game addiction of children.

MMORPGs that target children, such as Club Penguin (www.clubpenguin.com), Webkinz (www.webkinz.com), MapleStory (www.maplestory.com), and 51mole (www.51mole.com), are virtual worlds where children engage in a variety of activities and games (See Table 1). Virtual world inhabitants often assume avatars as their in-world representations that other inhabitants can see. Some of the activities that children often engage in include playing games, interacting with other players, dressing up avatars, and taking care of virtual lands. While MMORPGs for children are relatively recent entrants among the many online forms of entertainment targeting children, it was estimated that approximately 20 million or 53% of online youth between 3 and 7 years of age would visit virtual worlds by 2011.

Virtual Goods

Nowadays, selling virtual goods has become an important source of revenue for online service providers, especially those in the Asian market. According to Nojima (2007)'s article, almost 60% of the online games surveyed in 2006 adopted virtual goods sales as their main revenue model. It is also said that the most common virtual object sold for real money is the virtual currency, which can be then spent for buying virtual items (Hamari & Lehdonvirta 2010).

Table 1 Popular MMORPGs for Children Worldwide

Title	Publisher	Date Released	Registered Accounts	Revenue Model ($: U.S. Dollars; ¥: Chinese Yuan)
Club Penguin	Walt Disney, U.S.[a]	October, 2005[a]	12 Million (2007)[b]	Membership Fee ($5.95 per month - $57.95 annually)[b]
51mole	TaoMee, China[c]	May, 2008[c]	50 Million (2009)[d]	Virtual Goods Sales ($0.3 per item - $5 per item; ¥0.6 per item - ¥10 per item)[c]
Webkinz	Ganz, Canada[e]	April, 2005[e]	1 million (2006)[f]	Physical and Virtual Goods Sales ($1 per item - $25 per item)[e]
MapleStory	Nexon, Korea[g]	May, 2005[g]	92 million (2009)[h]	Virtual Goods Sales ($2 per item- $30 per item)[i]

Sources:
a http://www.clubpenguin.com/company/about.htm
b http://seekingalpha.com/article/44152-webkinz-overtakes-club-penguin-in-traffic-will-it-be-bought-next
c http://www.51mole.com
d http://games.qq.com/a/20100107/000037.htm
e http://www.webkinz.com/us_en/
f http://money.cnn.com/magazines/business2/business2_archive/2007/04/01/8403359/index.htm
g http://maplestory.nexon.net/
h http://www.wired.com/gamelife/2009/05/maplestory-tops-92-million-players/
i http://maplestory.nexon.net/CashShop/ItemGallery.aspx

Due to the short history of research relating to the topic, there is no widely accepted definition of virtual goods. Many authors define virtual goods only implicitly through the services they examine (i.e. "virtual goods are goods that exist in a virtual world") (Lehdonvirta 2009). Fairfield (2005) in his work of virtual property defines virtual goods as a kind of code that mimics three legally real world characteristics: rivalrousness, persistence, and interconnectivity. Based on these characteristics, the main difference between virtual goods and information goods such as MP3 files can be captured: virtual goods are rivalrous, meaning that one person's making use of a virtual good excludes others from simultaneously doing so (Lehdonvirta 2009). On the contrary, non-rivalrousness enables the personal creation and distribution of many perfect copies at nearly zero cost. Persistency refers to the idea that virtual goods do not fade after each use and they do not just run on one single computer. Interconnectedness in the context of real world means that all objects can affect one another. Similarly, virtual goods are designed interconnected, which means, for example, players in MMORPGs can experience the virtual goods that are actually controlled by one player.

Besides legal issues of virtual goods, a large number of previous studies relating to virtual goods have focused on such areas within the context of MMORPGs as revenue models (Nojima 2007), game design (Oh & Ryu 2007, Hamari & Lehdonvirta 2010), attributes of virtual goods (Lehdonvirta 2009), and purchase motivations (Nojima 2007, Lehdonvirta 2005, Guo & Barnes 2009).

Among current MMORPGs, there exist two main revenue models. One is based on subscription fees, and the other one is named virtual goods sales. A previous study of revenue model and motivation shows some relationships that include: (1) relationship

between subscription fees, continuous play and social motivation, (2) relationship between virtual goods sales, relatively short play period and high immersion (Nojima 2007). Nojima also points out in her article that virtual goods sales come close to price differentiation, thus immersion into the game will help promote virtual goods sales. Theses findings shed light on why studies of MMORPGs for children are necessary, especially when MMORPGs adopt a virtual goods sales model.

Oh and Ryu (2007)'s case study of two Korean online games examines game design issues in order to accommodate efficient item-selling based payment model. A two-currency model is introduced for game designer to maintain the balance between items obtained by game money and items purchased by real money. The authors suggest that in-game items solely for the purpose of ornamental functions should be designed to be used permanently, while in-game items purchasing by real money should be designed to have variety of terms of use depending on the price paid. Also, introducing function of virtual goods by providing approximate descriptive texts rather than actual data of increment can help protect the sense of achievement among players not buying virtual goods. The authors also suggest that game designers to consider selling virtual goods during specific events such as holidays. Oh and Ryu's article adopts a marketing perspective and provides several design suggestions to game operators. However, in real world, Kart Rider, one of the two cases discussed in their article, has attracted a huge number of children and teenagers to become its players.

According to Hamari and Lehdonvirta (2010), game design can be viewed as one aspect in a company's marketing process aiming to create demand for virtual goods. Thus, instead of examining individual user as the unit of analysis, the authors focus on

how marketing rules and mechanics are built into online games to encourage virtual goods purchases. An exploratory study of 12 popular game platforms is conducted to examine how online games, especially MMORPGs, create and sustain demand for virtual goods through game design. The 12 MMORPGs are chosen from online service providers in Korea, Sweden, U.S., Finland, Germany and China. According to their research, the marketing patterns built in online games can be divided into two categories. The first category consists of overall game mechanics that create segmented contexts for corresponding virtual goods. The second category includes mechanics that are specifically used to create demand and encourage repeated purchases. This study is valuable for research of MMORPGs for children because it tries to conceptualize game design as a marketing process and sheds light on the game mechanics that researchers should examine.

Identifying the attributes of virtual goods is also part of the research relating to virtual goods. From the marketing perspective, one common approach to product design is to identify the product attributes that may influence consumers' purchase decisions (Lehdonvirta 2009). By reviewing the sociological literature of traditional goods, Lehdonvirta identifies three basic perspectives of virtual item attributes: functional attributes, hedonic attributes, and social attributes. By examining 14 existing MMORPGs collected from online service providers in Finland, Korea, U.S., and Iceland, a detailed set of nine virtual item attributes are created. According to his analysis, functional attributes can be divided into two categories: performance and functionality. Visual appearance and sounds, background fiction, provenance, customizability, cultural references and branding are attributes capable of generating hedonic responses. Rarity, as

the most socially oriented characteristic of virtual goods, is the only social attribute included in the nine virtual item attributes, while other attributes such as provenance, customizability and cultural references are also capable of creating and communicating social distinctions and bonds. In summary, this scholarly publication devoted to explore the characteristics of virtual goods provides a systematic approach to understanding and examining virtual goods incorporated in MMORPGs for children.

Among the studies of purchase motivations for virtual goods in the context of online games, Lehdonvirta (2005) examines different motivations an individual may have for purchasing virtual goods based on the theoretical framework of motivations of play in online games proposed by Nick Yee (2007). The model of player motivations in online games demonstrates 10 motivation subcomponents that groups into three overarching components (achievement, social, and immersion) (Yee 2007). The results show that users' purchase motivations of virtual goods are seen as being linked with their experience in virtual worlds.

An exploratory study conducted by Guo and Barnes (2009) in China suggests that factors including efforts expectancy, character competency, the quality of the virtual world system, social influence, virtual item resources, personal real resources, performance expectancy, and self-actualization are important for predicting virtual item purchase behavior in virtual worlds. However, there exists a main difference between the MMORPGs that Guo and Barnes select and the MMORPG I study. All the cases they use adopt subscription fee as the revenue model, while the MMORPG I examine adopt virtual goods sales as the revenue model. Thus, the factors Guo and Barnes indicated are within

the context of virtual item transactions between individual players (player-to-player trade).

In summary, previous studies of virtual goods are largely varied due to different perspectives taken by the researchers. However, MMORPGs, as the platform that virtual goods are applied to, are also mentioned and examined often in the field of virtual goods study. Studies that focus on selling virtual goods as a revenue model contribute to identifying virtual items purchase drivers in the context of gameplay. There are also studies that take game design into consideration. Other studies view this issue from the consumer's perspective by examining their decision-making process.

The purpose of this study is to examine virtual goods pertaining to MMORPGs for children, analyze how virtual goods are incorporated into online games through marketing, and explore how child players can be persuaded to be consumers of virtual goods.

CHILDREN AS CONSUMERS

Based on theories developed by child psychologists and exploratory research conducted by consumer researchers, children have been revealed to have little understanding of the persuasive intent of advertising, viewing it as informative, truthful, and entertaining (John 1999). Thus, marketing and advertising to children can be inherently unfair due to the vulnerability of children as consumers. In this part, I will review some of the important findings and theories on the topic of children as consumers.

During the 1970s, Action for Children's Television (ACT) and the Federal Trade Commission (FTC) became active in criticisms of marketing to children. Critics argued that advertising directed to young children was inherently unfair due to the limited cognitive capacity and life experience held by children. Such public policy concerns have stimulated substantial research on marketing and advertising to children to understand the development of children as consumers. One of the important conceptual that frameworks emerged in this field is called "consumer socialization".

Consumer socialization is defined as "processes by which young people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the marketplace" (Ward 1974). Although the episodes of learning to be consumers could take place throughout one's whole life, the research of consumer socialization mainly focuses on childhood socialization from a marketing perspective. In an article entitled "Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research," the author summarizes a wide range of topics in the body of consumer socialization research, including children's knowledge of products, brands, advertising, shopping, pricing,

decision-making strategies, parental influence strategies, and consumption motives and values (John 1999).

Cognitive Development

Theoretical views on cognitive development are an important fundamental guide to indicate stages of consumer socialization in a context of marketing. Cognition can be defined as the set of processes that enable us to gain information about our environment, such as learning, memory, reasoning, and problem solving (Goswami 1998). The studies of cognition in children have traditionally focused on two major developmental questions, the question of "what develops", and the question of "why". Reviewing previous studies about qualitative changes (stages) in cognitive organization can help us find answers to both questions. The stages mentioned above are referred to cognitive structures that children are able to use in perceiving and dealing with environment at different ages (Ward 1974).

The most well known framework for explaining human being as complex cognitive systems is Piaget's theory of cognitive development. There are four main stages of cognitive development: sensorimotor (roughly birth to 2 years), preoperational (roughly 2 to 7 years), concrete operational (roughly 7 to 11 years), and formal operational (roughly 11 to 15 years) (Ginsburg & Opper 1988). The preoperational, concrete operational and formal operational stages often attract the interest of consumer researchers.

The preoperational stage features children who are learning to use language and to represent objects by images and words. Children at this stage are often egocentric, having difficulty taking the viewpoint of others. Previous consumer research has successfully

illustrated these features. For example, Kunkel (1988) proposes that although most preoperational children can make a perceptual distinction between commercials and television programs based on perceptual differentiation (e.g. ads are shorter or funnier), it does not necessarily mean that they have a conceptual understanding of advertising. Although these findings have proved useful in presenting children's role as consumers, considering emerging media such as the Internet and new forms of marketing such as MMORPGs, it may even become a challenge for today's children to distinguish marketing or advertising from entertainment or programming. Thus, previous findings pertaining to television advertising may not be applicable to future research.

By the time children reach the concrete operational stage, they start to think logically about objects and environments, which means they can consider several dimensions at a time and relate the dimensions in a thoughtful and relatively abstract way (John 1999). Many previous studies show that most children at this stage have an overall understanding of advertising's persuasive intent and bias. Once they possess such knowledge, they will have cognitive defenses toward messages from advertisers (Rossiter & Robertson 1974). Although this notion has been challenged by information processing theories of children development as well as empirical studies of children as consumers, having a general understanding of advertising's selling intent is still viewed as an important developmental milestone for children (Moore 2004).

Finally, in the formal operation stage, children develop in the direction of adult understanding. They start to think abstract propositions logically and become more concerned with ideological problems. With a more adult understanding of advertising

tactics through this stage, children as consumers are more disbelieving of advertising claims (Boush, Friestad & Rose 1994).

Information Processing Theories of Children Development

Although Piaget's theory has proved useful in describing age-related patterns, it is less than adequate as a theory of children's cognitive activity (John 1981). Fist, the Piagetian view does not fully demonstrate why vast differences exist between stages. Second, it cannot explain some empirical findings in the field of children as consumers. For example, previous studies reveal that the knowledge possessed by concrete operational children (roughly 7-11 years) about advertising's persuasive intent is not sufficient for them to cope with specific advertising messages (Brucks, Armstrong & Goldberg 1988). Thus, the information processing theory of children development further explains the types of cognitive abilities evidenced by children as they mature. The information processing theorists view man as a complex machine that possesses elaborate "programs" for dealing with information in intelligent and adaptive ways (Flavell 1977). In the store model of the human information processing system, short-term memory (STM) is the unit that receives information from the environment and stores it fleetingly, while long-term memory (LTM) is the unit in which information is stored permanently and from which it can be retrieved. Information in STM can serve as a cue to stimulate the retrieval of information from LTM. According to John, there exist three types of information processors with different levels of information processing capacity: strategic processors (age 12 year and older), cued processors (roughly 7-12 years), and limited processors (under the age of 7). Strategic processors can apply a set of strategies to store and retrieve information spontaneously. Although cued processors also possess the

strategies for information storage and retrieval, they typically do not apply such capacity unless they are aided by explicit cues. Compared to cued processors, limited processors with no such capacity do not process information even though explicit cues are given.

One major contribution of information processing theories is that they provide further theoretical support for the claimed unfairness of advertising to children, especially 7-12 year olds. While Piaget' approach shed light on children's perception of advertising's persuasive intent, information processing perspectives emphasize children's limited ability to apply such general knowledge to the commercials they are watching. Thus, marketing efforts targeting children such as MMORPGs can be a severe threat to children who rely heavily on explicit cues to use strategies for processing and retrieving information.

In summary, both Piaget's cognitive development theory and information processing theories serve as fundamental theories of the conceptual framework of consumer socialization, providing us important viewpoints for conducting child-centric consumer research. Previous studies of children as consumers play a significant role in public policy making process. However, the vast body of literature that exists on children as consumers are based on traditional forms of advertising (for example, see Robertson & Rossiter 1974; Brucks, Armstrong and Goldberg 1988;), while in today's world, the word "advertising" is no longer appropriate for describing emerging marketing activities targeting children such as online games. In this context, distinguishing marketing from entertainment becomes a more challenging task than distinguishing commercials from programming for children. Also, it may become more difficult for children (roughly ages 7-12) to detect the persuasive intent if marketing is incorporated into entertainment.

Persuasion Knowledge Model

Persuasion knowledge is a domain-specific knowledge about the tactics used in persuasion attempts. It is accumulated through the process of consumer socialization. This knowledge not only helps consumers identify how, when, and why marketers try to influence them, but also helps them adaptively respond to these persuasion attempts in order to reach their own goals (Friestad & Wright 1994). According to Roberts (1983) and Young (1990), children's knowledge of persuasion should be examined separately from their other knowledge such as the understanding of advertising's economic goals. Conceptualizations of children's knowledge about advertising and marketing persuasion have evolved since the 1970s. The logical starting point for research in this field is that there exist significant differences between children's developing knowledge about marketplace persuasion and the persuasion knowledge held by adults.

According to Robertson and Rossiter (1974), a model of five abilities is developed to identify the set of specific knowledge that children should have in order to understand advertising intent. They are: (a) ability to distinguish television commercials from television programming; (b) recognition of the external sources of advertising; (c) perception of an intended audience for the advertising; (d) awareness of the symbolic nature of commercials; (e) experience of discrepancies between products as advertised on television and products that children have personally experienced. In order to attain these five abilities, five associated factors in children are further identified: (a) age, (b) the presence of older siblings, (c) the educational level of children's parents, (d) children's level of interaction with parents, (e) children's peer integration. The last four elements are identified as social factors that also influence children's understanding of persuasion.

Although Robertson and Rossiter's model provides a series of tentative propositions for further research to test, they are context specific and task specific. The television commercials they examine are in the standard format of the 1970s, and the propositions they raise in their article may not be applicable for today's studies (Wright, Friestad & Boush 2005). For example, ads in the 1970s were clearly delineated from programming content, however, in today's media environment, there may be no line between entertainment and marketing. For example, in the context of advergames and MMORPGs targeting children, we do not observe any distinctions between persuasive selling messages and entertainment content, while in fact they have merged into one. Thus, in today's media world, children' ability to distinguish marketing from entertainment may no longer be an effective standard to examine whether children have gained basic persuasion knowledge.

Blosser and Roberts (1985) propose five general types of advertisements that embody different messages: (a) to inform, (b) to teach, (c) to entertain, (d) to sell, and (e) to persuade. Based on the characteristics of different types of intentions, they further define messages with persuasive intentions as those trying to make people do something through bias and manipulation. Roberts (1983) also points out that children's understanding of persuasive intent should be identified as a critical skill for them to play the role of consumers. A model of adult-like understanding of persuasive intent is then proposed by Roberts (1983) as a conceptual framework to examine persuasion-related knowledge held by children. There are three key components in Roberts' model: (a) the message, (b) the source, and (c) the interpretational strategies consumers have. However,

since the late 1980s this model has not been further developed or tested by other researchers.

Wright, Friestad, and Boush (2005) generalize two characteristics of the models mentioned above: (a) no model of adult-like persuasion knowledge is proposed explicitly, which hinders the development of researchers' understanding of children's persuasion knowledge due to the lack of comparisons between adults and children; (b) Compared to the flourish in the research of psychological effects pertaining to persuasion among adults, no such psychological effects among children are identified as an element influencing children's knowledge of persuasion.

The persuasion knowledge model (PKM) is proposed by Friestad and Wright (1994) to remedy these omissions. It is a detailed model of the content, structure, and usage of everyday persuasion knowledge (Wright, Friestad & Boush 2005). There are five key elements involved in this model: (a) target, (b) agent, (c) persuasion episode, (d) persuasion attempt, and (e) persuasion coping behaviors. The authors define a persuasion episode as the directly observable part of a persuasion attempt. If a persuasion episode is detected, then the target will activate the persuasion-related knowledge to conduct his or her behaviors in response to the persuasion attempt. This model also identifies three major coping tasks that motivate consumers to activate their persuasion-related knowledge: (a) holding valid topic attitudes, (b) holding valid agent attitudes, and (c) evaluating the agent's persuasion behaviors. Further, the PKM suggests that in several situations, the target's persuasion knowledge can be more accessible and relevant to a persuasion attempt than his or her topic knowledge and agent knowledge.

According to the PKM, people switch between the roles of "target" and "agent" in everyday life trying to cope with persuasion attempts and to execute persuasion attempts. An individual's persuasion knowledge can be viewed as a variety of beliefs categorized into three domains: knowledge of the topic, the agent, and persuasion. Generally, people learn about these beliefs from firsthand experience and observations. Topic knowledge consists of beliefs about the topic of the persuasive message. Agent knowledge includes beliefs about the persuasion agent (e.g., an advertiser, a salesperson). Knowledge of the topic and the agent is gradually accumulated and used to form valid attitudes of the product and the persuasion agent. Knowledge of persuasion consists of beliefs about (a) psychological activities that the agent try to influence, (b) marketing tactics used to produce such psychological activities, (c) one's coping tactics, and (d) marketers' persuasion goals and one's coping goals. People rely on these beliefs to set up relations between the agent' actions, the psychological activities, and the behavioral outcomes. Beliefs about psychological activities that the agent tries to influence are a central element in persuasion knowledge, because they decide what will be perceived as marketing tactics. According to the PKM, marketing tactics can be viewed as the connection between agent actions and psychological activities, thus conceptions of persuasion tactics that the agents use are also essential to one's ability to cope with persuasion attempts. If consumers cannot recognize the persuasion tactics integrated into agent actions, then cognitive defense may not activate. This can be the threat to children who have difficulty identifying persuasion from entertainment due to their limited persuasion knowledge and life experience.

Although the PKM does not focus exclusively on children, it still sheds light on the development of children's persuasion knowledge. According to the PKM, a child's marketplace persuasion knowledge develops from nothing into an increasingly interrelated and valid structure of causal-explanatory beliefs about: (a) intended psychological goals, (b) intended behavioral goals, (c) advertising tactics, (d) advertising-coping tactics, (e) the array of persuasion-control goals (Wright, Fristad & Boush 2005). As mentioned above, the maturation of some basic cognitive skills and accumulated experience are two key elements that determine the development of persuasion-related knowledge. Thus, children with immature cognitive skills and limited experience are particularly vulnerable to persuasion attempts targeting them. For example, they may have difficulty judging whether what they observe is part of a persuasion attempt due to their limited understanding of marketers' tactics. Also, they are still developing their ability to systematically and automatically activate the beliefs they have from different knowledge structures. Furthermore, children with limited practice of coping with persuasion attempts may have little proficiency with self-regulatory processes such as selecting and executing useful coping tactics. Finally, the ability to discern persuasive intent requires children to view persuasive messages from the agent's perspective (Selman 1980). However, this does not occur until children are about 7 years of age. In summary, learning throughout childhood and adolescence to access and use the three types of persuasion-related knowledge efficiently is probably a challenge (Wright, Fristad & Boush 2005).

Social Cognitive Theory of Motivation

Motivation is often referred to an internal state or condition (e.g., a desire) that serves to activate or energize behavior and give it direction (Kleinginna & Kleinginna 1981a). Psychologists frequently describe the sources of motivation as either intrinsic or extrinsic. Intrinsic motivators are often internal to the person, while extrinsic sources come from outside.

Extensive research has been done pertaining to children's motivations. Praise from others, awards, and gifts can viewed as extrinsic motivators for children (Lepper, Greene, & Nisbett 1973). Some of the intrinsic motivators that children experience through their daily lives are curiosity, a sense of belonging, autonomy, and competence.

Also, previous findings in this field have been applied to the examination of Internet and gaming addiction. It has been pointed out that addicts rely on Internet mainly out of an uncontrollable intrinsic motivation (Young 1998). On the one hand, online games often attract players through offering many extrinsic rewards, such as money, fame, and power. On the other hand, players are influenced by the intrinsic need to feel competent, related and autonomous. Four critical factors that determine whether an extrinsic motivator will undermine intrinsic motivation are: expectancy, relevance, tangibility, and contingency (Eisenberger & Cameron 1996). In a research conducted by Wan and Chiou (2007), the authors examine the psychological motivations of Taiwanese adolescents who are addicted to online games. The results show that adolescent players with addictive inclinations exhibit higher intrinsic motivation than extrinsic motivation, whereas nonaddicts exhibit higher extrinsic motivation. When the extrinsic motivators of online games are less expected, of low relevance, more intangible, and highly contingent,

the more attractive they are. Thus, players will show higher intrinsic motivation toward online gaming.

Consumption Motives of Children

Another facet of consumer socialization is the acquisition and adoption of motives related to consumption. In research to date, two contrasting motives have been examined: social consumption motives and economic motivations (John 1999). Social consumption motives are referred to the motives relating to conspicuous consumption and social expression. Economic motivations focus on economic features of products. Previous studies in this field have contributed to identifying the factors that associate with children's learning of consumption motivations. According to Churchill and Moschis (1979), both economic and social motivations are associated with four factors: parental influence, peer group norms, mass media, and television commercials. For example, peer group norms often have positive influence on social motivations and negative influence on economic motives. It is also important to point out that economic motives are gradually encouraged with age.

PURPOSES OF THE STUDY

Based on previous studies, there is no doubt that children are gradually socialized into consumers. They develop their cognitive ability, information-processing capacity, persuasion knowledge as well as consumption motives throughout childhood. From the perspective of cognitive ability, children progress to adult-like thought patterns gradually and learn to deal with complex sources of information at the same time. Children's ability to acquire, store, organize, and retrieve information is also developed through their interactions with the world. Moreover, children form their knowledge structures of persuasion through daily practices relating to persuasion. The consumption motives among children are also modified through their exposure to more information. Thus, it is evident that children without an adult-like understanding of consumption are vulnerable to marketing and advertising targeting them. The topic of children as consumers has raised a lot of ethical concerns. In today's media world, new technology has posed new challenge to children's advocates. Considering the recent emergence of online games targeting children, it is necessary for researchers to continue to examine children's vulnerability as a marketing audience because marketing and advertising can no longer be distinctive in an online marketing context. In other words, the line between entertainment and persuasion may no longer exist. Thus, how can we indentify persuasive intents when there is no such line? This study can be viewed as the first step to answer this question. I'm trying to describe this new line by identifying how virtual goods are incorporated into online games, and to assess what children know about such entertainment as a tool for persuasion.

THE RESEARCH QUESTION

- How are virtual goods sold to children through online games?

METHODS

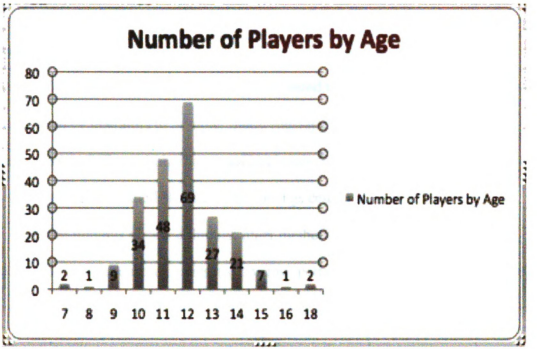
Case Study of 51mole

The case I examine in this study is 51mole, a Chinese MMORPG for children, which provides its services to 7-12 year olds.

In 2007, a survey conducted in three major cities of China shows that 40.00% of the 1200 subjects who are 6-12 year olds use Internet as a source for gameplay. Statistics also show that there were 1.19 million Internet users under the age of 10 and almost 105 million users were 10-19 year olds (2008 China Internet Network Information Center Annual Report). In May 2008, the launch of 51mole got great attention from children, parents, educators as well as mass media. It was widely considered as the first online game suitable for children in China. Two months after its launch, other game companies began to tap into this market. To date, there are more than 20 online games targeting children. However, during the past two years, 51mole has been the most popular one with more than 50 million registered accounts. Several months ago, Baidu (the largest search engine in China) launched its popular searches list for year 2009, and 51mole was listed as one of the top 10 keywords. According to my examination of a survey posted by the 51mole designers to the official discussion forum of 51mole, 221 children respond to the question about their ages (See Figure 1) and 219 children respond to the question about their gender. Among the 221 children who play 51mole, 199 of them are 10-14 year olds.

The age range of 51mole players is from 7 to 18. 43.8% of the players are boys, while 56.2% of them are girls.

Figure 1 Number of Child Players of 51mole by Age



With its revenue model of selling the premium virtual pet called "Super Lahw" and premium virtual decorations to children, 51mole has recently started to make a profit.

Sources of Evidence

Researcher engagement is the most important source of evidence for my study of 51mole. Previous studies have identified specific ways to collect relevant data of game analysis through engagement. Malliet (2007) distinguishes four strata of engagement: superficial play, where a researcher plays a game for a few minutes; partial completion, where a few (sub) missions are finished; repeated play and expert play, where a (part of a) game is repeatedly being completed at different levels of difficulty and mastery. Depending on the purposes of my analysis, each type of engagement can be useful. The time devoted to game engagement should be determined by specific questions that

researchers want to examine. For example, it may be sufficient to play 51mole superficially when I attempt to make a classification of the virtual objects appearing in the game, since a number of catalogs of virtual items are already available in 51mole.

Documentation, especially messages posted by children to three popular discussion forums of 51mole players are quite valuable (See Table 2 for a list of the discussion forums examined in this study). Compared to the Official Discussion Forum of 51mole run by operators of 51mole, Baidu Message Board of 51mole and Baidu Message Board of "Super Lahw" are unofficial ones that are maintained by China's largest search engine named "Baidu". The postings can be applied in my study to triangulate the findings obtained through other methods or sources. The postings are sampled based on three major topics: (a) postings pertaining to children's experience of virtual goods usage, (b) postings showing children's understanding of how virtual goods are integrated into the game, and (c) postings relating to children's general attitudes toward the overall game. Also, news clippings and articles of 51mole appearing in the mass media will be another source of evidence. The use of documentation will help to corroborate and augment evidence from other sources. For example, in the case of 51mole, documentation pertaining to the purchase behavior of the premium virtual pet among children can augment the evidence from analysis of the game itself.

Table 2 Discussion Forums Examined in the Study

Title	URL
Official Discussion Forum of 51mole	http://bbs.61.com/frame.php?frameon=yes&referer=http%3A//bbs.61.com/index.php%3Fgid%3D4
Baidu Message Board of 51mole	http://tieba.baidu.com/f?kw=%C4%A6%B6%FB%D7%AF%D4%B0
Baidu Message Board of "Super Lahw"	http://tieba.baidu.com/f?kw=%B3%AC%BC%B6%C0%AD%C4%B7

Gameplay Areas of Analysis

In this study, I focus on the game mechanics and game elements of 51mole, trying to understand how virtual goods are incorporated into 51mole and how children can be persuaded to purchase such virtual goods.

The specific components of 51mole I will examine cover four areas. These four areas are proposed by Consalvo and Dutton (2006) as a methodological toolkit for the qualitative study of games includes: object inventory, interface study, interaction map and gameplay log (See Table 3).

Table 3 A Methodological Toolkit for Game Analysis (Consalvo & Dutton 2006)

Object Inventory	**Interface Study**	**Interaction Map**	**Gameplay Log**
A list of the important properties of in-game virtual objects	The study of on-screen information that provides players with information concerning their in-game status and activities	A study of the choices that players are offered in regards to interaction with player characters and non-player characters	The study of the overall "look and feel" of the virtual world that the game constructs

In order to understand the role that objects can play in a game, an object inventory can be created to list various properties of each virtual item. In the case of 51mole, creating an object inventory can help to analyze the properties that virtual goods have compared to other virtual items, thus provide me a better understanding of how virtual goods are incorporated into the game for children. The interface often include on-screen information about the life, health, location or status of the characters, as well as various menus that give the player more control over manipulating elements of gameplay. According to the interface study, we can acquire a general idea of how information about

virtual goods is conveyed to child players massively and repeatedly through static components of the game. Compared to object inventory and interface study, interaction map offers a dynamic way to examine MMORPGs. This method involves examining the choices that game players are offered when interacting with other player characters, and/or with non-player characters. In the case of 51mole, a large amount of game tasks are conveyed to children through the interactions or conversations between child players' characters and non-player characters. Besides the interface mentioned above, non-player characters in 51mole is another sort of game element that is used to persuade child players to purchase virtual goods in order to complete the updated tasks. Gameplay log is about the overall "world" of the game and the emergent gameplay that can come into being. The game world or system comprises such elements as the construction or deployment of saving mechanisms in the game, presentation of avatars in the world, and the overall "look and feel" of the complete world that the game constructs. In the case of 51mole, I will focus my gameplay log on the game mechanics and the revenue model that 51mole constructs in order to sell virtual goods.

ANALYSIS AND RESULTS

Virtual Goods Incorporated in 51mole

Object Inventories of Virtual Goods in 51mole

The revenue model of 51mole is virtual goods sales. Like the two Korean games introduced by Oh and Ryu (2007) in their article, 51mole also adopts a two-currency model in its virtual world. This model consists of "Mi-Coin" and "Mole Bean" as the two forms of currency. "Mi-Coins" is the prepaid in-game currency that can only be purchased with real money. 1 RMB (Chinese currency) equals to 1 "Mi-Coin", and 1 USD equals to 2 "Mi-Coins". Detailed information of how to purchase can be found easily through gameplay. Besides online payment through credit card and PayPal, children can also purchase refill cards at convenience stores, or call to pay through telephone bill. "Mole Beans", as the other form of currency, is the game points that children earn through various activities in the gaming environment.

Based on the two-currency model, I define virtual goods in 51mole as virtual objects that can only be purchased through "Mi-Coins" with real money. In contrast, virtual items in this game are referred to virtual objects that can be gained through paying "Mole Beans". After identifying the key difference in definition between virtual goods and virtual items, we need to further examine the characteristics of virtual goods in 51mole and think of the following questions proposed by Oh and Ryu (2007) in their article: how 51mole is designed to balance between virtual goods and virtual items, how the functions of virtual goods are abstracted in 51mole, and how events and communities can be incorporated into virtual goods sales.

There exist two categories of virtual goods in 51mole. One is the premium virtual pet called "Super Lahw", and the other one is premium virtual decorations for the moles and their virtual houses. There also exist two categories of virtual items corresponding to virtual goods in 51mole: the original virtual pet called "Lahw" and regular virtual decorations (See Table 4). As mentioned above, these virtual items can be gained through paying "Mole Beans". Due to the vast differences between the two forms of virtual goods, separate object inventories focusing on each form are created in order to compare virtual goods with virtual items (See Table 5 & Table 6).

Table 4 Categories of Virtual Goods and Virtual Items

Categories	Virtual Goods (need to be purchased with real money through "Mi-Coins")	Virtual Items (can only be obtained through "Mole Beans")
Virtual Pets	"Super Lahw" 	"Lahw" 
Virtual Decorations	Premium Decorations	Regular Decorations

As introduced before, both "Lahw" and "Super Lahw" serve as virtual pets for children's moles. Compared to "Super Lahw" with its price of 10 RMB or 5 USD per month, "Lahw" is just a virtual object that can be gained by game points. Significant differences exist between "Super Lahw" and "Lahw".

Taking care of the "Lahw" for a relatively long time period requires children to devote a certain amount of time and game points. For example, virtual supplies need to be purchased with "Mole Beans" regularly in order to feed the "Lahw", while providing few benefits for gameplay. Although "Lahw" can take virtual courses to acquire certain

skills, the skills are often not as attractive and powerful as those that "Super Lahw" has. In contrast, as the main virtual good that 51mole is designed to promote, "Super Lahw" covers a variety of functions in the game world.

By examining these two forms of virtual pets in the context of 51mole, some important characteristics of "Super Lahw" are generalized using Lehdonvirta's model of virtual item attributes. First, "Super Lahw" serves several functional attributes. Players with "Super Lahw" are offered 5000 "Mole Beans" per week. This amount of "Mole Beans" usually takes children who do not have the "Super Lahw" a long time to gain through playing flash games. The "Super Lahw" also provides child players accesses to special game tasks that are not available for moles with "Lahw". A variety of functional virtual props are also available for players with "Super Lahw" to enhance their performance.

Owning the "Super Lahw" also offers players a 50% off discount for purchasing premium decorations. Second, the "Super Lahw" also demonstrates the attributes that can give rise to hedonistic pleasure among child players. Many special virtual props and decorations associated with "Super Lahw" are of little functional use but can generate hedonistic sensations. Last but not the least, social attributes of virtual goods are especially prominent in the context of 51mole. In the gaming environment of such socially-oriented online hangouts as 51mole, gameplay can be understood as the user-to-user interactions aimed at establishing social distinctions and hierarchies rather than competitive performance (Lehdonvirta 2009). Thus, virtual goods with functional and hedonic attributes can simultaneously have a social role. For example, the "Super Lahw" virtually emphasizes the functional, hedonic and aesthetic privileges that players can own

once having it. In the gaming environment of 51mole, children can be influenced by those privileges via observations as well as interactions with other players who have 'Super Lahw". Thus, social attributes of "Super Lahw" can be viewed as the ultimate reason that contributes to its desirability.

Decorations for both the character and virtual house are sold through six catalogs, among which four are about premium decorations that charge real money. Compared to regular decorations, premiums ones are more associated with special themes and occasions that can help to express players' personal interests and identities (e.g., constellations). Also, in order to justify the purchase with real money, such artificial features as scarcity, high quality and special designers are added to premium decorations. For child players who immerse themselves in the virtual world of 51mole, these features can be compelling reasons to buy virtual goods.

Children's Topic Knowledge of Virtual Goods in 51mole

The topic knowledge children have about the "Super Lahw" and premium decorations in 51mole will influence the formation of valid attitude toward virtual goods in children. In order to explore what children know about the virtual goods in 51mole, I focus on examining two aspects of the beliefs in 51mole players' topic knowledge structure: economic aspect and social aspect. According to my pilot study, knowledge about the economic and social aspects of virtual goods in 51mole is prevailing among the threads posted by children. These two aspects are also consistent with the two contrasting consumption motives examined in previous research. Thus, by revealing children's beliefs of virtual goods in 51mole, I can further understand how topic knowledge interacts with consumption motives to influence the formation of valid topic attitude

among children. By examining the posts appearing in the discussion forums, I find that child players of 51mole commonly point to the social attributes of virtual goods, especially when they talk about the "Super Lahw". The privilege of extra 5000 "Mole Beans" per week for "Super Lahw" owners is frequently mentioned by 51mole players. Also, the knowledge about distinctive virtual decorations and props available for "Super Lahw" owners is also dominant among the posts.

Several 51mole players describe their knowledge about the "Super Lahw" as follows:

> *"Super Lahw" owners are always rich, with a lot of "Mole Beans".*
>
> *I love "Mole Beans", and the "Super Lahw" can provide me a lot, which makes me so different.*
>
> *I really admire those moles with "Super Lahw". They can always wear so many special and beautiful clothes*
>
> *You can get special decorations if you are a "Super Lahw" owner.*

A large amount of posts also talk about the economic aspect of virtual goods. However, rather than demonstrate beliefs about how to evaluate and select virtual goods considering economic features, children only show their hope to get the virtual goods for free. They provide numerous suggestions to the designers of 51mole in order to obtain "Super Lahw" through gameplay. Several 51mole players describe their knowledge about the virtual goods as follows:

> *I hope "Super Lahw" can be gained through complicated game tasks, thus I don't need to spend money. It just makes things easy.*
>
> *If "Lahw" can be upgraded to "Super Lahw" after taking several courses, that will be great.*
>
> *The premium clothes are so beautiful. I hope I can get them through "Mole Beans".*

Table 5 An Object Inventory of Virtual Pets in 51mole

Properties	**"Super Lahw"**	**"Lahw"**
General Description	The virtual pet that can be purchased with real money	The virtual pet that can be adopted in game for free
Cost	10 RMB or 5 USD through "Mi-Coins"	• 1000 "Mole Beans" to own one • More "Mole Beans" spent to buy virtual commodities in order to take care of it
Validity Period	One month per purchase	No validity period
Single/Multi-Attribute(s)?	Multi-attributes Functional: • Gets extra 5000 "Mole Beans" per week • Provides accesses to special game tasks • More inventory space • Owns the privilege to buy premium decorations at a 50% off discount Hedonic: • More hedonic virtual props available (through paying "Mole Beans") • More aesthetic virtual decorations available (through paying "Mole Beans") Social: • Offers Privileges • Distinctive virtual props and decorations available (through paying "Mole Beans") • The identification of "Super Lahw" owners	Single-attribute: Functional: • Gains special skills after taking virtual courses and help moles to complete game tasks
Evolvement Levels	Six levels depending on how many months children have purchased it for 	Four levels gained through taking care of it 
Scarcity	Not scarce	Not scarce

Table 6 An Object Inventory of Virtual Decorations in 51mole

Properties	**Premium Virtual Decorations**	**Regular Virtual Decorations**
General Description	Virtual decorations that need to be purchased with real money	Virtual decorations that can be gained for free
Cost	1-9 "Mi-Coins" (Equals to 1-9 RMB or 0.5-4.5 USD)	200-2000 "Mole Beans"
Validity Period	No validity period	No validity period
Categories	• Decorations for the mole • Decorations for the virtual house	
Features	Scarcity: • Available in a limited quantity • Available for a limited period of time Quality: • Higher quality compared to regular decorations Design: • Better design compared to regular decorations • Popular non-player characters as the designers Themes: • Special occasions • Various occupations and working environments • Personal identities such as well-behaved girls or fans of sports	Not scarce Regular quality Do not emphasize the design Implicit themes
Single/Multi-Attribute(s)?	Multi-attributes Hedonic: • Users derive hedonistic pleasure from experiencing them • Generate visual stimulation for players Social: • A status symbol • Social distinctions	Single-attribute Hedonic: • Users derive hedonistic pleasure from experiencing them • Generate visual stimulation for players
Update Rate	Nonscheduled	Once a week

By examining 51mole players' knowledge about virtual goods in the context of consumer socialization of children, some important findings can be concluded. First, the beliefs that 51mole players hold about the social aspect of virtual goods are positively linked to children's desire for virtual goods. According to previous studies, such social motives are often viewed as undesirable socialization outcomes, while economic motives typically viewed as more desirable outcomes (John 1999). However, in the two discussion forums I examine, most children demonstrate their application of social motivations to virtual goods, while few children show their knowledge about the economic features or evaluations of virtual goods in 51mole. The desire for free virtual goods can be explained by the lack of basic economic knowledge about virtual goods among children. Second, the topic knowledge that children have plays a key role in forming valid attitudes toward the topic. However, without the understanding of the functional and economic features of virtual goods, children may not be motivated to form valid topic attitudes about the "Super Lahw" and virtual decorations in 51mole.

Gameplay Log of 51mole

According to Hamari and Lehdonvirta (2010), the game mechanics and game elements commonly used in games and online hangouts can be viewed as a set of marketing techniques designed to sell virtual goods. Thus, an understanding of how the game mechanics and game elements work is a starting point for us to explore how children can be persuaded.

Currently, the virtual world of 51mole consists of 25 scenes (See Figure 2) with each serving its basic functions (See Figure 3) and containing unique flash games (See Figure 4). While the general gaming environment does not change much during a

relatively long period of time, the virtual world of 51mole is updated every Thursday night. During every weekly update, new game elements will be added into the game, while some existed game elements will be no longer available. For example, game tasks and virtual items relating to Christmas holiday are just offered during the holiday week. Certain skills or special virtual items gained every week will be kept in virtual warehouses for children's moles, so children can apply them when needed in the future. Thus, it is important to point out that, the skills and virtual items children can own for their avatars are the elements that drive them to play 51mole constantly.

Figure 2 Game Scenes of 51mole

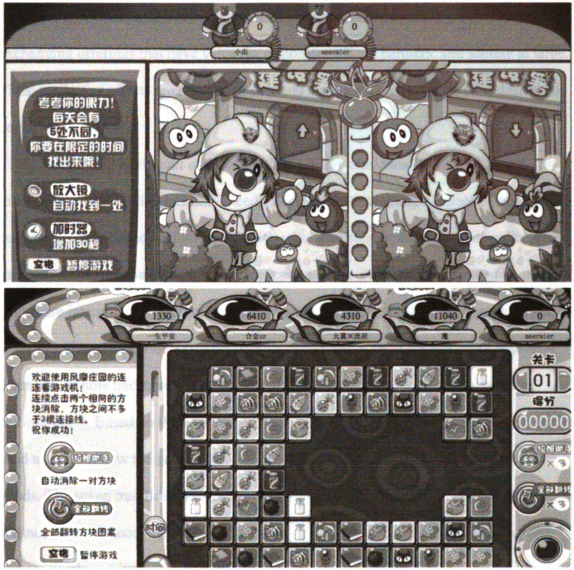
In the virtual world of 51mole, children assume the role of moles and take control of the moles' actions. Once registered, a virtual house as well as a virtual farm is assigned to the child's mole. One of the most popular activities among child players is to add decorations to these places. There are also a variety of decorations available for children's moles. Some decorations can be obtained for free, while other premium ones

have to be purchased with real money. Children can also adopt the virtual pet called "Lahw" for free, or purchase the premium virtual pet called "Super Lahw" with 10 RMB (Chinese currency) or 5 USD.

Figure 3 The Virtual Shopping Mall in 51mole

There exist two forms of games in 51mole: flash games and weekly game tasks. Flash games are relatively simple and not affected by every update, while weekly game tasks are usually based on a storyline and require children to complete within one week. Compared to flash games that exist in specific scenes, weekly game tasks are often more complex with more than one scene involved. Thus, it is time-consuming for child players to implement various actions through different scenes in order to complete the tasks. By examining several popular discussion forums for 51mole players, it is showed that children are very concerned about accomplishing game missions quickly and efficiently. They rely on the game walkthrough and game guides posted to these forums to complete the tasks, thus gain new skills and items for their moles.

Figure 4 Flash Games Integrated in 51mole



A variety of interaction opportunities are offered for children in the gaming environment. One can interact with others through viewing their profiles, visiting their virtual houses and farms, chatting with them, adding them as friends, and playing simple games together.

Game Mechanics of 51mole as a set of Marketing Techniques

Marketing is defined by the American Marketing Association (AMA) as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, client, partners, and society at large." Thus, marketing efforts are made to understand customers and generate their desires for certain products.

According to Hamari and Ledhonvirta (2010), marketing is not only about indentifying and meeting customer needs, but also about creating the needs among customers. Hamari and Ledhonvirta (2010) view this issue in the context of online games and propose the notion that game mechanics and game elements incorporated in online games are intentionally designed to create specific in-game needs among game players.

In Hamari and Ledhonvirta (2010)'s article, the authors further provide several examples of how traditional marketing concepts can be linked with online gaming environments. Based on their analysis, I identify several marketing techniques that can be used to explain how the gaming environment of 51mole is constructed to sell virtual goods. The seven traditional marketing techniques are: segmentation, differentiation, planned obsolescence, mediums of exchange, inventory mechanics, special occasions, and artificial scarcity.

Segmentation

51mole offers children the game mechanics to train their moles and pets from entry level and thus children can gradually rise in status through gameplay progresses. Considering children as its target players as well as the game rules of 51mole, this mechanics can be viewed as a segmentation tactic to create the demand for virtual goods. First, fast progress toward higher levels depends on players' time investments to 51mole.

However, the target children of this game are 7-12 year olds who are still students in elementary schools and have limited time playing this game. Second, the game rules of 51mole further limit the time that children can devote to gameplay. For example, 51mole is not available from 12am to 6am due to the shutdown of its servers. And once playing the game for more than four hours per day, children will be reminded by the slow down of the speed of progress.

Thus, virtual goods that address the need to speed up the progress toward higher levels can be attractive to child players. With the help of virtual goods, players can utilize their time spending on online games more efficiently to gain levels. In the context of 51mole, the "Super Lahw" as a form of virtual goods addresses this need.

Differentiation

According to Hamari and Ledhonvirta (2010), differentiation can be divided into two general subsets: vertical and horizontal differentiation. Vertical differentiation as a marketing tactic often focuses on the differentiation of product attributes that are comparable to other products' attributes in the same product category. Horizontal differentiation can be achieved through the offering of various product categories.

Vertical differentiation is widely applied in 51mole. For example, in the product category of virtual clothes for children's moles, two series of clothing are currently available. These two series are differentiated by two themes of clothing sets: the constellations and the Chinese Zodiac. Although the two series focus on different themes, they are comparable in regards to the extent of expression of personal identification. 51mole also adopts a horizontal differentiation tactic by designing differentiated virtual goods that are not explicitly comparable. A basic form of horizontal differentiation in

51mole is the offering of various categories of moles' clothing (e.g., shoes, vests, accessories), which are not mutually rivalrous. Moreover, the addition of the virtual house as a game element further creates other meaningful contexts for offering virtual decorations for sale. The differentiations toward moles' premium virtual decorations in 51mole are presented in Table 7.

Planned Obsolescence

Planned obsolescence refers to the marketing technique that a product makes itself obsolete through fashion cycles or technological developments (Kotler & Keller 2006). In many MMORPGs for adults, planned obsolescence is a tactic widely used for stimulating repeated purchases. Virtual goods, especially virtual props that can help improve performance, often gradually degrade or break with time or usage. In 51mole, planned obsolescence can be applied to the design of "Super Lahw". Although this form of virtual pets does not break gradually when used in the virtual world, it is designed with artificial durability and has a set expiration date. After the expiration date, it will automatically turn to the free regular "Lahw". From a marketing perspective, this shows that the operators of 51mole control exactly when and how the item ceases to function or exist. The purpose of this strategy is to encourage child players to make repeated purchases and to enable sales to be sustained over a long period of time (Hamari & Ledhonvirta 2010).

Mediums of Exchange

As mentioned above, two forms of currency exist in the gaming environment of 51mole. "Mole Beans" are designed as rewards for game play, while "Mi-Coins" are used as a medium of exchange between real money and virtual goods. Child players

usually purchase certain amount of "Mi-Coins" with real money in advance and then get the actual virtual goods they want through "Mi-Coins". Hamari and Lehdonvirta (2010) view the presence of such mediums in various online games as the marketing tactic that gives rise to cognitive and psychological biases among players. According to a previous study cited by Hamari and Lehdonvirta (2010), the presence of such mediums can influence consumers' decision-making process through three types of illusion: (a) an illusion of advantage to an otherwise not so advantageous option, (b) an illusion of certainty to an otherwise uncertain option, and (c) an illusion of linearity to an otherwise concave effort-outcome return relationship (Hsee et al. 2003). Their experiments show that people in a setting where a medium is presented may select the options that were originally less desirable to them. Thus, for child players who are still developing their cognitive and psychological abilities, such biases can be a real threat for them.

Inventory Mechanics

In 51mole, players have separate inventories for different types of virtual items. Because of the limited slots in each inventory, children often have to consider disposing of some of the items. Then, the need for more slots in inventories is created, and the "Super Lahw" is offered as a virtual good that addresses this need. Owners of the premium virtual pet can get 1000 slots in their inventory of virtual house decorations.

The inventory mechanics of 51mole is not only used to promote the 'Super Lahw", but also used as a means to increase sales of virtual goods. Decorations for moles and decorations for virtual houses are stored in different inventories, which actually increase the overall number of slots available. This further enables child players to

purchase more virtual goods, because the two types of premium virtual decorations are not rivalrous to the extent that they do not compete with each other for slots.

Special Occasions

From a marketing perspective, promotions associated with special occasions can be an effective way to increase sales. Occasions that provoke purchase behavior in real world may have the same effect in the virtual world. Halloween, Christmas, New Year's Eve, birthdays, and even the first week of school have been integrated into 51mole in order to promote virtual goods sales. Designed with artificial scarcity, virtual goods relating to special occasions are often desirable among child players. Besides the traditional holidays and occasions, 51mole also creates its own in-game events for virtual goods sales. For example, during the week that a virtual sports meeting was held for the virtual pets, premium sets of sports clothing and other accessories were promoted to child players.

Artificial Scarcity

In 51mole, scarcity is used as an important indicator of high quality and thus to differentiate premium virtual decorations from regular virtual decorations for free. Some virtual goods are scarce due to their small quantities, and others are scarce because of a limited offering time. The perception of scarcity can be achieved through marketing communications (Hamari & Lehdonvirta 2010). In the virtual world of 51mole, the scarcity of virtual goods is explained by the information appearing on the back cover of two virtual catalogs of premium virtual decorations:

> *Premium decorations are those decorations that were once offered but then not available due to limited quantities and offering times. In 51mole, only quite few children can own them. Because premium decorations are*

extremely precious, they can only be bought through "Mi-Coins" with real money.

In summary, the virtual world of 51mole that so many child players are immersed in is essentially an intentionally built marketing environment for selling virtual goods. Child players of 51mole are immersed in a virtual world that is intentionally built as an outcome of marketing to promote virtual goods. The online gaming world itself serves as an effective marketing tool for persuasion. As a result, children face new challenges in terms of their capacity to interpret and assess marketing messages in an online gaming environment.

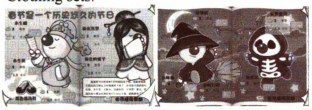
Persuasion Methods Integrated in 51mole

In this section, an interface study as well as an interaction map is presented to reveal the integration of persuasion into game elements of 51mole, more specially, to reveal the persuasion methods appearing in 51mole. According to the Persuasion Knowledge Model (Friestad & Wright 1994), knowledge of persuasion methods as a set of beliefs about the awareness and understanding of the form of persuasion is one of the three pieces of knowledge held by consumers. This piece of persuasion knowledge can be essential to a consumer's ability to cope with persuasion attempts.

If persuasion attempts cannot be recognized through consumers' use of persuasion methods knowledge, then the other two knowledge structures may not be evoked to defend against advertising and marketing tactics.

In the context of 51mole, if child players cannot detect the persuasion methods designed to promote the "Super Lahw", then the three knowledge structures may not be activated and interacted with each other to cope with persuasion attempts.

Table 7 The Differentiation of Virtual Goods

	Vertical Differentiation
Horizontal Differentiation	Clothing sets: 
	Hair Styles: 
	Shoes: 
	Accessories: 
	Portrait Backgrounds: 

According to Friestad and Wright (1994), persuasion methods are referred to the "agent action-psychological event connections", which "include such things as appeals to nostalgia or to family values, telling a story, using cartoon characters or well-liked music, claiming scarcity of the advertised product, or comparing two brands". Based on such definition and examples of persuasion methods, an examination of the interface and interaction map existed in 51mole can help us identify the persuasion methods incorporated in the game to influence children.

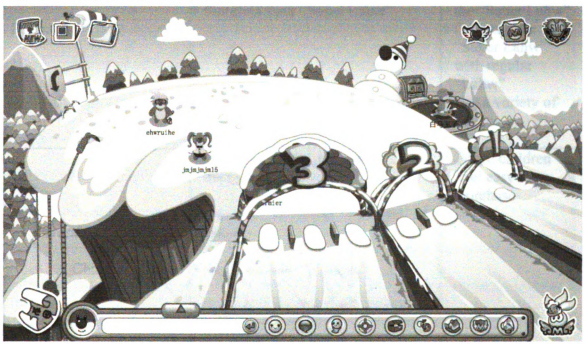
An Interface Study

In 51mole, players interact with the game through an interface that closely resembles those of other online games. As showed in Figure 2, three interface elements in each top corner plus those at the bottom allow players to perform game-related actions such as casting spells or turning on special abilities. According to my observation, each interface element presents one of the following functions: (a) providing information of the game tasks and virtual items that are newly added or currently available in 51mole; (b) presenting the statuses of the child's mole and virtual pet; (c) changing scenes for children's moles; (d) providing the "chat box" and other opportunities for players to communicate with each other; (e) controlling the volume of background music; (f) providing information of how to ask other children to register for the game; and (g) providing information about the "Super Lahw".

As presented in Figure 5, the icon in the right bottom corner stands for the "Super Lahw". When clicking it, seven categories of more specific information about the "Super Lahw" are available to children. According to my examination, all these information can be viewed as persuasion to children due to their application of persuasion methods (See

Table 8). From a persuasion perspective, the seven categories of information can be further divided into two main categories based on their differentiated goals: (a) persuasive information that tries to influence children to form a positive attitude toward the "Super Lahw" and (b) persuasive information focusing on behavior change. In order to achieve these goals, various persuasion methods are incorporated in the information targeting child players. These methods play the role of connecting the persuasive information with children's psychological activities.

Figure 5 The Interface of 51mole



For example, the designers of 51mole present newly added priorities for 'Super Lahw" owners through flash animations, beautiful images and a child-like language, trying to grab children's attention. Also, in order to make the "Super Lahw" appealing among child players, a story is created to explain why the "Super Lahw" is special and powerful in the virtual world of 51mole. Moreover, comparisons between the "Super

Lahw" and regular "Lahw" are presented to introduce the privileges that the "Super Lahw" own and further create the desire for the "Super Lahw" among players.

Table 8 Persuasion Methods Integrated in the Interface of 51mole

Goals of Persuasion	**Categories of Persuasive Information**	**Persuasion Methods**
Positive Attitude Formation	• Newly added priorities for "Super Lahw" owners • Introduction of the "Super Lahw" • Summon your "Super Lahw"	• Stir children's curiosity • Make children like the product • Tell a story about the "Super Lahw" • Compare the "Super Lahw" with regular "Lahw" • Use a variety of images
Favorable Behavior Change	• Purchase the "Super Lahw" through "Mi-Coin" • Purchase "Mi-Coins" with real money • My "Mi-Coin" Account • A list of the convenience stores selling refill cards for "Mi-Coin"	• Make children feel easy to purchase

Persuasion methods are also integrated into the information pertaining to purchase behavior. A variety of payment methods are explained with detailed information and illustrations. Customer service is available 24 hours a day and 7 days a week for children who have problems processing their payment. Thus, children may perceive it easy for them to carry out the purchase behavior.

The use of such persuasion methods in designing the persuasive information can have a significant influence on children. Due to their limited cognitive ability and persuasion knowledge, children may form a positive attitude toward the virtual goods without identifying the information as the results of persuasion methods, and further have an intention to purchase the virtual goods.

Besides the persuasion methods incorporated in the interface to sell the "Super Lahw", other persuasion methods such as claiming the scarcity and distinction of the virtual goods are applied to the information on the back covers of catalogs of premium virtual decorations. In order to produce the connections between virtual goods and child players' psychological activities, some virtual goods are described as extremely precious ones with high quality, limited quantity, while others are intentionally presented as products designed by famous in-game non-player characters.

The Interaction Map of 51mole

In the gaming environment of 51mole, children interact a lot with non-player characters in order to complete game tasks. Compared to the mole characters created by children, non-player characters are embedded into 51mole through game design. Thus, by examining the interaction map of 51mole, especially the conservations designed between players and non-player characters, we will have a better understanding of how marketing persuasion tactics are incorporated into game design.

Currently, there are nine dialogues relating to six scenes available in 51mole as interactions between players and non-player characters to sell the virtual good called "Super Lahw". These dialogues exist in six scenes, and relate to seven game tasks. Through my gameplay, four characteristics of the interaction map of 51mole are observed

pertaining to how persuasion methods are incorporated in dialogues between players and non-player characters.

First, more than one dialogue can be created for the same game task in order to increase virtual goods' attraction. For example, there is a virtual robot dog in 51mole that is only provided to players who have the "Super Lahw". When children enter the scene of a public farm, the distinctive dog comes to children's moles and introduces itself as a keeper of children's own virtual houses and farms. Children who are interested can rent it from the house of inventions. However, almost the same content is also presented in the dialogue between players and the inventor of the robot dog in the scene of the inventor's virtual home. Thus, such repeat of the information can be a persuasion method used to build the awareness of the special virtual items that are only for "Super Lahw" owners.

Second, the relationship between game tasks and the virtual goods is usually implicitly stated or even disguised in dialogues designed for interactions between players and non-player characters. Taking the robot dog as an example again, the dialogues mentioned above do not include such information as the requirement for children's moles to have one robot dog. When children arrive at the house of inventions to rent the robot dog, however, they find out that it can only be rent by players with the "Super Lahw". Another example is the dialogue designed between players and a non-player character for a game task to obtain cherry blossoms. The character guides children to get the cherry blossoms from another scene of 51mole, which is only open to players with "Super Lahw". But in the dialogue, this game mechanics is only mentioned implicitly as "this is not a scene that you can enter easily". From a persuasion perspective, such dialogues are intentionally designed to grab children's attention, make children like the virtual items,

and thus foster the desire in them to purchase the "Super Lahw" in order to get privileges and special items for their moles.

Third, as mentioned in the section of gameplay log of 51mole, my examination of the threads posted to popular discussion forums of 51mole shows that it is the in-game skills and virtual items that mainly drive children to play the game constantly. Most of the players are inclined to talk about the skills and items they own for their moles rather than the process to complete game tasks or to gain virtual items. Thus, some interactions are embedded in the situations where players are ready to get virtual items. Such interactions prevent players from collecting virtual items without virtual goods, thus create the demand for virtual goods among children. For example, a rare type of butterfly can be caught by both regular players and players with "Super Lahw". But when children are going to add it to their inventories, two squirrels pop out and start a conversation with players. If players want to keep the butterfly, their virtual pets need to dance in front of the squirrels. However, the particular kind of dance that the squirrels require is only taught to "Super Lahw" through virtual courses. For regular players who have read about the rarity of the butterfly and have seen it, such dialogue creates a strong connection between the butterfly and a demand among children to purchase the "Super Lahw".

Last but not least, most of the dialogues I examine end up with two links for players. One is "Know more about 'Super Lahw'", and the other one is "Purchase now". This is consistent with the two categories of information presented in the interface of 51mole. Generally, a positive attitude toward virtual goods among children is important for 51mole to sell the "Super Lahw" and premium decorations. Also, the game relies on

numerous links embedded in the gaming environment to the payment page of 51mole to stimulate players' purchase behavior.

Children's Agent Knowledge of 51mole

A controversial issue is raised in the context of 51mole when I examine children' knowledge of the agent. Since 51mole was launched in May 2008, a large amount of mass media news clippings have described 51mole as China's first online game suitable for children because of its anti-addiction system and educational functions. During gameplay, children are frequently reminded of the time they have spent on 51mole. Once staying online in 51mole for more than two hours on weekdays, child players who continue playing flash games will gain no more "Mole Beans" as rewards. Besides its anti-addiction design, 51mole also incorporates educational information in its gaming environment. English spelling games, questions about the Winter Olympic Games, and basic banking information are all available to child players of 51mole.

However, while the characteristics of 51mole mentioned above support the argument that 51mole is a MMORPG specially designed for children, I assume that such characteristics also contribute to the positive credibility perceptions of 51mole among children, thus resulting in players' vulnerability to persuasion attempts relating to virtual goods sales. Several postings relating to this issue are presented as follows:

> *51mole needs to make money in order to operate.*
>
> *We all love playing 51mole, so we should support it through purchasing.*
>
> *The designers of 51mole deserve to earn the money through selling "Super Lahw" and premium decorations.*

According to the persuasion knowledge model, the agent knowledge children hold in their knowledge structures plays an important role in shaping children's attitudes

toward the individuals or organizations responsible for a persuasion attempt. Previous studies show that two factors, the accessibility of persuasion motives and the cognitive capacity of consumers, can affect whether consumers use their knowledge to form valid agent attitudes (Campbell & Kirmani 2000). Also, the agent knowledge in relation to perceived source credibility provides a positive influence on the persuasion effects toward consumers. Thus, by examining the threads posted to the discussion forums of 51mole, I reveal the beliefs that child players hold in regards to 51mole as the agent responsible for all in-game information. It is possible that due to the lack of explicit statements about the persuasion motives of 51mole and the limited cognitive capacity of children, players of 51mole rely heavily on in-game information to form their attitudes toward this game, while such information plays the role of contributing to the positive credibility perceptions of 51mole among child players.

GENERAL DISCUSSION

Conclusions

The objective of this study is to examine the marketing and persuasion tactics that are integrated in online games targeting children to sell virtual goods, trying to develop a description of how children can be vulnerable to such online game marketing with a new line between entertainment and persuasion. By applying four game analysis methods, my study of the 51mole as a typical case is constructed by examinations of the three knowledge structures proposed in the persuasion knowledge model (Friestad & Wright 1994).

The study of the virtual pet and virtual decorations sold in 51mole demonstrates that social attributes of virtual goods are emphasized throughout the game, while children as consumers are more likely to be motivated by social motives than by economic motives. This is consistent with the content of the threads posted by children to several popular discussion forums. My examination of 531 threads suggests that the most common beliefs child players hold in their topic knowledge about the virtual pet and decorations in 51mole are about the social influence that virtual goods can bring to the players.

51mole as the game in which virtual goods are incorporated to sell to children can be viewed as an outcome of a set of marketing techniques. The theoretical framework of this section is based on marketing. Such MMORPGs as 51mole may lead children to purchase virtual goods through game mechanics and game elements intentionally designed to create the demand of virtual goods among child players who immerse themselves in the virtual worlds of online games.

My study of the persuasion methods incorporated in 51mole broadens the scope of this study to explore children's psychological activities that may be evoked toward virtual goods through their gameplay. Based on the persuasion knowledge model, specific persuasion methods in 51mole can help build the connection between virtual goods and children's psychological activities, and play an important role of persuading child players to purchase virtual goods. Children are consumers with limited experience and exposure to persuasion, thus if they cannot view their psychological activities as the results of persuasion methods, the virtual goods incorporated in online games can be quite desirable and appealing to children as players and consumers. According to my examination of the threads posted by children, quite few threads can be identified as concerns about the game elements as persuasion methods. Although it may demonstrates children's vulnerability of game elements as persuasion methods, further research focusing on children rather than the game itself is necessary to reveal what children know about the persuasion methods incorporated in online games.

The examination of the threads posted by children in popular discussion forums of 51mole also indicates that the beliefs that child players of 51mole hold about the agent knowledge of 51mole are influenced by the information integrated in the gaming environment of 51mole. Thus, child players with limited cognitive capacity may not be motivated to form valid attitudes toward 51mole, and only rely heavily on the information provided by the game itself. Due to the lack of explicit statements of persuasion motives in the gaming world, children may form a positive attitude toward 51mole, which is actually the agent responsible for all the persuasion attempts designed in the game.

Implications

According to previous research on children as consumers, an understanding of the forms of advertising and marketing has been viewed as an important ability that children should gain through their consumer socialization process. However, due to the lack of the line between entertainment and advertising in the context of online games selling virtual goods, a focus of the forms of advertising and marketing is no longer applicable to studies of such marketing environments. Thus, in my case study of a Chinese MMORPG that sells virtual goods to children, I apply the three knowledge structures in the persuasion knowledge model (Friestad & Wright 1994) to examine the game itself as well as child players of it. By emphasizing three elements including the product or service, the persuasion methods, and the agent responsible for advertising attempts, these three knowledge structures provide me a comprehensive way to examine such online games as marketing tools. Based on the persuasion knowledge model, a theoretical framework can be built in order to serve further analysis of such online games and their influence on child players as consumers.

Compared to the advertising and marketing of real objects such as food and toys targeting children, child players of online games are exposed to persuasion attempts that aim to promote virtual goods. However, the influence of virtual goods sales on materialistic values among children should not be ignored. According to my study, owning virtual goods in online gaming environment can provide children with a lot of experience that they usually gain through obtaining material goods. For example, child players achieve personal satisfaction, happiness, and success by owning the virtual goods incorporated in online games. Also, aligned with privileges, social status, and the game

mechanics of interaction, some of the virtual goods are designed to emphasize the social significance of obtaining them, trying to persuade child players who have an understanding of the social aspect of materialism.

Compared to a toy store selling real toys to children, online games that sell virtual goods to child players target children with a more comprehensive approach. Through building a virtual world that mirrors the real world in an attractive way, online games provide children the environments where they can perceive the values of virtual goods through observing others, experience the virtual goods through interactions, and show off the virtual goods in front of other players. Thus, although virtual goods are intangible, children can still experience the happiness, the social distinction, and the self-fulfillment of owning such virtual objects through their immersion in the virtual world.

Considering children's vulnerability in the virtual world where no line exists between entertainment and persuasion, public policy makers should regulate online games that sell virtual goods to children. First, public policies should be made to help define the age ranges of child players for various online games. Currently, parents and educators only rely on the information provided by game operators to decide whether certain games are suitable for children. Second, the line between entertainment and persuasion should be explicitly described to child players in the gaming environments of online games. The game mechanics and game elements that serve to promote virtual goods sales should be regulated. Last but not least, children's information should be protected and cannot be gained by such online games. In the United States, no organization is allowed to collect information from children under the age of 13. According to my study, game operators of 51mole have collected a large body of child

players' personal information through posting surveys to its official discussion forum. For example, children are asked to input the cities where they live when they register for accounts. Such information can be used to determine the distribution of the refill cards for virtual goods purchase.

Limitations and Future Research

While the single case examined in this study is the most popular online game for Chinese children, more cases can be studied to better support the analysis and results of my study. Selling virtual goods to players has become a major revenue model for many MMORPGs targeting Chinese children. Thus, by examining those online games, we will have an overall understanding of how such games can be a threat to child players as consumers.

This thesis is an exploratory study focusing on the game mechanics and game elements of the MMORPGs selling virtual goods to child players, trying to introduce this new form of marketing and analyze its possible influence among children. Although the threads posted by child players to several discussion forums provide me the opportunity to examine children's knowledge structures relating to persuasion incorporated in such online games, further research should be conducted with an emphasis on children's perception of these games. By preparing more specific qualitative studies of child players, children's attitudes towards the virtual goods, the forms of in-game persuasion attempts, and the game operators can be verified. Then, the research of online games and child players will gradually shift towards quantitative studies with measurable variables, and the findings will apply to practice to better protect child players of online games as consumers.

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