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Fantasy or Reality: Effects of Age, Premise Content, and Task Organization on Children's Deductive Reasoning

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The study investigates the effects of age, premise content, and task organization on Filipino children's deductive reasoning. Participants were 24 4-year-olds and 24 7-year-olds enrolled in private preschool and elementary institutions. They were presented with verbal syllogism problems systematically varied in content (fantasy premises; premises incongruent with real-world events; premises congruent with real-world events) and order of presentation of problem types, patterned after Hawkins, Pea, Glick and Scribner (1984). Results indicate that premise content affected children's scores on the reasoning task and patterns of justifications. Further analysis showed that age interacted with premise content to affect children's scores, and also interacted with task organization to affect response justifications. Both 7-year-olds and 4-year-olds showed signs of deductive reasoning ability under constrained conditions. The development of deductive reasoning is discussed in relation to other cognitive processes, and implications are addressed.

Logical thinking is a key cognitive ability within a scientifically-oriented society. The process of drawing valid conclusions from a given set of premises requires complex cognitive competencies. One is the capacity to attend to structural relationships of propositions (Morris, 2000). In order to arrive at a valid logical conclusion, a person must treat component propositions of an argument, not as individual statements, but

as an integrated whole. Logical thinking also involves the ability to consciously set aside prior knowledge and use only the premise information to make inferences. Thus, an important component of logical reasoning is the capacity to accept conclusions incongruent with empirical or pragmatic knowledge, if these are the resulting inferences drawn after examination of the relations among the given premises. The ability to reason independent of one's own beliefs has been viewed as a core cognitive ability that underlies the development of critical and analytic thinking skills (Handley, Capon, Beveridge, Dennis, & Evans, 2004).

Deductive reasoning is one type of logical reasoning that requires attention to structural relationships and integration of given propositions without the interference of real-world knowledge. As noted by Piaget (1969), "in order to be necessary, a deduction must be formal or hypothetico-deductive, that is, its conclusions must be held to be true only by reason of its premises and quite independently of the empirical truth of these premises" (p. 32). For instance, consider the three-sentence syllogism: *All tigers eat rocks. Thor is a tiger. Thor eats rocks.* In this argument, the conclusion, *Thor eats rocks,* logically follows from the structural relationships between the first two premises, and hence, is perfectly valid even if it contradicts practical knowledge.

The powerful effect of practical knowledge in logical reasoning has been given the term "semantic belief bias" (Moutier, Plagne-Cayeux, Melot, & Houde, 2006). It was argued that systematic errors in logical tasks involving propositions that are counterfactual or incongruent have more to do with the difficulty of resisting interference of practical knowledge than the ability to grasp underlying logic (Houde, 2000; Moutier, Angeard, & Houde, 2002). Hence, in reasoning tasks, success involves not only activating deductive processing capacities but also inhibiting the unbelievable-equals-invalid strategy (i.e., the semantic belief bias), which hinders the application of logical rules consistently (Moutier et al., 2006). Children need to learn this inhibition strategy as well, because their syllogistic or deductive reasoning is also affected by the semantic belief bias (Evans & Perry, 1995; Johnson-Laird, Oakhill, & Bull, 1986; Richards & Sanderson, 1999).

Handley et al. (2004) argued that aside from inhibitory control and cognitive skills, reasoning on belief-based problems is also dependent on working memory capacity.

Logical accuracy on reasoning tasks with belief-based content involves the ability to simultaneously construct, hold in mind, and manipulate mental representations of a given task. Accordingly, indices of belief bias and logical reasoning on belief-based problems were predicted by both inhibitory control and working memory capacity (Handley et al, 2004). Higher working memory, coupled with higher accuracy on inhibition measures, resulted in less belief-based responding and greater logical accuracy overall, especially on problems involving arguments incongruent with semantic beliefs.

In the last few decades, conceptions about the nature of children's deductive reasoning have undergone a number of significant changes. According to Piagetian theory, logical reasoning with verbal propositions is an ability that requires formal operations, and hence, should not appear until around 12 years or later (Inhelder & Piaget, 1958). Moshman and Franks (1986) agreed that the ability to decontextualize or reason logically from premises irrespective of their content is a hallmark of formal reasoning competence, and is a relatively late development. However, more recent studies have shown that even preschoolers show signs of deductive reasoning skills and semantic belief bias inhibition in simple reasoning problems — if facilitated by cues and other factors involving problem context (Dias & Harris, 1990; Dias, Roazzi, O'Brien, & Harris, 2005), task organization (Moutier et al., 2006), and instructions (Leevers & Harris, 1999).

One of the earliest studies that showed evidence for children's deductive reasoning was that of Hawkins, Pea, Glick, and Scribner (1984). Preschoolers aged four and five were asked to judge a set of syllogistic problems that varied in premise content (i.e., fantasy, congruent with real-world events, incongruent with real-world events), form, and task organization or sequence. Premise content was found to affect the children's responses. Whereas answers to fantasy-content problems were usually correct, answers to congruent- and incongruent-content problems were biased towards

congruence with practical knowledge. That is, children in all groups produced very few logically correct responses for incongruent problems and produced mostly logically correct answers for the congruent problems. They also found that task organization had a large impact on the strategies children adopted in response to the different problems. Specifically, the group that received fantasy-content problems (e.g., Every banga is purple. Purple animals always sneeze at people. Do bangas sneeze at people?) before other types of problems (e.g., Rabbits never bite. Cuddly is a rabbit. Does Cuddly bite?) produced significantly more logically correct answers and gave more valid deductive justifications than those who received other presentation sequences. The authors argued that the pragmatic form of reasoning, which incorporates relevant knowledge into a reasoning situation, may be more "natural" in most situations, but if young children are primed or cued in such a way as to effectively eliminate the intrusion of practical knowledge (as when fantasy problems are presented first), then that can assist them in using contrary-to-fact premises as a basis for reasoning. A fantasy context appeared to assist children in monitoring the intrusion of extraneous personal information in interpreting propositions.

The purpose of the present study is to replicate the findings of Hawkins et al. (1984) in a sample of Filipino children, incorporating cross-age comparisons between preschoolers (i.e., 4-year-olds) and school-aged children (i.e., 7-year-olds). The variables that exhibited significant effects on children's deductive reasoning in Hawkins et al.'s (1984) study were premise content and task organization. As such, the effects of these variables were examined using problems and materials culturally relevant to Filipino children. Since Hawkins et al.'s (1984) study, other researchers followed in challenging the Piagetian view that deductive reasoning is strictly a formal operational ability and shown evidence for young children's deductive reasoning through the facilitative cues of premise content (i.e., fantasy context) and task organization. The following sections discuss some of these more recent studies that also guided the design of the present study.

Fantasy Context and Children's Cognition

Hawkins et al.'s (1984) study was one of the first to use the fantasy context in facilitating children's ability to engage in deductive reasoning. Since then, it has been proposed that a representational process may be involved in accepting contrary-to-fact premises (Markovits & Vachon, 1989). The development of reasoning is said to be intimately linked to other developmental functions, such as speed of processing, working memory, and long-term memory, hence, the types of inferences children make are heavily influenced by links between semantic memory and familiar conditional statements. The fantasy context then acts as a cognitive filter that can reduce access to real-world knowledge and long-term memory, enabling children to construct a representation of the arguments using only the structural relationships between the given propositions (Markovits, Venet, Janveau-Brennan, Malfait, Pion, & Yadeboncoeur, 1996). Experimental studies have shown evidence for the facilitative effects of fantasy elements in children's deductive reasoning. For instance, Dias and Harris (1988) found that 4- to 6-year-olds performed better in syllogisms involving premises that violate their empirical knowledge if they engage in make-believe play. Markovits and Vachon (1989) similarly reported that fantasy play improved performance of 5- to 7-year-olds in reasoning with contrary-to-fact premises. Apart from fantasy play, other cues found to facilitate reasoning with premises incongruent with everyday knowledge were as follows: when premises were presented with make-believe intonation; when they were presented in the context of a remote setting, such as another planet; and when they are accompanied by visual imagery (Dias & Harris, 1990). The facilitative effects of fantasy play and imagery on syllogistic reasoning were even found to extend to illiterate 5-year-olds from low socioeconomic backgrounds (Dias, Roazzi, O'Brien, & Harris, 2005), and to children as young as 2 years of age (Richards & Sanderson, 1999).

Apart from deductive reasoning, fantasy contexts have also been shown to contribute to other cognitive aspects. Holmes, Black, and Miller (1996, as cited in Lillard & Sobel, 1999)

discovered that children performed significantly better on certain false beliefs tasks when these are enacted by fantasy characters. In addition, Saltz, Dixon, and Johnson (1977, as cited in Lillard & Sobel, 1999) found that when preschoolers were tested on language, empathy, inhibitory control, and other skills at the end of a particular school year, those who were trained to enact fairy tales at the start of the year performed better on the tests than those who were trained to enact ordinary routines (e.g., grocery shopping). In Lillard and Sobel's (1999) categorization experiment, they found that 4-year-olds tend to indicate the mind's involvement when pretending to be fantasy characters (e.g., Pocahontas) more than they did for ordinary characters such as their mothers. These studies showed the facilitative effects of the fantasy context in children's cognitive performance, and may be analogous to previous claims on the improvement of children's reasoning via fantasy play.

Task Organization and Children's Deductive Reasoning

Studies reporting evidence for children's deductive reasoning through the use of facilitative cues led to support for the proposition that syllogistic reasoning errors in deductive reasoning are not necessarily due to a lack of logical ability, but stem from an executive failure to inhibit biases towards reasoning according to real-world knowledge. The basic competence required for logical reasoning may be present in children, but the expression of this competence is impaired when empirical or pragmatic knowledge is accessed (Markovits et al., 1996). Apart from using the fantasy context, another way of inhibiting this bias is by manipulating task conditions. In Hawkins et al.'s (1984) study, task conditions were manipulated via problem presentation sequence. They found that when fantasy-content problems were presented first, children are cued or primed to avoid their tendency to reason pragmatically, as opposed to when congruent- and incongruent-content problems were presented first. A similar method was used in a recent experiment by Moutier et al. (2006). They investigated whether 8- to 10-year-old children's performance in syllogistic tests will

vary depending on how these items were sequenced. Two types of items were used: (A) a syllogism containing contrary-to-fact premises, wherein empirical knowledge must be inhibited in order to produce the correct answer, and (B) a syllogism containing premises congruent with empirical knowledge, wherein the correct answer would require affirming exactly what had been inhibited in A. They found that when children were presented with the A-B sequence, their performance dropped on B, indicating a negative priming effect. The authors argued that during cognitive development, inhibitory control is required for arriving at valid conclusions in syllogisms containing contrary-to-fact premises.

The Present Study

In summary, previous studies have suggested that even young children may be capable of deductive reasoning under certain contexts and task conditions. The present study aims to find evidence for deductive reasoning in Filipino preschoolers (i.e., 4-year-olds) and first graders (i.e., 7-year-olds) through the facilitative cues of premise content and task organization, using the deductive reasoning task in Hawkins et al. (1984). *Premise content* refers to the three different types of propositions that will be presented to the children: (a) fantasy-content problems, in which premises describe make-believe creatures that are foreign to practical knowledge, (b) congruent-content problems, in which premises are compatible with practical knowledge, and (c) incongruent-content problems, in which premises contradict practical knowledge. *Task organization* refers to the four problem set sequences to which participants will be assigned. These four problem sets varied according to the manner in which the initial type of premise in the sequence acted as a setting condition. The four problem sets were arranged as follows: (a) Fantasy-Incongruent-Congruent (FIC), in which fantasy problems were presented before incongruent and congruent problems; (b) Incongruent-Fantasy-Congruent (IFC), in which incongruent problems were presented before fantasy and congruent problems; (c) Congruent-Incongruent-Fantasy (CIF), in which congruent

problems were presented before incongruent and fantasy problems); and (d) Jumbled, in which the three types of problems were randomly presented.

Based on the findings of Hawkins et al. (1984) and other previous studies reviewed, the following hypotheses were tested. First, premise content will affect children's deductive reasoning in terms of responses and justifications. Due to the facilitative effect of the fantasy context in inhibiting the semantic belief bias, children are predicted to perform significantly better in fantasy problems compared to incongruent problems. Performance in congruent problems is also predicted to be better than performance in incongruent problems because answering the congruent problems does not require belief bias inhibition. Moreover, it is hypothesized that children will justify their answers in a more valid deductive manner in fantasy problems compared to congruent and incongruent problems. Congruent and incongruent problems are expected to elicit more justifications biased towards empirical or practical knowledge.

Second, task organization is also hypothesized to affect children's deductive reasoning in terms of responses and justifications. Specifically, children assigned to the FIC condition are predicted to acquire the highest scores compared to the other task conditions, as the initial presentation of fantasy problems should prompt children to inhibit the belief bias and reason solely based on the premises presented. On the other hand, the IFC and CIF groups are hypothesized to yield lower scores than the FIC group because initial presentation of congruent and incongruent problems are expected to elicit a response strategy of empirically-biased reasoning. For the same reasons, it is also predicted that children assigned to the FIC condition will give the most number of valid deductive justifications for their answers compared to children assigned to other task conditions.

Lastly, because this study incorporates cross-age comparisons between preschoolers and school-aged children, it is hypothesized that overall, the older children (i.e., 7-year-olds) will perform better than the younger children (i.e., 4-year-olds). Because of the

increased cognitive skills, memory capacity, and greater exposure to formal education characteristic of 7-year-old children, they are also expected to give more valid deductive justifications compared to 4-year-old children.

METHOD

Participants

A total of 48 children participated in this study. Twenty-four preschoolers (mean age = 4.39 years, *SD* = 0.27) and 24 first graders (mean age = 7.52 years, *SD* = 0.31) were chosen, with 12 boys and 12 girls from each of the two age groups. Purposive sampling was employed. The preschoolers were recruited from a private preschool institution in Quezon City and the first graders were recruited from two private elementary schools in Antipolo and Quezon City. As such, all children were from middle- to upper-middle class families. Children who are verbally proficient in English and who are not diagnosed with any speech or cognitive disability were chosen to participate.

Materials

Deductive reasoning test. A set of eighteen problems was constructed. The problems were in syllogistic form, consisting of two premises (i.e., major and minor), and a conclusion. All premises were of the particular type (e.g., Cows can fly. Marky is a cow. Does Marky fly?), and there was an equal number of affirmative and negative problems. The problem set consisted of three types of premises (a) six fantasy problems – premises that describe mythical creatures that are foreign to practical knowledge, (b) six congruent problems – premises that are compatible with practical knowledge, and (c) six incongruent problems – premises that contradict practical knowledge (see Table 1 for examples).

Table 1. Types of Premise Content

Premise Content	Affirmative Example	Negative Example
A: Fantasy	Zops read books. Roger is a zop. Do you think Roger read books?	Trogs cannot whistle. Anna is a trog. Do you think Anna whistles?
B: Incongruent	Cows can fly. Marky is a cow. Do you think Marky flies?	Horses do not have legs. Happy is a horse. Do you think Happy has legs?
C: Congruent	Monkeys like bananas. Charlie is a monkey. Do you think Charlie likes bananas?	Bees do not run. Biboy is a bee. Do you think Biboy runs?

Four problem sets were constructed, each varying in task organization or the sequence by which the 18 problems were presented. As adopted from Hawkins et al. (1984), the task organization varied according to the manner in which the initial type of problem in the sequence acted as a setting condition. The four problem sets were arranged as follows: (a) Fantasy-Incongruent-Congruent (FIC), (b) Incongruent-Fantasy-Congruent (IFC), (c) Congruent-Incongruent-Fantasy (CIF), and (d) Jumbled). In the FIC problem set, all six fantasy problems were presented first, followed by the six incongruent problems, and finally the six congruent problems. The IFC and CIF problem sets were constructed following the same procedure. For the jumbled group, no specific order was followed; it was a random scrambling of all 18 problems.

Probe questions. At the end of the deductive reasoning test, children were asked probe questions to confirm children's real-world knowledge about the premises of the congruent and incongruent problems. Twelve probe questions were constructed, corresponding to the six congruent and six incongruent problems given in the deductive reasoning test (e.g., Do cows fly?).

Other materials. The experimenters brought along a toy dragon to engage the children in responding and to hold their attention while conducting the test. A digital recorder was also employed to record the responses of the children.

Procedure

A request letter was prepared and sent to target private preschool and elementary schools in Metro Manila. These schools were purposively chosen based on proximity, familiarity, and the socioeconomic backgrounds of their students (i.e., children from middle- to upper-middle class families). The letter also assured confidentiality of the data that will be gathered from their students. After obtaining approval, contact persons from the schools identified children who are verbally proficient in English and who do not have any speech or cognitive delays to participate. Testing dates were then scheduled.

Participants were randomly assigned to four treatment conditions: (a) FIC, (b) IFC, (c) CIF, and (d) Jumbled. The participants were tested individually in a quiet room in the children's school by one of the experimenters. Each session started with the experimenter introducing herself to the child, and establishing rapport by asking the child's favorite animals. She also brought out a toy dragon named Scorch, and gave the following instructions:

> *This is Scorch the dragon. He will sit with us today to listen to some short stories. Some of the stories are about make-believe animals and some of them are about real animals. Now, other stories are going to sound funny and strange, but I want you and Scorch to pretend that everything the stories say is true. Here, I'll show you what I mean.*

Two practice stories were presented before the actual problems. The practice problems were constructed such that their premise content were similar to the first problem type in the actual problem set. Participants in the FIC condition received two fantasy practice problems; those in the IFC condition received two incongruent practice problems; and those in the CIF condition received two congruent practice problems. Children in the Jumbled condition received one congruent and one incongruent practice problems. Each problem was read in a conversational manner, one at a time. Two answers were sought for each

problem. After the participants gave their "yes" or "no" answer, they were asked, "Why do you think so?" to justify their answers. If the children answered incorrectly or appeared confused in the practice story, the experimenter gave the correct answer and explained the valid deductive manner of justifying the response.

Once the children understood the task, they were presented with the actual problem set. The same procedure was followed for each of the 18 problems, except that in the actual set, the experimenter did not correct the participants if they gave the wrong answer. All the responses of the children were verbally reinforced (e.g., "That's good," "Okay, good"). If the child interrupted the experimenter while reading the problems, if no response was given, and if the child did not understand the questions, they were repeated. The experimenter also probed further if the children's answers were unclear.

After answering all the problems, the 12 probe questions were asked in order to confirm children's familiarity with the premises of the congruent and incongruent problems. They were given instructions to answer the probe questions based on their knowledge about what the animals do in real life (e.g., "In real life, do cows fly?"). After answering all the probe questions, the experimenter ended the session by thanking the children and giving them small stickers as token for participation. All problems and questions were presented in a single session lasting for 10 to 20 minutes. The responses were recorded and transcribed for analysis.

Response Coding

All data were classified in two ways: (a) according to the number of correct responses, and (b) according to the types of justifications provided, independent of their correctness. The two researchers coded the responses through consensus based on the criteria used by Hawkins et al. (1984). The types of justifications are as follows (see Table 2 for examples):

1. *Theoretical.* The response only referenced information presented in the problem in the valid deductive manner.
2. *Empirical.* The response was justified by relating the premises to practical world knowledge.

Table 2. Examples of Types of Justifications

Justifications	Fantasy Problem	Incongruent Problem	Congruent Problem
	Trogs cannot whistle. Anna is a trog. Do you think Anna whistles?	Cats have five eyes. Clara is a cat. Do you think Clara has five eyes?	Monkeys like bananas. Charlie is a monkey. Do you think Charlie likes bananas?
Theoretical	No, because she's a trog, they can't whistle	Yes, because she's a cat, and cats have five eyes	Yes, he's a monkey, they like bananas
Empirical	No, because animal doesn't whistle and a person can whistle	No, because the cat, they got two eyes only	Yes, because they live in the jungles and if they don't like anything they swing around to find food
State	No, because she's a trog	Yes, because she's a cat	Yes, he monkey
Inventive	Yes, because he has a large mouth	Yes, so if one of their eyes fall off, they still have extra eyes	Yes, because they're yellow, they're attracted to yellow
Authority	Yes, my mom told me so	Yes. because my dad told me that	Yes, because my mom said that
No Response	I don't know	(No verbal expression)	Don't know
Irrelevant	Yes, because she's a girl	No, because she's a cat, they got whiskers	Yes, because they always want to see other things

3. *State.* The response simply restated the identity of the creature in question.
4. *Inventive.* The response included invented details not mentioned in the premises. This criterion was added by the researchers and was not originally part of Hawkins et al.'s (1984) response coding criteria.
5. *Authority.* The response referenced someone who might be considered as an authority in the matter.
6. *No response.* The child expressed declaration of incapacity to justify the response or did not respond verbally.
7. *Irrelevant.* The response could not be classified into any of the above categories. (Note: In this study, Hawkins et al.'s (1984) *other or uninterpretable* criterion was broken down into two categories of *no response* and *irrelevant*).

RESULTS

Data Analyses

The data were analyzed for (1) effects of age, (2) effects of premise content (i.e., fantasy, incongruent, and congruent), and (3) effects of task organization (i.e., FIC, IFC, CIF, and Jumbled). Initially, analyses were also made for sex differences and the effect of negation on the correct responses of the children. The results indicated that there were no significant sex differences on the total scores of the children in the test, and on any other analyses of scores according to premise content and on types of justifications provided. Negation also did not have any significant effect on the total scores of the participants in the test, hence, male/female and affirmative/negative scores were collapsed in succeeding analyses.

Correctness of Responses

Table 3 shows the means of correct responses across premise content by task organization and age. Using a 2 (age) x 3 (premise content) x 4 (task organization) mixed-models ANOVA, results

Table 3. Mean Number of Correct Responses Produced for Fantasy, Incongruent, and Congruent Problems by Task Organization and Age

Task Organization	4-year-olds				7-year-olds			
	Fantasy	Incongruent	Congruent	Total	Fantasy	Incongruent	Congruent	Total
FIC	5.33	4.17	6.00	15.50	5.17	4.50	5.50	15.33
IFC	4.00	1.67	6.00	11.67	4.83	4.00	6.00	13.25
CIF	4.17	2.17	6.00	12.33	5.17	3.67	5.83	13.50
Jumbled	4.50	3.17	6.00	13.67	4.00	4.33	4.83	13.42
Average	4.50	2.79	6.00	13.29	4.79	4.13	5.54	13.88

Note. FIC = fantasy-incongruent-congruent sequence; IFC = incongruent-fantasy-congruent sequence; CIF = congruent-incongruent-fantasy sequence; Jumbled = random sequence.

indicated a significant main effect for premise content, F (2, 39) = 27.23, p < .001, with children garnering significantly higher scores on the congruent-content problems (M = 5.77 out of a possible 6, SD = 0.63) compared to the fantasy-content problems (M = 4.65, SD = 1.38), and children scoring significantly higher on fantasy problems compared to incongruent-content problems (M = 3.46, SD = 2.44).

There was also a significant premise content x age interaction, F (2, 39) = 3.62, p = .036, with the 4-year-olds significantly scoring higher (M = 6.00, SD = 0) than 7-year-olds (M = 5.54, SD = 0.83) in congruent problems, F (1, 46) = 7.27, p = .010. The 7-year-olds gained higher scores than the 4-year-olds for the incongruent problems, but the difference did not reach statistical significance. Similarly, the 7-year-olds also scored higher than the 4-year-olds for the fantasy problems, but the difference was also not significant.

No significant main effects were found for age and task organization. There were also no significant interaction effects for premise content x task organization, age x task organization, and premise content x age x task organization.

A binomial test indicated that overall, children performed above chance for the fantasy and congruent problems, p < .05. When the binomial test was run separately for the answers of the 4-year-olds and 7-year-olds, it was found that above-chance performance in the fantasy and congruent problems applied only to the 7-year-olds, p < .05. On the other hand, performance of the 4-year-olds were significantly different from chance only for the congruent problems, p < .05.

Patterns of Response Justifications

Results revealed that 91% of the 4-year-olds and 95% of the 7-year-olds answered the probe questions correctly. These high percentages indicate that majority of the children were familiar with the premises presented in the congruent and incongruent problems.

Table 4 shows the mean numbers of justifications produced by justification type, task organization, and age. Only two

Table 4. Mean Number of Justifications Produced by Justification Type, Task Organization and Age

	4-year-olds					7-year-olds				
Justification Type	FIC	IFC	CIF	Jumbled	Average	FIC	IFC	CIF	Jumbled	Average
Theoretical	6.17	1.83	0.33	4.17	3.13	7.00	13.83	12.17	6.50	9.88
Empirical	5.33	9.50	7.50	5.67	7.00	5.00	3.50	4.33	3.83	4.17
State	1.83	0.83	2.33	1.33	1.58	0.17	0.00	0.17	3.00	0.84
Inventive	1.17	3.83	2.50	1.17	2.17	5.50	0.00	1.33	4.17	2.75
No Response	1.67	0.83	0.17	1.00	0.92	0.00	0.50	0.00	0.00	0.13
Irrelevant	1.83	1.17	5.17	4.33	3.13	0.33	0.17	0.00	0.50	0.25

Note. Theoretical = referenced information presented in a valid deductive manner; Empirical = reference to practical world knowledge; State = restating the identity of the creature in question; Inventive = invented details not mentioned in the premises; No response = declaration of incapacity to justify the response or did not respond verbally; Irrelevant = response could not be classified into any of the above categories.

justifications of the authority type were obtained from the participants; hence, authority responses were excluded from further analysis. A two-way ANOVA was conducted, with age and task organization as independent variables and total number of justifications per category as the dependent variable. The results revealed a significant main effect of age on three of the justification types, namely, theoretical, $F(1, 40) = 14.25$, $p = .001$; empirical, $F(1, 40) = 5.14$, $p = .029$; and irrelevant, $F(1, 40) = 20.09$, $p < .001$. Older children gave significantly more theoretical responses ($M = 9.88$ out of a possible 18, $SD = 7.61$) than the younger ones ($M = 3.13$, $SD = 4.96$). On the other hand, 4-year-olds gave significantly more empirical ($M = 7.00$, $SD = 4.17$) and irrelevant justifications ($M = 3.13$, $SD = 3.35$) than the 7-year-olds ($M = 4.17$, $SD = 4.81$; $M = 0.25$, $SD = 0.53$, respectively). No significant age differences were found for state, inventive, and no response justifications. Both age groups produced an equally low number of justifications for each of these categories regardless of task organization.

There was no significant main effect of task organization across the six types of justifications. Regardless of age, children across all task organization conditions produced the similar amount of justifications for the theoretical, empirical, state, inventive, no response, and irrelevant categories.

A significant age x task organization interaction was found only for the inventive justifications, $F(3, 40) = 4.34$, $p = .010$. Specifically, in the FIC and Jumbled conditions, the 7-year-olds gave significantly more inventive responses than the 4-year-olds. On the other hand, in the IFC and CIF conditions, the 4-year-olds gave significantly more inventive responses than the 7-year-olds (see Table 4 for comparison of means).

A separate analysis was done to examine how the justifications of the children varied according to premise content (see Table 5 for mean numbers of justifications produced by justification type, premise content, and age). A one-way ANOVA was conducted with premise content as the independent variable and the number of justifications endorsed per category as the dependent variable.

Table 5. Mean Number Justifications Produced by Justification Type, Premise Content and Age

	4-year-olds				7-year-olds			
Justification Type	Fantasy	Incongruent	Congruent	Average	Fantasy	Incongruent	Congruent	Average
Theoretical	5.83	3.67	3.00	4.17	14.50	12.33	13.00	13.28
Empirical	0.83	10.17	17.00	9.33	1.67	7.00	8.00	5.56
State	4.00	1.50	1.00	2.17	1.67	1.00	0.83	1.17
Inventive	6.83	2.00	0.00	2.94	5.83	3.17	1.83	3.61
No Response	2.17	0.67	0.67	1.17	0.17	0.50	0.00	0.22
Irrelevant	4.17	6.00	2.33	4.17	0.17	0.00	0.33	0.17

Note. Theoretical = referenced information presented in a valid deductive manner; Empirical = reference to practical world knowledge; State = restating the identity of the creature in question; Inventive = invented details not mentioned in the premises; No response = declaration of incapacity to justify the response or did not respond verbally; Irrelevant = response could not be classified into any of the above categories.

Results showed a significant effect of premise content on the number of theoretical, F (2, 15) = 6.45, p = .010; empirical, F (2, 15) = 75.10, p < .001; state, F (2, 15) = 6.78, p = .008; inventive, F (2, 15) = 48.61, p < .001, and irrelevant F (2, 15) = 4.26, p = .034 justifications endorsed. Patterns of response for each type of justification will be discussed in further detail.

First, children gave the highest number of theoretical justifications for the fantasy premises. Overall, the number of theoretical justifications endorsed for fantasy problems (M = 20.33 out of a possible 48, SD = 1.63) was significantly higher than that endorsed for incongruent (M =16.0, SD = 2.37) and congruent (M =16.0, SD = 3.03) premises.

Next, it was found that overall, children produced the highest number of empirical justifications for congruent premises (M = 25.0, SD = 3.58). This number was significantly higher than the empirical justifications given for incongruent premises (M = 17.17, SD = 4.26). Very few empirical justifications were provided for fantasy premises (M = 2.50, SD = 0.55). However, further analysis by age revealed that the difference in the number of empirical justifications endorsed for congruent and incongruent premises was significant only for the 4-year-olds. The 4-year-olds endorsed a significantly higher number of empirical justifications for the congruent (M = 17.0 out of a possible 24, SD =2.53) compared to the incongruent (M = 10.17, SD = 2.64) premises, whereas the number of empirical justifications endorsed by 7-year-olds was more similar for congruent (M =8.00 out of a possible 24, SD =1.55) and incongruent premises (M = 7.00, SD =2.10). It is also notable that the number of empirical justifications endorsed by 7-year-olds for the congruent and incongruent problems were generally lower than those endorsed by the 4-year-olds.

For state justifications, overall, children endorsed this type of justification most often in fantasy premises (M = 5.67, SD = 2.42). This number was significantly higher than the number of state justifications endorsed for incongruent (M = 2.50, SD =1.64) and congruent (M = 1.83, SD = 1.60) premises. However, further

analysis by age revealed that this pattern was only applicable to the 4-year-olds. Specifically, 4-year-olds significantly endorsed more state justifications for the fantasy premises (M = 4.00 out of a possible 24, SD = 2.19) compared to the congruent premises (M= 1.00, SD =1.27). For the 7-year-olds, premise content did not have an effect on the number of state justifications they endorsed. It is also important to note that overall, the number of state justifications was relatively small compared to the number of theoretical and empirical endorsements.

Overall, the number of inventive justifications was highest for fantasy premises (M = 12.67 out of a possible 48, SD = 2.34) compared to those endorsed for incongruent (M = 5.17, SD = 2.23) premises. Children reasoned least inventively for congruent premises (M = 1.83, SD = .98). Further analysis by age revealed that the difference between the number of inventive justifications produced for incongruent and congruent premises was significant only for the 4-year-olds. For the 4-year-olds, inventive justifications were significantly higher for incongruent premises (M = 2.00 out of a possible 24, SD = 1.55) because they did make any inventive endorsements at all for congruent problems. The 7-year-olds, on the other hand, made very few inventive justifications for congruent problems (M = 1.83, SD = 0.98) but this number was not statistically different from the number of inventive responses endorsed for incongruent problems (M = 3.17, SD =1.33).

Lastly, there was a significant difference in the number of irrelevant justifications endorsed for incongruent (M = 6.0 out of a possible 48, SD = 2.83) and congruent (M = 2.67, SD = 1.37) premises only. Further analysis by age revealed that this significance applied only for the 4-year-olds. They produced a higher number of irrelevant responses for incongruent premises (M = 6.00 out of a possible 24, SD = 2.83) compared to congruent premises (M = 2.33, SD = 1.03). The 7-year-olds rarely endorsed irrelevant justifications; hence, the effect of premise content was not significant.

DISCUSSION

Findings in this study showed that premise content had an effect on children's deductive reasoning in terms of response correctness and types of justifications. Task organization, on the other hand, did not affect children's scores but was shown to have an effect on children's justifications. It was also hypothesized that overall, 7-year-olds will perform better than the 4-year-olds in the deductive reasoning test. This was not supported by the findings. However, a significant developmental trend was found regarding one manner by which children justified their answers to the test. There was also an age and premise content interaction effect on children's performance, an age and task organization interaction on some types of justifications, and differences regarding justification types that 4- and 7-year-olds gave for the three kinds of premises. Each of these points will be discussed in further detail.

Effects of Premise Content

Consistent with the findings of Hawkins et al. (1984), the study found that premise content affected children's performance in the test. Overall, participants in the study scored highest in the congruent problems and lowest in the incongruent problems. As expected, answers to reasoning problems for these two premise types were biased toward congruence with practical or real-world knowledge. For the fantasy problems, children's scores were significantly above chance. This supports previous assertions that the fantasy context facilitates correct answers to deductive reasoning problems, arguably because the unfamiliar premises allow children to pay more attention to structural relationships of the arguments (Markovits et al., 1996). Moreover, with premises such as "Prongs drive cars. Sam is a prong," and "Zops read books. Roger is a zop," cognitive processing is simpler because a child needs to activate only their basic deductive processing capacities by paying attention to the content of the arguments and their relationships. On the other hand, with incongruent premises such as "Frogs can write. Sally is a frog,"

and "Cats have five eyes. Clara is a cat," the more complex cognitive strategy of inhibiting the semantic belief bias would have to be activated as well (Moutier et al., 2006; Handley et al., 2004).

Premise content also affected children's patterns of justifications. The most interesting differences were found for theoretical, empirical, and inventive justifications. First, as predicted, children gave the highest number of theoretical justifications for the fantasy premises and least for the congruent premises. This can again be attributed to the children's unfamiliarity with the premises. The lack of empirical knowledge about the fantasy creatures mentioned in the propositions appeared to prompt children to reason solely based on the information presented in the arguments. Results also showed that consistent with the hypothesis, children gave the most number of empirical justifications for congruent and incongruent problems. This pattern was particularly pronounced for 4-year-olds, and may also be explained by their limited capacities for more complex inhibitory strategies (Moutier et al., 2006; Handley et al., 2004). Given the proposition, "Horses do not have legs. Happy is a horse. Do you think Happy has legs?", it takes more cognitive resources to simultaneously pay attention and represent the given propositions in the mind, hold the propositions in the working memory long enough to manipulate these representations, inhibit the semantic belief that horses have legs, and finally make the valid conclusion "No, because he is a horse and horses do not have legs." It would be more cognitively economical for them to reason based on information that is already stored in their long-term memory (e.g., "Yes, because horses have legs").

Another interesting finding was some of the children's tendency to invent links to justify their responses most especially for the fantasy premises. This observation is particularly remarkable because it might involve a different level of cognitive processing than the findings reported in Hawkins et al.'s (1984) original study. For instance, given the item, "Pogs wear blue boots. Tom is a pog. Do you think Tom wears blue boots?", a 7-year-old child answered, "Yes, because his favorite color is

blue and he bought it." In this case, the child invented details that would make his justification correct. This child had no empirical knowledge of "pogs," because these are fantasy creatures, so his strategy was to imagine certain characteristics that this fantasy animal might have that would justify the response. It is likely that for some children, the theoretical justification, "Yes, because Tom is a pog and pogs wear blue boots," is too basic that they felt they had to invent details so they could defend their answers well. On the other hand, it is also possible that because they were not familiar with the creatures in question, they relied on their empirical knowledge to make sense of the argument. Hence, their "invention" of characteristics was actually based on practical knowledge. For instance, it is a practical possibility that someone wears blue boots because his favorite color is blue and he bought it at the store. Given these explanations, it is difficult to assume that children who provided inventive answers were actually reasoning in a valid deductive manner. Whereas some of the children who endorsed many inventive justifications for the entire problem set obtained very high scores, there were also instances when children predominantly endorsed inventive justifications but obtained low scores.

Effects of Task Organization

In this study, task organization did not have an effect on the scores of children in the deductive reasoning test. This contrasted with the findings of Hawkins et al. (1984). Our FIC group did obtain the highest scores for both 4-year-olds and 7-year-olds; however, the difference did not reach statistical significance.

Similarly, the types of justifications children endorsed did not significantly vary according to task organization. Overall, the number of theoretical, empirical, state, inventive, no response, and irrelevant justifications did not differ across the FIC, CIF, IFC, and Jumbled task conditions. However, it is notable that out of the six types of justifications, the theoretical and empirical types were the two most commonly endorsed by all groups, with the number of theoretical justifications slightly higher than the

empirical. Results in this study did not support the prediction that the FIC group will produce the highest number of theoretical responses. The FIC group produced the most number of theoretical justifications for the 4-year-olds, but the difference was not statistically significant. The non-significance of the main effect of task organization on both response correctness and types of justification may indicate that in this study's sample, the effects of task conditions alone are not potent enough to produce variations in children's patterns of deductive reasoning. As will be discussed in later sections, the effect of task organization was found significant when its interaction with age was considered.

Age Effects

Interestingly, there were no age effects found for children's scores on this reasoning task. This was unexpected, since it was hypothesized that the increased cognitive capacity and greater experience in formal education of school-aged children may facilitate deductive reasoning. However, response correctness is not the only indicator of children's patterns of logical reasoning. More than their total scores, their justifications would be better indicators of how they reason in deduction problems. In this study, age effects were significantly more prominent in children's patterns of justifications, specifically for theoretical, empirical, and irrelevant responses.

Although total scores were not significantly different between the two age groups, the 7-year-olds produced significantly more theoretical responses than the 4-year-olds. This can be partly explained by a particular manner of answering from some of the 7-year-olds. For instance, with the question "Zops read books. Roger is a zop. Do you think Roger reads books?" one 7-year-old answered, "No. Because he's a zop, and zops don't read books." In this case, the response was incorrect, but the justification was coded as theoretical. The incorrect response might have been due to the child mishearing the premises, and not necessarily because of the child's failure to reason in a deductive manner. Hence, it cannot be discounted that 7-year-olds may exhibit a slightly more advanced capacity for deductive reasoning compared

to the 4-year-olds. Formal education, combined with increased language and cognitive competencies can be seen as factors that may facilitate deductive reasoning in children, especially in articulating explanations or justifications.

These findings do not imply, however, that 4-year-olds are completely incapable of reasoning theoretically. In this experiment, two 4-year-olds were able to obtain perfect scores in the deductive reasoning task and endorse valid theoretical justifications for all 18 items. Although this number is very small compared to the majority who tended to reason more empirically, it supports previous findings that even preschoolers show signs of deductive reasoning capabilities (Dias & Harris, 1988; Markovits & Vachon, 1989; Dias & Harris, 1990; Dias et al., 2005; Richards & Sanderson, 1999).

Findings revealed that the 4-year-olds produced significantly more empirical and irrelevant justifications than the 7-year-olds. Regarding the empirical justifications, this developmental trend is consistent with arguments that younger children are more prone to interference of practical knowledge when responding to deductive reasoning items. Older children, conversely, are more able to inhibit the semantic belief bias and pay more attention to structural relationships among arguments (Moutier et al., 2006). It is notable that for some of the younger children who exhibited a pattern of empirically biased reasoning for the entire problem set, they were more inclined to "invent" and produce justifications for fantasy items that would still be linked to their empirical knowledge. For instance, in response to the fantasy item, "Blops never take a bath. Ron is a blop. Do you think Ron takes a bath?", a 4-year-old who responded with mostly empirical justifications for the other types of premises answered, "No, because he don't have hands to open the faucet." Another 4-year-old responded, "Yes, because she has soap." This further illustrates the powerful influence of empirical or real-world knowledge on reasoning, especially for younger children.

Regarding the higher number of irrelevant justifications endorsed by the 4-year-olds, one way of explaining this could be

by considering the tendency of some children to forget the premises shortly after they gave their responses. As Handley et al. (2004) argued, logical accuracy on reasoning tasks is highly correlated with working memory capacity. For some of the younger children, the propositions might not have been retained long enough in working memory for the children to be able to manipulate representations and produce valid justifications for their answers. For instance, a 4-year-old child responded correctly when asked "Dogs never bark. Chuchay is a dog. Do you think Chuchay barks?" When asked why, she answered, "Because she's a dog," but when the experimenter probed further by asking "What about dogs?" she mentioned an irrelevant detail, "Dogs eat bones." In this case, the child might have been able to reason deductively, but the premises might not have been retained long enough in working memory such that when the child was probed about her response, she could not make references to the premises. Instead, she mentioned the most easily retrievable detail about dogs from her long-term memory (i.e., they eat bones), which, given the premises, is an irrelevant detail. Older children, on the other hand, having more mature working memory capacities, might have retained the premises longer in their working memory, and hence, avoided giving irrelevant justifications.

Interaction Effects

Age had significant effects when its interaction with premise content was considered. In the study, there was a significant age and premise content interaction on children's scores, with the 4-year-olds significantly scoring higher than the 7-year-olds in congruent problems. It is interesting to note that the 4-year-olds obtained a perfect score in the six congruent problems, whether they were assigned the FIC, IFC, CIF, or Jumbled problem set. This reiterates the large impact of practical knowledge in 4-year-olds' response strategies. This knowledge seems to have such a large influence that its effect may have been more powerful than the anticipated effect of task organization. In relation to this, it is also important to note that 4-year-olds

performed significantly above chance only for the congruent problems. The 7-year-olds, on the other hand, performed significantly above chance both for the fantasy and congruent problems. Even if both age groups seemed to have difficulty reasoning with incongruent-content problems, it seems that 7-year-olds are slightly more advanced than 4-year olds in deductive reasoning. The observation that 7-year-olds scored higher and significantly above chance in fantasy problems may be an indication that they display more ability to reason logically without interference of practical knowledge, in contrast to the 4-year-olds. This argument is also supported by aforementioned findings which indicated that 7-year-olds gave significantly more theoretical justifications than 4-year-olds, whereas 4-year-olds gave significantly more empirical justifications than 7-year-olds.

Another finding that largely contrasted the results in Hawkins et al. (1984) was the lack of premise content and task organization interaction. For the 4-year-olds here, the FIC group acquired the highest score and endorsed the most theoretical justifications than any other group, but the difference did not reach statistical significance. On the other hand, the 7-year-olds assigned to the FIC group produced the highest scores in the fantasy items, but the same high scores were also observed for those assigned in the CIF group. Moreover, the most number of theoretical justifications among the 7-year-olds were endorsed by those assigned in the IFC and CIF conditions; however, theoretical justifications for the FIC and Jumbled group were also relatively high compared to 4-year-olds. Again, this might suggest a more advanced deductive reasoning capacity for the 7-year-olds, given that they were generally more able to reason theoretically regardless of which task condition they are assigned to. In contrast to the findings of Hawkins et al. (1984) on preschoolers, this seems to indicate that among 7-year-olds, formal and theoretical strategies were not confined to the fantasy problems.

Implications and Recommendations

Overall, these results suggest that in certain conditions, 7-year-olds and even preschoolers as young as four exhibit signs

of deductive reasoning. Specifically, if the problem context is presented such that intrusion of practical world knowledge is effectively eliminated, as in fantasy premises, then performance in simple deductive reasoning tasks may be facilitated. Impact of task organization is less pronounced as originally proposed by Hawkins et al. (1984), but is also an important factor, especially when taken into consideration with other factors such as age.

The significant developmental trend found for the patterns of children's response justifications from empirical to theoretical also emphasize that deductive reasoning is inextricably linked with other cognitive processes such as attention, memory, inhibitory control, and language. Valid deductive reasoning, particularly with contrary-to-fact content, requires the capacity to attend to structural relationships of a proposition, construct mental representations, maintain them long enough in memory to manipulate these representations, and inhibit the semantic belief bias. In this task, the ability to articulate justifications for responses is also a significant component. All these involve cognitive maturational processes that children can develop through growth, education, training, and experience.

Given these complex cognitive prerequisites, it is indeed notable that few preschoolers in this sample were able to show signs of deductive reasoning capabilities. However, it is important to take into account Markovits, Schleifer, and Fortier's (1989) caution on what to consider as deductive reasoning. According to them, if deductive reasoning is seen as simply requiring the use of coherent rules that result in the correct answer to specific kinds of reasoning problems, then performance in deductive reasoning tasks such as that employed in this study may be a clear indication that children do have access to deductive reasoning under certain conditions. However, if deductive reasoning is considered to involve a "full understanding of the relations of necessity that govern classes of propositions," then additional indicators are needed to conclusively establish that children fully grasp the notions of logical consistency. In this study, the task involved a limited class of propositional reasoning problems. However, the theoretical justifications obtained from a

number of 7-year-olds and few 4-year-olds indicate that children of these ages may be capable of understanding and integrating structural relations among propositions, and are not merely responding based on syntactic cues or "atmosphere effect" strategies.

It should be noted, however, that although few preschoolers showed signs of deductive and theoretical competencies, they are more of exceptions rather than the rule. Majority of the 4-year-olds in this study's sample were still exhibiting empirically biased reasoning. However, this is not to say that empirically oriented reasoning at this age should be viewed in negative terms. As noted by Hawkins et al. (1984), the structure of such knowledge is ultimately of key importance for an understanding of the development of formal reasoning. It is only in these contexts of investigating logic and deduction that some of its "obstructive" implications are emphasized. In essence, empirical reasoning is a crucial part of cognitive development, and is even an adaptive and cognitively economical tool that is useful even as children mature into adulthood.

This study provides significant contributions to research on Filipino children's logical and deductive reasoning. Future research can extend initial findings of this study through the development of new reasoning tasks and methodologies that can measure children's capacities for deductive reasoning in a more sophisticated and systematic manner. This can help in generating more conclusive claims about children's logical competence. Adding more cross-age comparisons may also aid in integrating these findings with the broader context of children's cognitive development. The results of this study also suggest useful practical applications. Within the school context, teachers may want to explore the extent to which they can enhance and foster children's ability to reason logically. These may be in the form of teaching methods, in their manner of delivering information, and in their manner of eliciting responses from their students. Fantasy and make-believe play has also been suggested as a good way of facilitating logical reasoning in children. Because deductive reasoning is not an academic skill that is learned from a specific

subject matter, but rather a skill that is acquired and incorporated in everyday life, even parents can cultivate this skill at an early age. As suggested by this research, the beginnings of logical and critical analytic skills are rooted from an organized system of practical and empirical knowledge. Hence, parents can start instilling this capability in their children simply through provision of ample exposure to real-world events and constant communication with them about these experiences. The questions and answers that young children process in their day-to-day lives help them with the mental formation of relationships among semantic concepts and ideas — skills that allow them later to engage in higher-order cognitive processes and skills such as logical and deductive reasoning.

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Children's Understanding of Emotions in Rule-Free and Rule-Bound Situations

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The study investigated 4-and 7-year-olds' (N = 32) concepts about emotional consequences of goal achievement versus goal blockage in rule-free and rule-bound situations. Results indicate that both age groups are more likely to attribute a positive emotion to story characters who achieved their goals. Older children also attribute positive, but less intense, emotions to characters who fulfill desires by breaking rules. Additionally, older children more frequently predicted that characters who simply fail to get what they want feel very bad compared to characters who inhibit their desires to comply with the rules (who feel only a little bad). Both age groups explained emotions nearly always in relation to the characters' goal rather than rules or future consequences. Results are explored in relation to possible methods in making children understand rules and future consequences.

Children begin to learn to identify emotions at an early age, but as they continually develop, so do their understanding of various emotions. It is important, therefore, to distinguish between children's development of emotion states and their capacity to reflect on, verbalize, and understand said emotions (Lewis, 2000). Although children may be able to display emotions in various states, it is quite essential to separate emotional expression from the capacity to understand emotions. Gnepp (1989) found, for instance, that only school-age children fully understand that emotions are not just caused by external events but that they are mediated by prior experiences, beliefs, or explanations.

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Previous researches on young children have shown that they attribute feeling good or happy to the fulfillment of a goal (e.g., getting what they want), and associate feeling bad or sad to blocked desires (Stein & Levine, 1989; Wellman & Banerjee, 1991; Yuill, 1984). Thus, even young children's knowledge about emotions seems connected to their knowledge of mental states. In a classic study by Levine (1995), she found that children associate sadness with the belief that goal reinstatement is impossible. The utter loss of a goal is more commonly matched by children to a 'sad' emotion. Wellman and Woolley (1990) purport that children possess a mental world of thoughts, beliefs, desires, fantasies, mental entities and private selves—one which is closely linked to their emotional understanding.

Likewise, Liwag and Reyes (2004) investigated what Filipino children know about emotions. Using a goal-based appraisal analysis of children's emotion narratives, developmental differences in emotion narrative ability were found. Recollection and narration of Happy episodes invoked goal-attainment, whereas Angry and Sad episodes were recalled in relation to aversive conditions. Fear episodes were recounted in terms of anticipated negative outcomes.

From children's understanding of emotions in general situations of goal satisfaction, research attention has recently focused on more specific situations where goal attainment is qualified by particular constraints. What do young children understand about emotions in situations where, for instance, a rule has been imposed, and story characters either defy or comply with the rules, thereby pursuing or giving up their own goals? In an experiment by Kramer (1992), results indicate that nearly all 4- and 6-year-olds and most 8-year-olds gave predictions that a victimizer, one who gets the goal in defiance of a rule, will feel happy. Nevertheless, a developmental difference was found wherein 8-year-olds would more likely to predict an oppositely valenced emotion in this situation than 4- and 6-year-olds.

Lagattuta (2005, 2007) found that between ages 4 and 7, children increasingly predict that people will do what they ought

to do rather than what they want to do. Furthermore, she predicts that children will choose to exhibit willpower and in turn feel good about it. These imply that their understanding of rules and the matching emotions increases as they grow older during that specific stage. In another study, Lagattuta (2008) explored children's thoughts about desires, rules, future negative outcomes, or future punishment. Participants were made to predict and explain the characters' emotions. Results indicate that young children can already reason flexibly about emotions in rule situations when provided explicit, salient information about people's thoughts. Thus, children can manifest emotion understanding in situations where rules are presented.

The current study aimed to replicate the findings of Lagattuta (2005) on children's understanding of desires, rules, and emotions. However, her method was simplified by decreasing the number of story trials presented to the children. In her study, she utilized four age groups (4, 5, 7-year-olds and adults) to determine the developmental differences in children's emotion understanding. In the current study, only two age groups were involved due to limitations of time and resources. With certain variations, this study aims to explore children's understanding and beliefs about emotions in situations wherein a conflict between a person's desire and a prohibitive rule is present. More specifically, focus is given to the 4- and 7-year-olds' predictions and explanations for a character's emotions after this character decides to break the rules to fulfil his/her desires in contrast to where the character decides to follow the rules and abstains from fulfilling his/her desires. As with Lagattuta's (2005) study, this research focused on 4- to 7-year-olds because of the rapid development of children's understanding of mental states, rules, and emotions during this period. It was hypothesized that there would be a developmental difference between the 4- and 7-year-olds' emotion predictions, where the older children would provide more emotion-mismatch predictions for rule-bound situations. Furthermore, this study investigated children's knowledge about the emotional consequences of transgressing to satisfy one's desires. The

participants' responses were also assessed from resulting willpower decisions, or the adherence to the rules and the foregoing of desires. Explanations were reviewed in relation to references to character's goals, rules, or further consequences. Connections between the children's emotion predictions and emotion explanations were also analyzed.

METHOD

Participants

Participants were 38 children from two age groups: 22 4-year-olds (8 females and 14 males with M = 4 years and 4 months, range = 4 years to 4 years 11 months) and 16 7-year-olds (8 females and 8 males with M = 7 years and 7 months, range = 7 years 3 months to 7 years 11 months). The participants were recruited from a public day care center and a public elementary school in San Juan City, both of which serve children of low income families. All the participants were proficient in the native language (Filipino).

Materials

There were two types of story scenarios: simple desire stories and desire-rule conflict stories. All stories consisted of a series of simple colorful illustrations on 5 x 5 inch laminated cards (see Authors' Note). The stories were adapted from the study of Lagattuta (see Lagattuta, 2005) and were translated to Filipino to suit the participants' educational and economic backgrounds and to better facilitate the children's understanding of the questions.

Simple-desire stories. Simple-desire stories featured a girl character who wants to do a particular action and there is no prohibitive rule against that action. There were two possible endings: (a) goal-blocked endings (the character does not get what she wants; e.g. *"Gusto talaga ni Emma pumunta sa toy store para maglaro ng mga laruan. Naglakad siya papunta sa toy store at nakitang sarado ito")* or (b) goal-fulfilled endings (the character gets what she wants; e.g. *"Gusto talaga ni Emma pumunta sa toy*

store para maglaro ng mga laruan. Naglakad siya papunta sa toy store at naglaro ng mga laruan"). Note that aside from the first story card, no emotional information is expressed pictorially on the character's face.

Desire-rule conflict stories. Desire-rule conflict stories examined children's reasoning about connections between desires and emotions in situations where people should not do what they want to do. Stories featured a boy character who wants to do a particular action, but this desired behavior conflicts with a prohibitive rule. The rule applied in this experiment is a child-familiar prohibition about safety or a prudential rule (e.g., you should not run fast into the street). For all scenarios, the actual consequences of the character's behavior were purposely excluded so that participants' emotion predictions or explanations would be based on the character's act of complying versus violating rules rather than on given information about events that resulted from this decision.

Desire-rule conflict stories varied on two dimensions: (a) the source of the prohibitive rule (internal vs. external rule source) and (b) the character's ending action (willpower vs. transgression). For the internal rule source version, Ben is alone and thinks of the rule himself (e.g., *"Isang araw, mag-isang sinisipa ni Ben ang bola sa labas. Gumulong sa gitna ng kalye ang bola. Ngayon, gusto talaga ni Ben tumakbo ng mabilis papuntang kalye para kunin ang bola pero inisip ni Ben, 'Hindi ako dapat tumakbo papuntang kalye."*). In contrast, in the external rule source version, Ben's mother tells him the prohibitive rule (e.g., *"Isang araw, sinisipa ni Ben ang bola sa labas, kasama ang kanyang nanay. Gumulong sa gitna ng kalye ang bola. Ngayon, gusto talaga ni Ben tumakbo ng mabilis papuntang kalye para kunin ang bola pero sabi ng nanay ni Ben, 'Hindi ka dapat tumakbo papuntang kalye'"*).

For the willpower endings, the protagonist abstains from doing what he wants (e.g., *"Tignan natin kung ano ang piniling gawin ni Ben. Si Ben ay umiwas sa kalye."*), whereas for the transgression endings, the character decides to fulfill the prohibited desire (e.g., *"Tignan natin kung ano ang piniling gawin ni Ben. Si Ben ay*

tumakbo papuntang kalye at kinuha ang bola."). For all willpower endings, the characters pose with their arms behind their backs, with hands extending away from the desired object, to indicate that their act of compliance was final.

Here, it is important to clarify four features of the desire-rule conflict stories. First, despite variations in specific rule content, all stories explicitly mention the characters' desire (e.g., *"Gusto talaga ni Ben")* and explicitly state what he should not do *("Hindi ka dapat/ hindi dapat ako tumakbo papuntang kalye).* Second, as with the simple-desire stories, no emotion is pictured on the characters' faces when the desire, rule, or the final behavior is described (characters were either shown from the side, behind, or with their mouths occluded). Third, regardless of the rule source, the final willpower or transgression story card featured only the protagonist, making it ambiguous as to whether an authority figure witnessed the behavior. Finally, transgression endings did not portray any negative outcome for the protagonist (Ben is just out in the street; it was not portrayed whether he will get in trouble, get hurt, etc.). Similarly, willpower endings did not show any positive outcomes (Ben is just standing with his arms behind his back).

Questioning Procedures

Control questions (simple-desire and desire-rule conflict stories). For all simple-desire and desire-rule conflict story trials, participants were explicitly told the character's desire (e.g., *"Ngayon, gusto talaga ni Emma maglaro ng mga laruan"; "Ngayon, gusto talaga ni Ben tumakbo ng mabilis papuntang kalye para kunin ang bola").* To verify that participants encoded this mental information, the desire control question was asked before revealing the ending of the story *("Ngayon, ano ang gusto talagang gawin ni Ben/Emma?").* Desire-rule conflict stories further included a rule control question *("Ngayon, anong pag-uutos ang iniisip ni Ben? or Ngayon, anong pag-uutos ang sinasabi ng nanay ni Ben?").* Participants responded to the rule control question first for half of the trials and to the desire control question first for the other

half of the trials (the order of the rule vs. desire control question was randomized across story trials).

Test questions for prediction trials (simple-desire and desire-rule conflict stories). At the conclusion of the story (after Emma sees that the store is closed; after Ben decides to stay out of the street), the experimenter asked the primary emotion probe: *"Sa tingin mo, masaya ba o malungkot si Ben/Emma ngayon? "* Next, participants were shown a 4-point pictorial emotion intensity scale ranging from 1 *(magandang maganda ang loob)* to 4 *(masamang masama ang loob)* and they were asked the emotion intensity question: *'"Si* [character] *ba ay maganda ang loob o magandang maganda ang loob? (si Ben ba ay masama ang loob o masamang masama ang loob?)"* After judging the emotion intensity, participants were asked the emotion explanation question: *"Bakit maganda ang loob/ magandang maganda ang loob/ masama ang loob/ masamang masama ang loob ni* [character] *ngayon?* Finally, to allow participants to offer more than one emotion prediction, the experimenter asked the secondary emotion probe: *"Puwede bang may iba pang nararamdaman si* [character] *o sadyang* [response to the primary emotion probe] *lamang siya?"* If participants provided an additional emotion prediction, they were asked to explain the cause of the secondary emotion as well.

General Procedures

Participants were interviewed individually in a quiet room by a female experimenter. At the start of the session, the experimenter introduced children to the 4-point emotion intensity scale and labelled each emotion for them. She then asked the child to point to each of the emotions in random order (e.g., *"Ituro mo kung nasaan ang masama ang loob?").* After identifying each emotion expression correctly, the test trials began. The experimenter presented story cards individually as she read aloud the content. Interviews were tape-recorded and transcribed verbatim. The procedure lasted 10 to 15 minutes.

Each participant received a total of 6 story trials: 2 simple-desire prediction trials (1 goal fulfilled, 1 goal blocked), and

4 desire-rule conflict prediction trials (2 willpower: 1 internal rule source, 1 external rule source; 2 transgression: 1 internal rule source, 1 external rule source). Simple-desire stories were always presented for the first 2 trials, and Trials 3 through 6 were the desire-rule conflict predict-and explain trials.

Several measures were taken to control for order effects in this repeated measures design. The number of story trials were counterbalanced among all participants per age group. First, half of the participants in each age group received the goal-blocked simple desire ending first and the goal-fulfilled ending second, and the other half of participants received the opposite order. The desire – rule conflict scenarios were arranged so that across participants in every age group: (a) each rule source and ending action variation (e.g., internal rule, willpower ending) appeared equally in each order position, (b) each story (e.g., Ben story) appeared equally in each order position, and (c) each story plus ending combination (e.g., Ben story, external rule, transgression) was presented equally. Twelve order combinations were created following these criteria, with one version randomly assigned to each participant in each age group.

Coding of Explanations

Emotion explanations for all story types were classified into four categories using verbatim transcripts of the test sessions: (a) goal-oriented, (b) rule-oriented, (c) future-oriented, and (d) other.

Goal-oriented explanations were attributed to the character's emotion when the child mentioned the character's fulfilment or non-fulfillment of his or her goal (e.g., *"Kasi hindi niya nakuha yung bola."; "Kasi gusto niyang maglaro.").* Although goal-oriented explanations were not required to include an explicit volition term, such as *"gusto"* (want), they did have to include a specific reference to the goal stated by the story character (e.g., the participant had to say something about the goal of getting the ball from the street).

Rule-oriented explanations justified the character's emotion by whether the character followed or broke the rules (e.g., *"Kasi*

'di niya sinunod utos ng nanay niya."), or as caused by a character's obligation to follow the rules (e.g., *"Kasi sabi ng nanay niya huwag siya pumunta sa kalsada").* Rule-oriented explanations were required to include an explicit word or phrase, such as *"paguutos"* (rule), *"nakinig"* (listen), *"sumunod"* (obey), *"puwedeng gawin", "masama/mabuting gawin", "mabait/masunurin" or "masama/hindi masunurin", dapat/kailangan."*

Future-oriented explanations explained emotions in terms of a future negative or positive event that might or will happen (e.g., *"Dahil masasagasaan siya ng kotse"),* or by the fact that the character had avoided a potential negative future consequence (e.g., *"Kasi baka masaktan siya, dadalhin sa ospital").* These future-oriented explanations were further classified as hypothetical (the emotion was caused by what might happen, could happen, or could have happened) versus non-hypothetical (the emotion was caused by what will happen). Moreover, they were also assessed for references to future punishment (i.e., being witnessed, punished, or making another person angry).

The "Other" explanation category was reserved for any explanation that did not refer to the specified goal, the rules, or future consequences, for example, an emotion caused by a current event (e.g., *"Maganda ang loob niya kasi grade 1 na siya.").*

RESULTS

Out of the 22 four year-olds, 6 of the male respondents were dropped from the study due to their inability to respond to the control questions correctly and to the test questions sufficiently.

In a 2 x 2 x 2 repeated-measures ANOVA, age (4 – year-old, 7 – year-old) was the between-subject factor, and rule source (internal, external) and ending type (willpower, transgression) were the within-subjects factors. The dependent variables were the emotion predictions of the child to the different story trials *(maganda ang loob, magandang maganda ang loob, masama ang loob, masamang masama ang loob)* and the causes of his or her predicted emotions (goal-oriented, rule-oriented, future-oriented

(hypothetical), future-oriented (non-hypothetical).

Results are divided into three sections. 1) Initial emotion prediction analyses focus on the children's predictions for story character's emotions in simple desire and desire-rule conflict scenarios. 2) Explanation analyses examine how participants explained the cause or causes of these emotions. These approaches are combined in the final section by examining the 3) Relationship between participants' emotion predictions and their explanations. Every participant correctly answered the control questions for all story trials.

Emotion Prediction Analyses

Simple Desire Stories. 81% of both 4-year-olds' and 7- year-olds' responses to the primary emotion probe predicted that a person would feel good getting what he or she wanted. As well, 87% of 4-year-old and 93% of 7-year-old participants' responses predicted that a person would feel bad when his or her goal was blocked (see Table 1). None of the participants provided a mismatch for the secondary emotion probe for both simple desire stories. These findings reveal that there is no age difference between 4- and 7-year-olds in reasoning about simple connections between desires and emotions. Both age groups very often predicted that

Table 1. Children's Emotion Predictions for the Simple-Desire: Goal-Achieved Story

Story Trial	Emotion Intensity Scale	4-year-olds	7-year-olds	Total
Simple-Desire Goal-Achieved	Magandang maganda ang loob	31	69	50
	Maganda ang loob	50	13	31
	Masama ang loob	13	14	13
	Masamang-masama ang loob	6	6	6
Simple-Desire Goal-Blocked	Magandang maganda ang loob	6	6	6
	Maganda ang loob	6	0	3
	Masama ang loob	56	50	53
	Masamang- masama ang loob	31	44	38
Total		*100*	*100*	*100*

Note: All numbers are percentages.

a person's emotion would match the status of goal fulfillment: that when a person achieves his or her goals, he or she feels good and if the goal is not fulfilled, he or she feels bad. Furthermore, the results also imply that the children did not interpret the secondary emotion probe (e.g., *"Puwede bang may iba pang nararamdaman si Emma bukod sa* [child's answer]?") as an indication that their first prediction was not correct. It suggests that the children were not led to provide a secondary opposite-valenced emotion prediction.

Desire-Rule Conflict Stories. Desire-rule conflict stories are situations where goals are conflicted with a rule, specifically a safety rule (e.g., not running fast into the street), in achieving a desired goal. Since the study is interested in finding out about children's understanding of emotions in willpower and transgression situations, responses of children's emotion prediction in this scenario were analyzed, giving emphasis on the percentage of story trials in which children predicted an emotion mismatch (e.g., they predicted that a character would feel good in a willpower ending, where the character abides by the rule and in effect, does not get his goal).

As shown in Table 2, 31% of both 4- and 7-year-olds predicted an emotion mismatch for desire-rule internal transgression stories, where the children predicted that the character, after disobeying a rule that he thought about, feels bad. More than a third, or 38%, of 4-year-olds and 25% of 7-year-olds predicted an emotion mismatch for desire-rule internal willpower stories. That is, they predicted that the character would feel good even if he did not reach his goal due to a conflicting prohibitive rule that the character thought of himself. For the external rule story trials where the conflicting prohibitive rule was given by the character's mother, 19% of 4-year-olds and 44% of 7-year-olds predicted an emotion mismatch for the desire-rule conflict transgression situation and 44% of 4-year-olds and 19% of 7-year-olds predicted an emotion mismatch for desire-rule conflict willpower endings.

At face value, the 7-year-olds more often predicted an emotion mismatch when the character achieved his goal through

disobedience. They anticipated that the character would feel bad even if he got what he wanted if the means to achieve his desire is though explicit defiance of his mother's rule. On the other hand, the 4-year-olds more often predicted a mismatch when the character listened to his mother's rule even if this meant not getting what he wanted. The younger children predicted the character would feel good nevertheless. However, these differences were not statistically significant.

Table 2. Mismatched Emotion Predictions for Desire-Rule Conflict Stories

Ending Action	4-year-olds	7-year-olds
Transgression "feel bad" Predictions		
Internal Rule Source	31	31
External Rule Source	19	44
Willpower "feel good" Predictions		
Internal Rule Source	38	25
External Rule Source	44	19

Note: All numbers are percentages.

The 2 (age) x 2 (rule source) x 2 (ending) repeated measures ANOVA only resulted in a significant main effect for ending with $F(1, 30) = 21.348$, $p < .05$. This indicates that children significantly provided more opposite-valenced emotions for transgression than for willpower endings. Rarely did the 4- and 7-year-old respondents predicted emotion mismatches for scenarios where a conflicting prohibitive rule blocks the character's achievement of his goal. The data suggests that the children responded similarly to simple desire stories and desire-rule conflict stories, where they often predicted a positive emotion when desire is achieved (81% simple desire achieved vs. 81% achieved via internal transgression vs. 69% achieved via external transgression). Alternatively, they usually predicted a negative emotion when the desire is not met (91% simple desire blocked vs. 69% blocked via internal willpower vs. 69% blocked via external willpower). Age did not have a significant effect in emotion prediction in conflict -driven situations. The children predicted that rule abiders would feel bad and transgressors would feel good

so long as they achieve their goals at equivalent rates. Neither did rule source significantly affect the children's emotion predictions. They provided a relatively equivalent degree of emotion predictions whether the character recalled the prohibitive rule internally or heard the rule from his mother.

The 4- and 7-year-olds seem to be at par in predicting positive and negative emotions during rule-free situations when a desired goal is achieved or blocked, respectively. Likewise, they seem to predict positive and negative emotions at equal rates during an act of defiance or compliance, respectively, to a prohibitive rule during conflict-driven situations.

Simple Desire Versus Desire-Rule Conflict. Finally, the intensity of children's emotion attributions for characters in rule-free and desire-rule conflict stories was compared. As the data strongly suggests, children frequently attributed positive emotions to transgressors and to characters who achieve their goals while negative emotion attributions were given for characters who displayed willpower or had their goals blocked. The focus of these analyses is whether children rate the intensity of these positive and negative emotions differently in situations that involve rules versus no rules. Differences in emotion ratings would reveal whether children are sensitive to rule information when considering how people feel.

Table 3 shows the percentage of 4- and 7-year-olds who rated high intensities of positive *(magandang maganda ang loob)* and negative *(masamang masama ang loob)* emotion predictions for goal fulfillers and goal blocked situations in the presence and absence of rules. Among the 4-year-old respondents, characters in rule-bound situations were predicted to have more intense emotions than those in rule-free situations. They predicted that goal satisfiers would feel very good when transgressing than when a goal is simply achieved in a rule-free situation. The opposite is characteristic of the 7-year-olds; they gave a more intense emotion prediction for characters in the absence, rather than the presence, of rules. Similar to Lagattuta's findings, the children and adults in her study more often described people

whose goals were blocked in rule-free situations as feeling very bad than people who decided to inhibit their desires to comply with a rule while more frequent predictions of feeling very good were attributed to characters when they fulfilled their goals in no-rule versus rule situations (Lagattuta, 2005). However, analysis using two separate 2 (age) x 2 (rule presence) repeated measures ANOVA reveal no significant differences among these results.

Table 3. Predicting "Magandang Maganda ang Loob" (Feel Very Good) and "Masamang Masama ang Loob" (Feel Very Bad) Emotions in Simple-Desire Versus Desire-Rule Conflict Situations

Ending Action	4-year-olds	7-year-olds
Desire fulfilled "feel very good" Predictions		
Simple desire (no rule)	31	68
Transgression (rule)	50	50
Desire blocked "feel very bad" Predictions		
Simple desire (no rule)	31	44
Willpower (rule)	41	34

Note: All numbers are percentages.

Analyses of Emotion Explanations

As earlier described, children's emotion explanations were coded into 4 categories namely, a) goal-oriented (e.g., *"Kasi hindi niya nakuha yung bola."; "Kasi gusto niyang maglaro.");* b) rule-oriented (e.g., *"Kasi 'di niya sinunod utos ng nanay niya."; "Kasi sabi ng nanay niya huwag siya pumunta sa kalsada");* c) future-oriented: hypothetical (e.g., *"Kasi baka masaktan siya, dadalhin sa ospital");* d) future-oriented: nonhypothetical (e.g., *"Dahil masasagasaan siya ng kotse");* and e) other (e.g. *"Kasi grade 1 na siya").* Since none of the children provided secondary emotion predictions, only primary emotion prediction explanations were analyzed.

Simple-Desire Stories. As in Lagattuta's findings in 2005, for rule-free situations, the respondents nearly always explained a person's positive or negative emotion in relation to goals (85% goal achieved; 97% goal blocked). Only 3% of the children provided a future-hypothetical explanation for a positive emotion prediction

in a goal-achieved situation and the rest of the 13% were explanations that cannot be classified ("others"). For goal-blocked endings, nearly all children gave goal-oriented explanations to their emotion predictions. Three percent (3%) gave other explanations that did not pertain to rules or future consequences. The data is shown in Table 4.

Table 4. Percentage of the Different Types of Explanation for the Predict and Explain Task for *Simple Desire Stories*

Story Trial	Explanation Orientation	4-year-olds	7-year-olds	Total
Simple-Desire Goal-Achieved	Goal	81	88	85
	Rule	0	0	0
	Future – hypothetical	6	0	3
	Future – non hypothetical	0	0	0
	Other	13	13	13
Simple-Desire Goal-Blocked	Goal	94	100	97
	Rule	0	0	0
	Future – hypothetical	0	0	0
	Future – non hypothetical	0	0	0
	Other	6.	0	3

Desire-Rule Conflict Stories. Since all the stories explicitly state the character's desire for the goal, children's emotion prediction explanations highly reflect goal-oriented reasons, similar to the results for simple desire trials (e.g., *"Kasi nakuha nya ung bola"; "Kasi naglalaro sya ng bola").* The study, though, is interested in children's understanding of future consequences and rules and how this affects their emotion predictions. This section of the results will focus on, if any, developmental differences in children's explanations for their emotion predictions as affected by their understanding of rules and future outcomes.

A 2 (age) x 2 (rule source) repeated measures ANOVA reveals a significant interaction between rule source and age with $F(1, 30) = 4.785$, $p < .05$. This suggests that 4- and 7-year-olds explain their emotion predictions differently when characters defy or comply with the rules when the rule was conceived by the character internally or when it was stated by an authority figure, such as the mother.

More specifically as seen in Table 5, 4-year-olds gave more rule-oriented reasons for explaining their positive and negative emotion attributions to rule-bound situations than the 7-year-olds. For explanations that refer to future consequences, the 7-year-olds significantly referred to such more than 4-year-olds whether the rule source is external or internal.

Table 5. Percentage of Different Emotion Explanations by Age and Rule Source

Explanation	Rule Source	4-year-olds	7-year-olds
Goal-Oriented	Total	72	78
	Internal Rule Source	78	75
	External Rule Source	66	81
Rule-Oriented	Total	16	6
	Internal Rule Source	16	6
	External Rule Source	16	6
Future-Oriented	Total	6	11
	Internal Rule Source	6	10
	External Rule Source	6	13

Relating Emotion Predictions to Explanations

Lastly, we examine the connection between the children's desire - emotion mismatch predictions (willpower = feel good; transgression = feel bad) with how they explain these predictions (reasons pertaining to goals, rules or future outcomes).

Table 6 displays these data. For both age groups there is a clear link between emotion prediction and explanation type. The children more frequently provided rule and future-oriented emotion explanations after predicting that transgressors would feel bad or compliers would feel good than after attributing positive emotions following transgression or negative emotions following willpower decisions. Conversely, 4- and 7-year-old children consistently explained emotions in relation to characters' goals less often after making desire-emotion mismatch predictions than after making desire-emotion match predictions.

Table 6. Emotion Predictions and Specific Explanation Types

Category of Analysis	Emotion Intensity Scale	4-year-olds	7-year-olds
Goal-Oriented Explanation	Predict desire-emotion mismatch	34	35
	Predict desire-emotion match	44	42
Rule-Oriented Explanation	Predict desire-emotion mismatch	20	50
	Predict desire-emotion match	16	0
Future-Oriented Explanation	Predict desire-emotion mismatch	29	39
	Predict desire-emotion match	0	14

Note: All numbers are percentages.

DISCUSSION

Developmental studies on children's emotion understanding have solidly established that children's attribution of emotions is overwhelmingly positive for goal-achieved situations and negative for goal-blocked situations. In recent years, considerable interest has turned to children's understanding of emotions in situations where transgressors commit desired acts in defiance of a rule. Can young children also appreciate the emotions of characters who exhibit willpower and inhibit their desires for the sake of doing what they *ought* to do?

Our study had three main goals. The first was to compare 4-year-old and 7-year-old children's attributions of emotions in desire-rule conflict situations. The second was to assess the degree to which children provide emotion mismatch predictions for characters who transgress and those who exhibit willpower. And third was to examine how children defend their emotion predictions (their understanding of goals, rules and future consequences and outcomes).

We found that Filipino children, whether 4- or 7-years of age, predicted that characters feel good in goal-fulfilled situations and feel bad in goal-blocked situations nearly 100% of the time in stories *not* involving prohibitions. The same is true, however, when a prohibition is invoked, such as when transgressors get what they want or compliers do *not* get what they want. These findings seem to support some part of Lagattuta's (2005) and other related studies where children below 7- or 8-years old most

commonly attributed positive emotions to rule breakers (they got what they wanted) and negative emotions to rule compliers (they did not get what they wanted) (Arsenio & Kramer, 1992; Barden et al., 1980; Keller et al., 2004; Nunner-Winkler & Sodian, 1988). However, in our data, there were no significant developmental differences between emotion predictions of 4- and 7-year-olds even in desire-rule conflict scenarios. The older children in this study still exhibited this happy victimizer phenomenon where children expect a wrongdoer to feel good (attribution of positive emotions) and consequently expect a conformist to feel bad. Several studies have shown that if the transgression produces a tangible outcome for the transgressor, 4- to 6-year-olds tend to attribute positive emotions supported by outcome-oriented reasons (Barden, Zelko, Duncan, & Masters, 1980; Murgatroyd & Robinson, 1993; Nunner-Winkler & Sodian, 1988). This may well explain too why our 7-year-old respondents, just like the 4-year-olds, gave emotion prediction explanations which highly reflected goal-oriented reasons. Other studies (Murgatroyd & Robinson, 1993, 1997) have found that the attribution of positive emotions following a transgression continued well into middle childhood and even adulthood. Keller et al. (2002) suggested that the happy victimizer attribution in older children may be due to the possibility that older children actually reject and differentiate themselves from the hypothetical transgressor. Therefore, in further studies, we recommend that it may be necessary to ask children who attribute positive feelings to a hypothetical transgressor about the feelings they themselves would have in such a situation of transgression (which they themselves may reject morally and would not commit).

Another reason for the discrepancy between the findings of the current study and that of Lagattuta's in 2005 is that the respondents were from low socio-economic backgrounds. In the Philippine setting, the common prohibitive safety rule which is not to run out into the street, may not be as enforced among these children by their parents. Playing in the streets is something quite common here, in fact, as even basketball courts are put up in every street corner and the streets are regarded as

playgrounds where children play street games such as *piko, patintero,* and the like. Perhaps, we speculate, these children did not fully recognize this rule as imperative.

Neither did the intensity of the 4-year-old children's emotion prediction fully parallel the results found by Lagattuta in 2005. It seems that the younger children in this study did not show as much sensitivity to rule information and how people would feel. In a study by Nunner - Winkler and Sodian in 1988, they concluded that 4-year-olds do not expect the moral value of an action to have an impact on an actor's emotions, whether the actor is a wrongdoer or a "moral hero". This finding cannot be explained by a failure to understand the moral rule violation. The 4-year-olds just seemed to base their emotion attributions solely on outcome information. In light of this relation between 4-year-olds' focus on personal motives and action outcome, the study found a significant number of goal-oriented explanations for the respondents' emotion attributions. On the other hand, the results indicate that 7-year-olds provided more intense emotion predictions in rule-free situations. As in Lagattuta's (2005) findings, the respondents consistently predicted that people who fulfill desires in no-rule situations feel very good, whereas those who fulfill desires by breaking rules feel only a little good, if they feel good at all. As well, they more frequently predicted that people who simply fail to get what they want feel very bad than people who inhibit their desires to comply with the rules.

In research on children's developing conceptions of emotion, it has been shown repeatedly (e.g., Harris, 1983, Harter, 1983) that young children do not understand that a single situation can provoke both positive and negative emotions in the same person. Being unable to conceptualize emotional conflict, young children will attribute only one of two potentially conflicting feelings to a person at a given time. This may explain why none of the respondents gave an oppositely valenced secondary emotion prediction to our secondary emotion probe *"Puwede bang may iba pa siyang nararamdaman bukod sa* [primary emotion prediction]?"

Most of the children provided explanation answers which are goal-based. This clearly supports previous studies which have indicated that children are more likely to attribute emotion-laden answers when the goal is met. In this study, children who have provided matching emotion answers more often gave explanations which are goal-oriented. This is in line with the findings of previous researches on young children which have shown that they attribute feeling good or happy after the acquisition of a goal or getting what they want, but associates feeling bad or sad when the desire is blocked (Liwag & Reyes, 2004; Stein & Levine, 1989; Wellman & Banejee, 1991; Yuill, 1984). The older children also gave more future-oriented explanations than did the 4-year-olds. On the other hand, the younger ones resorted to more rule-oriented reasons. This dramatic elevation in future-oriented explanations at age 7 is perhaps most compelling because future events are never explicitly mentioned in any of the story scenarios. The older children seemed to have more cognitive abilities to link the behaviors to their possible future consequences while the younger ones can only relate these behaviors to explicit rules, as in "blind" obedience.

One implication of this study is for authority figures, such as parents and teachers, to explore methods that will make children understand the importance of rules and the consequences and future outcomes of compliance or defiance to such rules. It may also be helpful to promote children's positive feelings for expressing willpower, to feel good about acts of prosocial behavior.

Moreover, the use of goal-laden situations appropriately may help in teaching rules and consequences in children. Given that most children chose goal-oriented explanations, it may be beneficial to explore possible ways of using this orientation in teaching children future implications of their choices.

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AUTHORS' NOTE

Samples of all pictorial materials used in this study may be obtained from the authors at mcbalboa@gmail.com or susa.caparas@gmail.com.

Social Representations of the Reproductive Health Bill

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To investigate the social representations of the Reproductive Health (RH) Bill, this research examined newspaper articles that captured the intense public debate on the legislation of the Bill. A survey was also conducted among 57 members of both pro and anti RH Bill groups. Content analysis and discriminant procedures showed that the discourse on the RH Bill primarily wove a contested story about contraception. The debate on sex education and poverty was found to be secondary. Results further showed that the social meaning of the RH Bill as expressed in media was strikingly consistent with the collective thinking of people belonging to the pro and anti RH Bill groups. The implications of these findings are discussed.

"The bill is not about condoms and pills and neither is it about religion. It is primarily about health and rights"

Representative Edcel Lagman, Sept. 9, 2008

The proposed legislation(s) (are) "DEATH Bills because they ultimately lead to Divorce, Euthanasia, Abortion, Total Reproductive Health and Homosexuality"

Jaro Archbishop Angel Lagdameo,
July 23, 2008

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July 11, 2008 marked the celebration of World Population Day and the beginning of an intensified campaign among groups in the Philippines that advocate or criticize the legislation of the Reproductive Health Bill. Both pro and anti RH Bill groups intended to create an impact that would influence the members of the 14th Congress set to deliberate on the Bill and the President's State of the Nation Address.

The proposed "Reproductive Health, Responsible Parenthood and Population Development Act of 2008" (henceforth referred to in this paper as the RH Bill) aims to nationalize the efforts of promoting reproductive health. These efforts are currently devolved among the local government units. The Bill highlights government's responsibility to keep couples, and especially women, well-informed about available family planning methods that they can freely use depending on their needs and beliefs. Through government-initiated programs, information not only on family planning but total reproductive health care will be supported by the availability of quality health care services (*Reproductive Health Bill: Facts, fallacies,* 2008). The RH Bill covers ten major areas (PLCPD, 2008) that include maternal, infant and child health and nutrition as well as family planning information and services. The Bill does not propose to legalize abortion but advocates having programs to prevent abortion and provide assistance to women who may experience post-abortion complications. If the RH Bill will be legislated, the state shall have national programs that promote adolescent and youth health as well as propagate information on sexuality and sexual and reproductive health through counseling and education. The Bill likewise gives special attention to the current needs and concerns of women by aiming to eliminate violence against women and by institutionalizing programs for the treatment of breast and reproductive tract cancers as well as other gynecological conditions. Through the passage of the RH Bill the country will have institutionalized efforts to prevent and effectively manage cases of reproductive tract infections (RTIs), HIV/AIDS and other sexually transmittable infections (STIs), infertility and sexual dysfunction. The Bill

likewise emphasizes male involvement and participation in reproductive health.

One may surmise that the RH Bill, given facts such as the 2007 Philippine population growth rate which is the third highest in Southeast Asia and the 23% infant mortality rate (2006 data; PLCPD, 2008), would easily be acceptable to Filipinos. Yet heated debates ensued, especially between the Catholic Church, legislators, members of the academe and non-government organizations, on whether the Bill should be passed. Hence this study explores how the RH Bill is understood and described by various social groups in Philippine society. It uses the theory of social representation as a lens for investigating this contentious issue.

The Dynamic Nature of Social Representations

The sensitivity of social representation theory as a framework in exploring context-embedded phenomenon has been repeatedly demonstrated in a number of studies (Wagner, Duveen, Farr, Jovchelovitch, Lorenzi-Cioldi, Markova & Rose, 1999; Inzon, 2007; Castro & Gomez, 2005). Social representations are woven across the minds of people (Wagner et al., 1999), they are like a "network of interacting concepts and images whose contents evolve continuously over time and space" (Moscovici, 1988 p.10). The representation of a socially relevant phenomenon is created through the everyday discourse of social groups and shared between its members (Wagner, Elejabarrieta & Lahnsteiner, 1995). The content of these conversations as well as the collective experience of a society lead to consistency in beliefs and ideas (Moscovici, 1988).

Although social representations may be shared by members of society, it is not synonymous to Durkheim's concept of collective representation. The latter is static and represents the summation of the representations formed by individuals (Moscovici, 1988). According to Moscovici (1988), there are ways by which representations become social.

Hegemonic representations are shared by most if not all members of the society. It demonstrates the points of agreement on the social phenomenon. These representations may be coercive because they push the others to conform to what is generally held. *Polemic* representations are not shared by all members of society. These are determined by the antagonistic relations among its members and are usually borne out of social conflict and controversy.

Social Representation of Contentious Social Issues across Social Groups

In the process of being familiar with a societal issue, different meanings are created by social groups. For example, varying representations of how the RH Bill protects life and family may be held by conflicting groups such as the Catholic Church and the Bill's advocates.

Divergence among social groups stem from their "understanding of social phenomena which in turn constitute their social identity" (Wagner et al., 1999, p. 3). Groups are determined based on their defining characteristics as opposed to other groups. They never exist in isolation from other groups or from events happening in society. Usually, disruptions or changes instigated by other groups or societal events disturb the normality of a group's existence. Social representations of the 'disruptive' phenomenon develop and lead to common understanding that facilitates in-group communication and concerted actions (Wagner et al., 1999).

Social representation can be used to position and reposition the identity of one's group in relation to a rival group. The object of the representation can be used to achieve "positive positioning" to validate their actions and avoid "negative positioning" or the experience of guilt and marginalization (Inzon, 2007).

The identity of a group is further strengthened because of the tendency of people to associate with those whose attitudes are similar to their own. Studies on group polarization show that preexisting opinions of individual group members are intensified

as they relate with like-minded people (Sunstein, 2002). Groups have a tendency to "maintain a homogamic personal and media discourse" (Wagner et al., 1999, p. 5). This means that people prefer to talk to and read news articles that confirm rather than confront their existing beliefs.

Meaning-making thus becomes a group effort and the social representations constructed of a social phenomenon such as the RH Bill is dependent upon the social identity and position of the group vis-a-vis the social object.

Social Representations and the Media

The formation of social representations through discursive processes occurs both at the inter-individual level and at the level of mass media (Moloney & Walker, 2000). At the inter-individual level, conversations and meaning-making may be confined to a certain group and then slowly influence its immediate environment. However, it is through mass media that information rapidly spreads in the public sphere (Moloney & Walker, 2000).

Media plays a significant role in shaping the social representations that circulate in the public realm. Of the many forms of available media, newspapers provide valuable information on the issues faced by society (Campbell & Gibbs, 2008). Newspapers have been used as a valuable source of data in various social representation studies (Campbell & Gibbs, 2008; Foster, 2006; Castro & Gomez, 2005; Moloney & Walker, 2000). They serve as an important channel for debates on issues and the way they present information influences social representations (Foster, 2006).

Research Objectives

The goal of this two-part study is to describe the social representations of the Reproductive Health Bill. Two strategies were used to explore the nature of these representations as publicly discussed by social groups and as portrayed in the

individual minds of the utterers. Study One content analyzed utterances of social groups in media while Study Two conducted a survey among individual members of these social groups.

STUDY ONE

Study One looked at the discursive content of the debate on the RH Bill that occurred in media. Local newspapers became an avenue for expressing the opinions of both pro and anti RH Bill groups.

METHOD

Data Collection

I collected qualitative data from media reports of the *Philippine Daily Inquirer* (or *PDI*), which is the leading newspaper in the country in terms of broadsheet readership (World Association of Newspapers, 2008). I specifically searched for news and opinion articles covering the period of July until November 2008 (these are the peak months when most of the articles on the RH Bill were published) in the *PDI* website *inquirer.net* using the keywords *Reproductive Health Bill.* A total of 174 articles were retrieved from the search, distributed as follows: July: 43; August: 25; September: 50; October: 36; and November: 20.

From this total corpus of 174 articles, I drew 60 quoted statements of social groups from excerpts of interviews or position papers that *PDI* columnists and news writers captured in their articles. I chose to focus on quoted texts to obtain the actual utterances of the groups rather than the opinions of the columnists/ news writers.

Data Analysis

The resulting articles were content analyzed using NVivo - a qualitative data analysis software. I encoded the data according to the utterers' positive or negative attitude towards each of the 10 areas covered by the Reproductive Health Bill. Using the investigative method of categorizing qualitative data (Tashakkori

& Teddlie, 2003), those 10 areas were transformed into themes used for grouping the data. Additional categories were developed based on emerging themes and an incidental category ("Others") was created to classify quoted statements that are not relevant to the study. All encoded quoted statements within themes were transported to a matrix (word file) and reviewed to double-check the coding.

RESULTS

Hegemonic and Polemical Social Representations of the RH Bill

The findings show that there is consensus among the pro and anti RH Bill groups (primarily involved in media discourse on the bill) on the need to promote "maternal, infant and child health and nutrition" as well as "adolescent and youth health". The groups also agree that something should be done to eliminate violence among women. Table 1 shows the summary of the hegemonic representations of the RH Bill. Although there were no quoted statements from the pro RH Bill group on "adolescent and youth heath" and the "elimination of violence against women", these elements are part of the RH Bill proposed by its supporters in Congress which led to the assumption that these are advocated by those who are for the legislation of the RH Bill.

Table 1. Discursive Agreement: Hegemonic Utterances of the Social Groups Involved in the Discourse

Element	ProRH Bill Utterances	AntiRH Bill Utterances
Maternal, infant and child health and nutrition	Women lack reproductive health care	Good provision of the bill
Need for midwives and emergency obstetric care		
Adolescent and youth health	(Part of RH Bill)	Good provision of the bill
Elimination of violence against women	(Part of RH Bill)	Good provision of the bill

The groups agree that there is a need to improve government services that protect the health and rights of women and children. These elements of the Bill are perceived to be necessary by the pro-RH Bill advocates as demonstrated in the statements and in their act of including these in the Bill. The anti-RH Bill group on the other hand describe the three elements as "good provisions of the bill".

However, the two groups expressed differing views on family planning, management of post-abortion complications and sex education. Another point of disagreement that surfaced in the content analysis is the relationship between poverty and population. Thus, "poverty and population" was included as a major theme. The antagonistic representations of the pro and anti RH Bill groups are presented in Table 2. The points of contention were presented alongside each other to demonstrate the differences.

Although both groups say that family planning must be exercised by couples, their ideas differ on what methods must be endorsed by the Bill. For the anti-RH Bill group, only natural family planning methods must be supported by the government. The Catholic Church primarily espouses this belief since they claim that some modern contraceptive methods (such as pills and IUD) are abortifacients. As shown in the following utterances, the Catholic Church says that this element of the Bill is against Catholic doctrines:

> *"Although it (RH Bill) mentions that abortion is a crime, it does not state explicitly that human life is to be protected upon conception as stated in the Constitution...The prevention of implantation of the fertilized ovum is abortion ... It is a fallacy to think that abortions can be prevented by promoting contraception. Contraception is intrinsically evil" (CCC 2370, Humanae Vitae, 14).*
>
> (*PDI*, Nov. 15, 2008)

Table 2. Discursive Debate: Polemical Utterances Demonstrating Conflicting Attitudes to the RH Bill

Element	ProRH Bill Utterances	AntiRH Bill Utterances
Family planning information and services	Couples must have the right to choose the mode of family planning Poverty is caused by corruption Contraceptives are medically safe Government structures must be in place to ensure information and access to both natural and modern contraceptive methods	Only natural family planning methods are acceptable. Contraceptives pose health risks to women
Prevention of abortion and management of post-abortion complications	The Bill does not condone abortion· Women experiencing post abortion complications must be given assistance	The bill "promotes medical assistance to abortionists..."
Education and counseling on sexuality and sexual and reproductive health	Age appropriate sexuality education promotes correct sexual values, freedom of choice and responsible exercise of one's rights. Reproductive health education will help avoid misinformation from unguarded sources	Education on sex will corrupt the minds of innocent children· Only parents should teach their children about sex or should be the ones to decide on what/how i t should be taught
Population and poverty	Uncontrolled population growth contributed to and increased poverty in the country.	Poverty is caused by corruption and the number of poor people in misgovernment not overpopulation· Population has nothing to do with poverty Population growth can be a tool for eradicating poverty

The Church also says that modern methods of family planning pose risk to the health of women, they increase the probability of breast cancer, gonorrhea and deep venous blood clots among others. The anti-RH Bill group, especially the Catholic Bishops' Conference of the Philippines, described the Bill in its current form as "unacceptable" (CBCP, November 14, 2008) primarily because it promotes a choice between natural and modern contraceptive methods. In describing the Bill, the Archdiocese of Manila said in a statement that "reproductive health is made synonymous with abortion packaged as a method of family planning," (*Manila Archdiocese launches signature campaign vs. RH Bill, 2008).* The pro-RH Bill group on the other hand expressed a different storyline. The RH Bill's promotion of the right to choose contraceptive methods according to one's beliefs and values will lead to lower incidences of unwanted pregnancies and therefore abortion:

> *"It is very clear that the [reproductive health] bill is anti-abortion. Family planning prevents abortion because it avoids the occurrence of unwanted pregnancies. It actually reduces the incidence of abortion,"*
>
> (*PDI*, July 20, 2008)

Those who advocate the passage of the RH Bill say that contraceptives are medically safe and the government must ensure that couples have enough information and ready access to their chosen family planning method.

Divergent perceptions are also expressed on the provision of post-abortion support to women. The pro-RH Bill group asserts that such provision does not mean accepting abortion but ensuring humane treatment for women who may experience life-threatening complications. In contrast, the anti-RH Bill group says that the Bill is providing assistance to abortionists.

Another difference is in the two groups' views on adolescents being subjected to formal education on sex and reproductive health. The anti-RH Bill group states that this will unnecessarily corrupt the minds of the young and that the responsibility of

educating students on sex must be given to or should be upon the discretion of parents.

Pro-RH Bill groups support the Bill's proposal to nationalize sex education among Grade Five to Fourth Year High School students. Since sexuality and reproduction are developmentally salient issues for adolescents, it will be good to provide proper venues for them to learn age-appropriate information that will guide the development of their sexual values.

Those who support the RH Bill see the impact of high population growth on poverty. On the other hand, the groups that are against the Bill believe that population has nothing to do with poverty. It is misgovernment and corruption that cause poverty and having a big populace can be positive for the country if the government can turn such into human capital.

STUDY TWO

A survey was used to gather data about the subjective meanings of the RH Bill among the members of organizations that stand for or against its legislation. The survey was conducted after the analyses of the newspaper articles used in Study One. Through the survey, I hoped to find out whether the hegemonic and polemical social representations created in the public sphere are reflected in the collective minds of pro and anti RH Bill groups. The sampling design ensured almost equal participation from both groups and the instrument measured their attitudes towards the hegemonic and polemical statements that emerged in Study One.

METHOD

Participants

The sample included a total of 57 participants who are members of social groups identified as key utterers in the media discourse on RH Bill. The key utterers are those whose statements were captured by news and opinion articles identified in Study One. Twenty-eight are Catholic priests and a nun from parishes and congregations in Metro Manila and the Bicol Region.

Most of the utterances in media that showed disagreements with the elements of the Bill and its legislation came from members of the Catholic Bishops Conference of the Philippines and other lay Catholic organizations. The rest of the participants are members of non-government and government organizations and offices that are within the Reproductive Health Advocacy Network (RHAN) and/or members of the academe that openly support the RH Bill.

Materials

A survey instrument was constructed based on the results of Study One. The items came from the utterances coded for each theme. As shown in Table 3, the number of questionnaire items per theme corresponded to the percentage of quoted statements. For example, since half of the quoted statements pertain to "Family planning information and services", half of the questionnaire items (6 of the 12 items) came from the utterances representing the general perceptions of pro and anti RH Bill groups that were coded under this theme (e.g., "Couples must have the right to choose family planning methods based on their needs, personal convictions and religious beliefs."). Since the RH Bill in general and family planning in particular were associated with abortion, items exploring this were also included (e.g., "RH Bill is against abortion." and "RH Bill legalizes abortion."). Two items pertain to education on sexuality (e.g., Only parents have the right to teach their children about sex) while another two concerns the relationship between population and poverty (e.g., "Population has nothing to do with poverty").

The respondents were asked to rate their level of agreement with each item in a scale of 1 (no, no) to 5 (yes, yes), 5 being the highest. To ensure proper classification of respondents as pro or anti RH Bill, each participant was asked for the "Name of Organization" in which they belong and to mark whether they are for or against the legislation of the RH Bill.

Table 3. Frequency of Quoted Statements for each Theme according to Position (Pro or Anti)

Themes	Frequency of ProRH Bill statements	Frequency of AntiRH Bill statements	Total Frequency	Percent of Total Statements by Theme	Corresponding Number of Items in the Questionnaire
Family planning information and services	19	11	30	50	6
Population and poverty	1	9	10	16.7	2
Education and counseling on sexuality and sexual and reproductive health	4	5	9	15	2
Prevention of abortion and management of post-abortion complications	3	1	4	6.6	1
Maternal, infant and child health and nutrition	3	1	4	6.6	1
Adolescent and youth health	0	1	1	1.7	0
Prevention and management of reproductive tract infections (RTIs), HIV/AIDS and other sexually transmittable infections (STIs)	1	0	1	1.7	0
Elimination of violence against women	0	1	1	1.7	0
Treatment of breast and reproductive tract cancers and other gyne-cological conditions	0	0	0	0	0
Male involvement and participation in reproductive health	0	0	0	0	0
Prevention and treatment of infertility and sexual dysfunction	0	0	0	0	0
TOTAL	**31**	**29**	**60**	**100**	**12**

Data Collection

I contacted various parishes (personally or through my relatives) in Metro Manila while my husband went to parishes and congregations in two provinces of the Bicol Region to search for possible survey participants. I sent each priest and nun a personalized letter with an attached questionnaire.

My brother-in-law who works for a non-government organization that is part of the Reproductive Health Alliance Network (RHAN) brought the letter and questionnaire to the numerous RHAN meetings to gather responses from the supporters of the RH Bill. He also distributed the questionnaire to offices of Congressmen in the House of Representatives. I likewise requested a graduate assistant to hand-carry and collect accomplished survey forms from Ateneo professors who openly supported the legislation of the RH Bill ("Ateneo 14").

Data Analysis

I used discriminant analysis on the 12 statements. This was done to determine which items are good predictors of membership in pro or anti RH Bill groups. The analytical procedure checked which factors demonstrate hegemonic and polemical social representations of the pro- and anti-RH Bill groups.

RESULTS

Inter-group Social Representations of the RH Bill

What social representations of the RH Bill demonstrate agreements and disagreements among groups? Discriminant analysis was used to determine the hegemonic (consensual) and polemical (antagonistic) representations of pro and anti RH Bill groups on the statements that represent the published utterances on the Bill.

The discriminant analysis correctly classified 98.2% of originally grouped cases (chi square = 95.4; df = 12; $p < .001$). Table 4 shows the discriminant loadings of the 12 statements while Table 5 illustrates the means of the pro and anti RH Bill respondents on the 6 highest discriminating statements.

Table 4. Discriminant Loadings of the 12 Items: Discriminating Social Representations of Pro and Anti RH Bill Groups

Survey Questionnaire Items	Structure Matrix Load
All types of contraceptives or modern family planning methods are unacceptable/immoral	.681
RH Bill legalizes abortion.	.505
RH Bill is against abortion.	-.487
Adolescents (Grade 5 to 4th year HS) must be given formal education on reproductive health to avoid misinformation from unguarded sources.	-.484
Poverty in the Philippines is caused by corruption and misgovernment not overpopulation.	.449
The RH Bill promotes the use of both natural and artificial family planning methods.	-.417
Both natural methods and modern methods of family planning aim to prevent unplanned pregnancies	-.326
Couples must have the right to choose family planning methods based on their needs, personal convictions and religious beliefs.	-.276
Population has nothing to do with poverty.	.257
Only parents have the right to teach their children about sex	.248
The government needs to improve on its maternal, infant and child health programs	-.140
It is acceptable to save the life of a woman whose life is threatened after undergoing abortion.	-.092

Table 5. Structure Loads and Group Means of the 6 Highest - Loaded Items

Survey Questionnaire Items	Load in Structure Matrix	Averages on a 5- Point Scale	
		Pro RH Bill	Anti RH Bill
All types of contraceptives or modern family planning methods are unacceptable/immoral	.681	1.2	4.2
RH Bill legalizes abortion.	.505	1.3	4.0
RH Bill is against abortion.	-.487	4.3	1.7
Adolescents (Grade 5 to 4th year HS) must be given formal education on reproductive health to avoid mis-information from unguarded sources.	-.484	4.8	2.5
Poverty in the Philippines is caused by corruption and misgovernment not overpopulation.	.449	3.1	4.8
The RH Bill promotes the use of both natural and artificial family planning methods.	-.417	4.7	2.7

There were significant differences regarding the attitude of pro and anti RH Bill groups on some statements that pertain to family planning and sex education. Statements that emphasize the acceptability of modern contraceptive methods as well as the relationship between RH Bill and abortion surface antagonistic representations among the pro and anti RH Bill groups.

However, both groups agree that couples must be given the freedom to choose their own family planning method.

Regarding sex education, the groups disagree on giving formal education to adolescents with the pro-RH Bill group having a very favorable attitude towards it and the anti-RH Bill group being slightly against it. There is however a consensus among groups that it is not right to solely leave the responsibility of educating children about sex to parents.

The pro and anti RH Bill groups seem to be in agreement that population is related to poverty. The anti-RH Bill group strongly agrees with the statement "Poverty in the Philippines is caused by corruption and misgovernment not overpopulation" while the pro-RH Bill group has neutral attitude towards it.

There is consensus among the groups on the need to enhance government programs on maternal, infant and child health as well as in providing assistance to women who may experience post-abortion complications.

DISCUSSION

The results of the qualitative media analysis and the quantitative survey showed that the discursive debate on the Reproductive Health Bill is primarily about contraception. Half of the media utterances (30 of the 60 quoted statements) centered on the acceptability and accessibility of modern contraceptive methods. As shown in the outcomes of the discriminant analyses, statements pertaining to contraception were found to be most predictive of group membership as either pro- or anti-RH Bill.

Polemical Social Representations of the RH Bill

The dominant polemical social representations can be seen through the "concepts and images" (Moscovici, 1988) used by the groups in describing the RH Bill as it is equated to modern contraceptives. The anti RH Bill group, particularly the Catholic Church described the Bill as "anti-life" (*Church population stand called 'parochial', 2008),* "evil" (*El Shaddai leader calls House population bill evil, 2008)* and "synonymous with abortion" (*Manila Archdiocese launches signature campaign vs. RH Bill, 2008*) due to its provision to propagate the use of and ensure access to modern contraceptives. As shown in the results of Study One, these perceived meanings of the Bill make it defiant of Church doctrines especially since contraceptives were described by the anti-RH Bill groups as abortifacients.

The pro-RH Bill groups on the other hand perceive the meaning of RH Bill as having "informed choice" and as "anti-abortion" (*Reproductive Health Bill loses backer says Archbishop, 2008).* Advocates of the Bill argue that since modern contraceptives prevent unwanted pregnancies, it also prevents abortion. Through the legislation of the Bill, the national government will ensure that Filipinos, regardless of economic status, shall have information and access to their chosen family planning method.

There seems to be a disagreement between the pro and anti RH Bill discourses on when contraception acts to prevent conception. Further, the anti-RH Bill discourse appears to fuse artificial contraception with abortion. The arguments against the RH Bill claimed that "contraception is intrinsically evil" because it leads to the "prevention of (the) implantation of fertilized ovum". The Catholic Church considers this as abortion because the fertilized ovum is "already a human life" (CBCP, November 14, 2008). The pro-RH Bill discourse say that "The State and the Catholic Church need not clash on family planning because both the natural methods endorsed by the Church and contraceptive use and other modern modes of family planning have a common objective, which is to prevent unplanned

pregnancies." (*QC dad moves wedding site as population debate rages, 2008*).

Other minor polemic discourses about the RH Bill revolved around sex education and the relationship between population and poverty. The anti-RH Bill storyline emphasized the responsibility of parents for educating their children about sex. Thus, parents and not the state should decide how and when children must be exposed to such discussions. The anti-RH Bill groups argue that providing formal sex education and counseling to the youth will "corrupt the minds... of very young school children" (*El Shaddai leader calls House population bill evil, 2008).* In contrast, the pro-RH Bill discourse focus on the responsibility of the government to provide formal education and counseling on sex. They argue that especially now that children have easy access to information, providing sex education will protect children from unguarded source and "promote correct sexual values" (*Reproductive Health Bill: Facts, fallacies, 2008).*

The other polemic discourse centered on whether population growth causes poverty. For pro-Bill groups, population contributes to the occurrence of poverty while for those who are against the Bill, it is not overpopulation but the corruption and mis-management of the country's resources by the government that cause poverty.

The analysis of the survey conducted after examining the social representation of the RH Bill showed that the thinking of people involved in the discourse as expressed in media were strikingly consistent with the collective thinking of individuals belonging to the pro and anti RH Bill groups. As seen in the analysis of survey results, the statement that primarily discriminate the pro-RH Bill from anti-RH Bill groups pertain to contraception (e.g., *All types of contraceptives or modern family planning methods are unacceptable/ immoral.*). This was followed by two statements pertaining to abortion (e.g., *RH Bill legalizes abortion* and *RH Bill is against abortion)* which were uttered by the social groups in the context of the Bill promoting usage of modern contraceptives. Similar to the social meanings of the RH Bill

that emerged in Study One, the results of Study Two validated the differences in the collective meaning of sex education and the relationship of poverty and population among the social groups involved in the discourse.

According to Wagner et al. (1999), groups develop a shared meaning of a phenomenon based on their group identity. These representations are intensified in individual minds due to the group's tendency to "maintain a homogamic personal and media discourse" (Wagner et al., 1999, p. 5). As seen in the study, polemical patterns on the major utterances on contraception, sex education, population and poverty that were captured in Study One were found to be consistent as themes that best differentiate the members of the pro and anti RH Bill groups.

Although the discursive debate showed strong points of disagreements between the pro and anti RH Bill groups, the results of both studies likewise surfaced patterns of hegemony that gives room for possible conflict resolution. Both groups agree on the need to improve government services that promote the health of mothers, children and the youth. The pro and anti RH Bill groups also agree that the state must enhance its efforts to eliminate violence against women.

Implications and Recommendations

It is evident in the results of both studies that the discourse on the Reproductive Health Bill primarily wove a contested story about contraception. The utterances in the public sphere on sex education and poverty are but secondary. Given these, groups involved in the discourse may focus on analyzing the varying social meanings of contraception as an initial step towards understanding the social meaning of the RH Bill. Both pro and anti RH bill advocates may try to widen the discursive space by thoroughly exploring first how the other group understands contraception and providing avenues for discussions that are focused on this particular issue or theme.

Limitations

Social Representation. As a researcher, this is the first time that I am using social representations as framework. It must have been interesting to explore how the groups (especially the Catholic Church) developed their interpretation of this "threatening" phenomenon through the process of objectification and anchoring. Anchoring is creating an understanding of an unfamiliar phenomenon by integrating it to the existing set of knowledge. Objectification, on the other hand, means creating an icon, metaphor, or trope that will symbolize the new phenomenon. The metaphor used is dependent upon the experience of the people constructing the representation (Wagner et al., 1999).

On methodology. The methodologies used in the research seemed to be an appropriate mix of qualitative and quantitative methods. However, there may be other quantitative methods that will allow gathering and analyzing data on social representations that reside on the public sphere or collective minds of the utterers rather than in their individual minds.

Also, I found using actual utterances (quoted statements) in media analysis quite limiting. Most of the interviews and published statements of social groups were written based on the interpretation of the columnists or news writer. It may be better to use data from the websites of groups involved in the discourse as these can likewise be considered as actual utterances.

Using the social representation theory as a lens in studying the RH Bill as a contentious social issue allowed us to understand where the pro- and anti-RH Bill groups agree or disagree. Seeing where they are coming from promotes an understanding of their position on the issue. The framework does not intend to determine which of the social meanings held by the groups are more reasonable and correct. However, as it presents the shared and differing social meanings of the RH Bill, it is hoped that it will not only promote greater understanding of the phenomenon but of the context and the resulting collective minds of the conflicting groups. These greater understanding can be considered as initial steps toward conflict resolution.

Reflexivities

For two years after College, I volunteered in a non-government organization (AUSCULTA Service Consortium) that provided health care to the far-flung barrios of the Bicol region and the island of Mindoro. I watched a Mangyan mother die while giving birth to a baby girl (named after me) who also died two weeks after. They traveled for three days in a hammock when she experienced abdominal pains and hoped for medical assistance from our small clinic ran by a nurse, a midwife and other volunteer health workers (empowered barrio women).

The need to improve government programs on reproductive health is so real in my mind. At some point while doing the paper I felt frustrated that both pro and anti RH Bill groups continue their debate on contraception while knowing that women and infants continue to die because of lack of access to adequate health services. I thought that since the RH Bill provides structures and systems that ensure government responsibility for maternal, children and youth health, the Bill should be legislated for these outweigh any philosophical or spiritual implications.

Given my own views on RH Bill that were shaped by my life experiences, it would have been better if I had asked one or two blind coders that do not have a strong positive or negative stance on the legislation of the RH Bill. Although a constructivist-oriented research such as this renders such "contamination" as inevitable, having blind coders could still enhance objectivity especially in Study One.

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The Phenomenology of Obsession

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Studies on obsession have shown inconsistent findings and often have no ecological validity (Purdon & Clark, 2000). This study addressed these problems through a phenomenological approach. In-depth interviews were conducted with ten participants who had experienced obsession. Meaning units from the interviews were assigned textural descriptions. The themes that emerged from the analysis included positive feelings such as happiness and excitement when the object of obsession was present; negative feelings such as sadness and frustration when the object of obsession was absent; and a sense of control over the object of obsession. The essence of obsession was found to be the experience of the individual wanting to temporarily lose control.

Obsession first gained the attention of psychologists in 1838 when Esquirol described a patient with Obsessive-Compulsive Disorder (OCD). Eventually, other psychologists took interest in obsession's role in the development of not only Obssessive Compulsive Disorder (OCD), but also in symptoms linked to obsessive affect like rage and anger, and psychotic symptoms like delusion and catatony (Burgy, 2005). Recently, studies have focused on the nature of obsessive thoughts and their role in OCD and Obsessive Relational Intrusions (ORI). Wegner's (1989) thought suppression paradigm served as a springboard for the rise of models on obsession. Examples of these models include Salkovski's (1985) perceived responsibility model and Klinger's

(1996) model on current concerns (Clark & Rhyno, 2005). These and many other models and theories have been used to explain the role obsession plays in addiction, eating disorders, OCD, and ORI.

Two themes have emerged from the studies done on obsession. First, there really does not seem to be a clear definition of obsession. On the one hand, obsession had been defined as an unwanted recurrent intrusive thought, but it is difficult to differentiate obsession from other concepts such as worry and rumination. Purdon and Clark (2000) observed that experimental studies done on obsession lack ecological validity because the obsessive thoughts replicated in the laboratory had not been thoughts that non-clinical individuals obsess about. Second, studies conducted on the topic have yielded inconsistent claims on the nature of obsession. For example, Wegner and his colleagues (1987) theorized that the more an individual tries to suppress an obsessive thought, the more it intensifies. This has been known as the rebound effect. However, when Clark and Purdon (2001) and other authors performed revised experiments with Wegner's (1987) White Bear Suppression Inventory, their results did not show a rebound effect among their respondents.

Given the inconsistencies and ecological validity limitations present in previous studies, a phenomenological approach seems the most appropriate one to use to understand the experiences of individuals with obsessive thoughts. Through this, a more holistic and clear conception of obsession may be developed. The present study will hopefully serve as a stepping stone in understanding the nature of obsession and pave the way to more theoretical advances in future studies in this area.

The Nature of Obsession

There are two generally-used perspectives on the nature of obsession: the psychodynamic and cognitive-behavioral perspectives. Obsession, according to authors like Burgy (2005) and Cooper (2005), stems from placing a high value on an object that is difficult to attain. Studies using the psychodynamic

perspective have mostly been done in the clinical setting, with definitions of obsession based on clinical samples and perhaps only applicable to clinical cases. On the other hand, Wegner (1989), who takes the cognitive-behavioral perspective, conceptualized obsession as stemming from a rebounded suppressed thought or the reorganization of an individual's memory. Obsessive thoughts were defined as repetitive and easily-induced in a non-clinical sample.

Other researchers, using a psychodynamic framework, construe obsession in other ways. For example, Gross (in Avasthi & Kumar, 2004) sought to define the boundaries of obsession, overvalued ideas, and delusions, saw obsessions as egodystonic and initiating subjective feelings of compulsion that are often resisted by individuals. On the other hand, Burgy (2005) argued that an obsession is strongly related to thoughts that individuals overvalue. Cooper (2005) elaborated on this phenomenon further and stated that obsessions were manifested on things that were not easily within reach for a person. Obsessions interrupt the flow of thought, interfere in task performance, and is associated with negative affect. Furthermore, obsessions can be developed as a defense against loss, as an attempt within the psyche to create a situation where nothing has been given up, symbolized by alternating opposing thoughts, which are never resolved (Cooper, 2005).

Psychologists have claimed that obsession can manifest itself in different ways. As many as more than twenty types of obsession have been identified (Burgy, 2005). Among these are overvalued ideas, phobias, affects like rage, anger, love, impulsive acts like suicide, homicide, pyromania, kleptomania, dromomania and sexual impulses. Obsession has also been linked to clinical cases specifically in obsessive compulsive disorder and schizophrenia.

Obsessions are observable not only in clinical cases, but also in non-clinical samples. They occur as thoughts, images and impulses, and can be perceived as less intrusive. In a study conducted by Langlois and his colleagues (2000) on obsessive intrusive thoughts and worry in a non-clinical sample, they found that individuals viewed obsession as involuntary and egodystonic behaviors that are in conflict with the ideal ego.

Wegner (1987) further classified obsession into two types: traumatic and synthetic. Traumatic obsession may result from a massive change in the organization of an individual's memory. This can lead the individual to think about a (traumatic) event over and over again. One possible cause is that the individual had failed to completely react to the event. Another reason is that the individual may be in the process of trying to self-heal by habituating the traumatic event (Wegner, 1987). Synthetic obsession, on the other hand, could result from an individual's desire to suppress a thought. According to Wegner's (1987) thought suppression paradigm, when a thought is suppressed, it may rebound until it gets synthesized into an obsessive thought.

But just what triggers an individual's obsession and its contents? Again, Wegner's (1987; 1989) thought suppression paradigm has linked obsession to high thought frequency. In Wegner's White Bear Suppression Inventory, participants were asked to suppress the thought of a white bear for a period of time. Once the individuals were allowed to think about the white bear again, they were asked to keep talking about the white bear. But when asked to focus on another thought, the participants reported difficulty doing this because they had already become obsessed with the thought of the white bear (Wegner, 1989). However, Clark and Rhyno (2005) reported that there was no clear link between thought frequency and obsession. Non-clinical individuals reported that their most unwanted intrusive thoughts were restricted to obsessional content like 'thinking constantly about unwanted injury', and occurred only a few times a year. External cues were said to trigger or provoke unwanted intrusive impulses. However, it is unclear how environmental context contributes to the trigger of unwanted intrusive thoughts that intensify during periods of solitude, as observed by Rachman (1981 in Clark & Rhyno, 2005). Although simple event marking has been used, the ecological validity of such experiments has been questioned by Clark and Purdon (2001). It is difficult to monitor obsession in non-clinical cases because there are variations in the criteria used to determine target thought occurrences even if individual differences are evenly distributed via random assignment.

Thought frequency could play a role in the maintenance of obsession, however. The paradoxical effect of obsessional thought suppression is the constant monitoring of target thoughts. This is important in determining the basis and the components of obsessive thoughts, such as dysfunctional beliefs, that make one experience obsession (Purdon & Clark, 2000). Dysfunctional beliefs include the need to control unwanted intrusive thoughts and associating these with committing a shameful immoral act. Psychologists have theorized that belief-fueled obsession may be caused by stress and a misinterpretation of an event (Purdon & Clark, 2000). According to the Harrowitz Formulation (in Clark & Rhyno, 2005) and Wegner (1987), unwanted cognition present in obsessional thoughts are provoked by highly stressful or traumatic events (Clark & Rhyno, 2005; Rachman, 1997). Lee and Telch (2004) expanded on this hypothesis by identifying two types of obsessional models: autogenous and reactive obsessions. Autogenous obsessions are sexual, aggressive, blasphemous, or repulsive thoughts and involve images or impulses that are highly aversive and unrealistic in nature (Lee & Telch, 2004). Individuals perceive these obsessions as egodystonic and very unacceptable. Thus, they feel the need to control or erase these thoughts. Autogenous obsessions "are likely to be elicited without clearly perceived triggers or by triggers symbolically associated with the thoughts" (p. 794). For example, the letter "X" triggers the thought of hitting the family dog. Respondents rated autogenous obsessions as bizarre, unlikable, unacceptable, and guilt-provoking because they were thought of as threatening to have in mind (Lee & Telch, 2004).

Reactive obsessions, on the other hand, are perceived as non-threatening because they are relatively realistic aversive thoughts such as concerns on contaminations, mistakes, accidents, asymmetry, or disarray. They are more likely to occur, and are more likely to be triggered by external cues that are associated with a threat. For example, an individual may undertake a hand-washing ritual because he is threatened by dirt contamination. Respondents have stated that reactive obsessions lead them to worry about the thoughts coming true.

These obsessions elicit more confrontational, behavioral control strategies like washing one's hands ten times to makes sure they are not going to be contaminated (Lee & Telch, 2004).

Another possible explanation for the phenomenon of obsession is Klinger's (1985) model on current concerns where obsessions are said to provoke a great feeling of responsibility (Clark & Rhyno, 2005). It can make a person highly uncomfortable and to continually check on a thing or two impulsively so that they would be assured that everything is fine (Clark & Rhyno, 2005).

Processes of Obsession and Their Links to the Development of Psychopathologies

Obsession has been linked to several processes in cognition, affect, and behavior. Clinical studies have focused on how obsession leads to the development of psychopathologies like OCD, eating disorders, ORI, and addiction. Non-clinical studies, on the other hand, have tried to link frequent intrusive thoughts to obsession and its role in depression.

Avasthi and Kumar (2004) pointed out that most studies done on OCD have focused more on its treatment aspect rather than identifying its causes. Twin studies and fMRIs conducted in both India and Europe have revealed that genetic predisposition (as well as interaction with the environment), contributes to the development of OCD (Groothest, 2008). Like Wegner's (1989), Langlois and his colleagues' (2000), and Lee and Telch's (2004) studies, Grotheest (2008) defined obsession as involuntary repetitive unwanted thoughts and focused on the content of these thoughts and their possible link to the development of OCD. Burgy's (2005) phenomenological study on the psychopathology of OCD also revealed that obsessive thoughts, not obsessive affect nor behavior, play a role in the psychopathology of OCD (Burgy, 2005).

But obsession can be manifested in a number of behaviors, too. For instance, 'abnormal' eating habits in the mid-century were related with patients' obsessive interest in reducing body weight (Bruch, 1952, 1965 in Bowman, 1998). In 1903, Janet identified bulimia nervosa as one of the many behavior types of

impulsions, like manias for walking, riding, pain, mutilation, and drinking (Bowman, 1998). When the desire to achieve thinness becomes an obsession (Bowman, 1998), eating disorders such as anorexia or bulimia nervosa may be the result. Obsession, in this case, is expressed as risky behaviors such as extreme dieting, bingeing and purging that become symptoms of eating disorders.

Studies on Obsessive Relational Intrusion (ORI) have suggested that breakups from relationships can drive a person to obsession. ORI is an unrestrained process of repeated and undesired attempts at intimacy escalation with another person who explicitly does not want such intimacy. People showing such obsessive behaviors expect to be recognized positively by their ex-partners (Kam & Spitzberg, 2005, in Cupach & Spitzberg, 2005). They may or may not be perceived as threatening. However, when perceived as threatening, ORI meets most legal requirements as a form of stalking. Significant overlapping of ORI and stalking is expected given the persistent efforts at unwanted intimacy which are perceived as threatening (Cupach & Spitzberg, 2005). It is unclear, though, as to whether obsession is really what individuals experience when they stalk, whether they are indeed obsessed with intruding on the lives of their former lovers. Studies have simply speculated that obsession is at the heart of stalking behaviors.

As for obsession and addictive behaviors, psychologists such as Cooper (2005) assert that addiction is not very different from obsession because both processes place a high value on an object, as in the repeated use of a substance or the persistence of a behavior despite clear evidence of the negative effects of the usage or the act itself. Obsessional thinking does not promote well-being (Wegner (1989) and the failure to suppress obsessive thoughts can make a person suffer severe depression (Purdon & Clark, 2000). Moreover, Rachman (1997 & 1998 in Purdon & Clark, 2000) argued that when an individual sees that an obsession has a catastrophic significance, he or she will exert greater efforts to control it. However, when this backfires and the

obsessive thoughts even increase in frequency (Purdon & Clark, 2000), the results may be even more pathological.

It is clear that psychologists have difficulty agreeing on the nature of obsession, thus the need to continue closely examining the phenomenon. In order to gain a deeper understanding of the phenomenon, a phenomenology of obsession may be needed. For only one thing is certain and agreed upon by researchers interested in the phenomenon: obsession exists and is experienced by individuals.

Phenomenology is a philosophy founded by Edmund Husserl in the early twentieth century. It has been used to find answers on "...how objects and events appeared to consciousness since nothing could be even spoken about or witnessed if it did not come through someone's consciousness." (Smith, 2003, p. 25). Phenomenology is mainly concerned with human experience with the goal of attaining the 'essence' or pure, basic and raw human experience (Denscombe, 2003). Because obsession is elusive to the nominative eyes of quantification and statistical inferences, we attempt in this paper to present a fresher view on obsession by phenomenologically scrutinizing what is an indisputably noticeable, but often overlooked cognitive phenomenon (Sanders, Whitty, Murray, & Devitt, 2004).

METHOD

Design

The goal of our study is to find and describe the essence of obsession. This was done through in-depth, relatively unstructured interviews with ten individuals who had experienced the phenomenon (Creswell, 1998). An overall structure of the experience was constructed based on the respondents' account of their experiences (Giorgi & Giorgi, 2003). During the whole study, the following rules were observed to maintain the validity of the data. These had been the Rule of Epoche, Rule of Description, and Rule of Horizontalization (Spinelli, 1989; Creswell, 1998; Smith (ed), 2003; Denscombe, 2003).

The reliability of the procedure was established through Lincoln and Guba's (1985) audit trailing (Merriam, 2002), while validity was ascertained through Lincoln and Guba's (1985) member checking and peer debriefing techniques (Kopala & Suzuki, 1999). Moreover, the researchers also asked an expert on the phenomenological approach to determine internal validity by using Moustakas (1994, in Creswell, 1998) criterion. Data analysis was likewise conducted with Moustakas' (1994) revision of the Stevick-Colaizzi-Keen method (Creswell, 1998).

Participants

Ten participants who met the singular criterion of reporting to first-handedly experiencing an obsession were recruited to participate in the study. Their ages ranged from eighteen to forty-one years old. Six of the participants were female, the other four were male. Eight of them were undergraduate students, one was an unemployed graduate, and another was currently employed. Nine of them report that they are not suffering from a mental illness while one participant had been diagnosed with depression by a psychiatrist. They were asked to describe their experience of obsession during the interview (Creswell, 1998). Participants were given the freedom to terminate the interview if talking about the experience became difficult for them. However, none of them chose to do so. The interviews lasted from between one to three hours.

Procedure

For the duration of the study, the researchers followed the three basic rules of phenomenological research by providing a description of the phenomenon that was as faithful as possible to the answers of the respondents. The Rule of Epoche enabled the researchers to bracket out all their biases and assume the position of a stranger (Spinelli, 1989; Denscombe, 2005; Creswell, 1998). Next, the Rule of Description kept them faithful in describing the phenomenon (Denscombe, 2005; Spinelli, 1989; Smith (ed), 2003; Creswell, 1998). Lastly, the Rule of

Horizontalization allowed the researchers to draw meaning from the respondents' descriptions of their experience (Spinelli, 1989; Smith (ed), 2003; Denscombe, 2005; Creswell, 1998).

The study involved responses from people who had already experienced obsession. The interviews were relatively unstructured so that respondents were given the opportunity to explore beyond their perceptions of the phenomenon (Denscombe, 2003). There were no attempts to change the interviewees' view of the experience. The role of the interviewer was to listen and to reflect on what the interviewee said. The questions asked during the interview covered the following: experience of obsession's origin, process, effects on the person involved and the environment, and reflections. The participants who responded to the questions posed by the interviewer answered from the perspective of everyday life.

Data Analysis

Interviews were transcribed and insights from the interviewer were analyzed using Moustakas (1994) modification of the Stevick-Colaizzi-Keen method (Creswell, 1998). The following were the steps involved. First, the data went through horizontalization where all statements were given equal worth and then put into meaning units. Second was textural description where the researchers wrote descriptions of the experience using verbatim examples. Lastly, imaginative variation or structural description were done by the researchers in order to reflect on their own descriptions and analysis of the phenomenon (Creswell, 1998).

By constructing an overall description and meaning of the experience of obsession through post structural analysis, the researchers were able to generalize in a "...psychologically meaningful way, and deepen the essential understanding of the experiences by reducing myriad details to their essential components" (Giorgi & Giorgi, 2003, p. 256). The data analysis was further validated through Lincoln and Guba's (1985) member checking, in which participants were asked to validate the researchers' analysis (in Kopala & Suzuki, 1999).

RESULTS

Meaning units from the interviews were given textural descriptions and sub-themes. Three main themes emerged. First, positive feelings such as happiness, joy, thrill, and excitement. These were followed by a temporary "high" in the presence of the object of obsession. Negative feelings such as sadness, frustration, deprivation, and desire also surfaced in the absence of the object of obsession. These experiences were linked to the individual's control over the object of obsession.

Positive feelings such as happiness and excitement occurred when the individual's object of obsession is present. For example, Participant One shared that she felt happiness whenever she is able to spend time with her object of obsession:

> *Tapos, like, wala—like, pag-obsessed ka, lagi kang masaya. Parang ganoon.*
> Participant 1, F, 20

Her object of obsession triggered feelings of happiness, and made her want to give into the experience of obsession. On a similar note, Participant Two felt joy whenever she was with her object of obsession.

> *Kasi nag-e-enjoy talaga akong kumain. Ewan ko kung bakit. Hindi ako masyadong enjoy...Ok lang. Enjoy din naman kapag may kasama ako pero mas enjoy ako kapag mag-isang kumain.*
> Participant 2, F, 18

Like other participants, Participant Two's feelings of joy were also influenced by the presence of others when she is with her object of obsession.

Participant Seven feels thrill and excitement whenever she discovers and invests her resources on objects that are related to her object of obsession.

> *Sa akin, kinilig ako minsan to the point na nagpabili ako ng manga sa papa ko. Tapos, pinanood ko na lahat ng mga episodes!*
> Participant 7, F, 20

> Kunwari...hmmm...kunwari, yung *crush* ko na medyo ko siyang *crush* na *5 years*. Alam ko mahilig siya...sa mga korny *jokes*....Mahilig pala siya sa korny *jokes!* Ah! Wala lang. Ako din. Mahilig din ako sa korny *jokes*. Mas nagugustuhan ko sila ng konti....Mas nakikita ko yung *likeability* niya, yata pag mas alam ko yung ano niya...
> Participant 7, F, 20

It is at this point when the participants had become aware of their obsession. They explained that they were thrilled and excited to learn more about their objects of obsession.

Eventually, however, obsessed individuals were not able to maintain the presence of their object of obsession. Factors that hindered them included lack of resources such as money and time, or the people around them did not approve of the object of obsession. Participant Four explains that when he did not have the money he needed to buy a cell phone, he felt deprived of a need.

> *And number 3, I didn't have*...ano pa ba? *A cell phone? Honestly* yun... *Probably there's this, there's something that you want what you need... Probably what I identify with. Probably what I need.* Talaga, noong *kid* ako, *those became my obsessions.* Kasi, kulang sila palagi *for me.*
>
> Participant 4, M, 20

Once obsessed individuals were deprived of their objects of obsession, they felt frustrated and sad, and tried to find ways to cope with the absence. Some tried to replace their object of obsession with another object.

> *Naaasar ako tapos naghahanap ako ng ways para mawala yung isipan ko dun sa laro. Parang imbes na tumulong ako sa bahay, maglilinis ng ano man. Sa TV naman ako pupunta o kaya maglalaro ako sa labas, o makikilaro ako sa kung sino.*
> Participant 4, M, 19

Being separated from the object of obsession for a long period of time created an even stronger desire for it. Participant Six had distanced herself from an ex-boyfriend she had been obsessed with but felt a strong desire to be with him nevertheless.

We were sprawled on the bed giggling when John had come back and flopped right on beside me....Me erupting with hidden desire...deep inside.
Participant 6, F, 20

Obsessed individuals tried to exercise control over the object of obsession. What they prioritize or invest in, and the influence of others on them determined whether or not their object of obsession would be present or absent. Participant One prioritized her object of obsession over her homework; Participant Two limited the time she spent with her object of obsession in the presence of her friends, but otherwise invested all her resources to be with her object of obsession.

Kaya nga ayun eh. Kaya nga ayaw kong nag-ho-homework kasi it takes me away from it.
Participant 1, F, 20

Pero pag may kasama akong other than my friends, pigil ako dun sa obsession ko. Although kumakain pa rin ako pero mas demure na.
Participant 2, F, 19

Hindi. Obsession ko siya dahil pag gusto ko yung pagkain inuubos ko siya. Tsaka whatever the means, gagawin ko para makuha yung food.
Participant 2, F, 19

Obsessed individuals eventually found themselves reaching a "high" — a moment where they temporarily lose control over themselves. This occurs when they found themselves overflowing with positive feelings over their obsession. This "high" became the crux of the experience as they re-experienced the oscillating feelings associated with the absence and presence of the objects of obsession. Participant Eight shared the "high" she gets after she slashes herself, a behavior her object of obsession, Marilyn Manson (a singer-celebrity), is known for doing repetitively.

...paglalaslas....ayaw mong mamamatay pero feel mo na gusto mo naman—siguro na-high ka...? Pag-nag-ru-rush yung

> dugo.... Tapos, *feeling* ko noong *time* na yon. *Feeling* ko lahat yun ay tama. *As in,* basta *anything* na sabi ni *Manson,* tama. Parang wala ka ng *sense of judgment.* Parang ganoon....
> Participant 8, F, 19

In essence, obsession, in these non-clinical sample, is an experience in which the individual feels highly positive about the presence of the object of obsession and very negatively in its absence. Obsessed individuals find themselves oscillating between the two sets of feelings like children on a swing, until they reach the crux of the experience. The crux, the "high", happens while they feel positive about their actions. Somehow, this "high" allows them to temporarily lose control of themselves — the point in which they feel released "from the swing" to experience flight for a moment. Once the "high" ends, they hit the ground and once again repeat the experience of obsession.

DISCUSSION

The obsessive experiences of the non-clinical participants in this study did not seem to have been induced by thought suppression (e.g., Wegner, 1989). Purdon & Clark, 2000). Interestingly, the obsessed participants here appear to overvalue the feelings they derive from the presence and absence of their objects of obsession, not the thoughts of their objects of obsession (Burgy, 2005; Cooper, 2005). They may even have several objects of obsession at one time, and could replace their objects of obsession at will.

Studies on non-clinical obsession have found that participants perceive obsession to be involuntary and egodystonic (Langlois, et al, 2000; Wegner, 1989; Lee & Telch, 2005). This does not appear to be so in our phenomenological exploration and one possible reason for that is we were concerned with our participants' experience rather than perception and judgment of the obsession.

Perhaps what separates an obsessed individual in a non-clinical setting from an individual in a clinical setting (where

obsession is a process that could be held responsible for the development of psychopathologies such as OCD, bulimia, and anorexia nervosa) is the ability to control the objects of obsession, as our participants seem able to do to some extent. The inability to control these thoughts leads to feelings of depression and helplessness (Burgy, 2005; Brown, 1998). Cooper (2005) had pointed out that the repetitive or ritualistic behaviors of obsessed individuals in a clinical setting may arise from the individual's need to restore balance in the psyche after the loss of the object of obsession. Future studies on obsession as an everyday phenomenon as opposed to a pathological condition can now focus more systematically on factors that differentiate the two.

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Risk-Taking Among Filipino Adolescents: A Review with Implications for Research

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The paper integrates and analyzes the local data and literature on Filipino adolescent risk-taking published in the last two and a half decades (i.e., since 1981), using a developmental and ecological perspective. The authors first summarize the documented data on the incidence of risky behaviors, specifically substance use, risky sexual activity, and delinquency; second, the factors associated with the risky behaviors are presented; third, the authors analyze the prevalent themes from the literature and propose variables and mechanisms for conceptualizing and explaining adolescent risk-taking. Implications for further local research are discussed, which highlight the need for more complex research designs that attend to the *processes* and *multiple contexts* of risky behaviors among Filipino youth.

In recent decades, a growing number of large-scale and cross-sectional data sets have addressed adolescent risk and sources of vulnerability in the Philippine context (see Alampay, De la Cruz, & Liwag, 2003 for a review). As later reviewed in this paper, these data sets present a picture of a significant number of Filipino youth exploring or engaging in such risk-taking behaviors as smoking, drinking, and drug use; delinquent acts; and sexual activities. The numbers are significant, more so, because the potential individual and social consequences of risky behaviors are costly: they can derail a young person's path to

adulthood and jeopardize his or her future prospects, as well as those of his or her family, community, and larger society. There is tremendous concern among parents and educators about how to proactively protect young people from the deleterious short-term and long-term offshoots of the risks they take in adolescence. Changing unhealthy behaviors in adolescence has a broad impact on our collective future, reducing the burdens of injury, disease, human suffering, and their associated psychological and economic costs.

In this paper, we aim to provide a clearer understanding of risk-taking among Filipino adolescents. We summarize and integrate the relevant local data and studies conducted in the last two and a half decades (i.e., from 1981), and propose a framework for conceptualizing and studying adolescent risk-taking. We do so using a *developmental* lens, which involves an analysis of risk-taking behaviors in the context of the developmental tasks and transitions unique to the adolescent stage (Schulenberg, Maggs, Steinman, & Zucker, 2001). As such, the paper begins with an overview of the perspectives and models that link the phenomenon of risk-taking to the particular characteristics of being an adolescent.

Why Do Adolescents Take Risks?

Adolescence is a time in the human lifespan when individuals are inordinately compelled to try on new attitudes, roles, and behaviors. For many young people, this may include taking risks, making mistakes, and generally acting in ways that appear to adult observers as impulsive, irresponsible, and potentially self-harming. The incidence of high-risk and health-compromising activities such as underage drinking, use of illegal drugs, or extreme sports during this developmental period suggests that risky behavior may indeed be a common, if not universal aspect of the adolescent experience (Grube, 2005; Nugent, 2006).

Psychologists now think that some risk-taking can, in fact, be considered developmentally appropriate in adolescence, and that healthy risk-taking *is* a positive tool in an adolescent's life

for discovering, developing, and consolidating his or her identity (Baumrind, 1985; Dworkin, 2005; Jessor & Jessor, 1977; Maggs, Almeida, & Galambos, 1995; Silbereisen, Noack, & Reitzle, 1987). Whether they are attempting mastery of new-found abilities or testing unfamiliar limits, taking risks appears to be one way that young people gain self-understanding toward the main developmental tasks of adolescence: forging a unique self and developing autonomy. Although adolescents do take a disproportionate number of risks compared to any other population (Baumrind, 1985; Schulenberg, Maggs, & Hullerman, 1997; Shedler & Block, 1990), most are probably *not* willfully attempting to hurt themselves or others. Their risk-taking may often look foolish and impetuous, but it can also be a rational and purposive process (Furby & Beyth-Marom, 1992; Reyna & Farley, 2006), done in the service of developmental goals. Among these goals are peer acceptance and the exploration of intimate relationships (Lightfoot, 1997), attaining independence (Dworkin, 2005; Ponton, 1997) and personal control (Lyng, 1993), and the claiming of a more mature status so as to bridge the "maturity gap" between adolescents and adult models (Klaas, Bailey, & Bullock, 2004). Just as young children engage in dramatic play to act out roles they observe in older people, so do adolescents. Teenagers who want to be seen and treated as adults often engage in what they behold as adult behaviors such as drinking or smoking. Finally, youth participation in risky activities may simply be a way of exploring and relishing exciting experiences, sensations and "thrills" (Chassin, 1997; Horvath & Zuckerman, 1993; Zuckerman, 1990), relieving boredom, or coping with various stresses.

Yet the taking of certain risks can have grave consequences. Early sexual activity can bring about unwanted pregnancies or sexually transmitted diseases. Truancy and other minor juvenile offenses can lead down a slippery slope to adult criminality. These potential outcomes, if not life-threatening, can drastically alter young men and women's future prospects. As the frequency, intensity, and audacity of risk-taking increase, these behaviors cease to perform positive developmental purposes and become

problematic for the individual adolescent, his or her family, and ultimately, society.

For scholars of human development, many basic theoretical and empirical questions remain as to the etiology and precursors of risky, reckless, unsafe behaviors in adolescence, and why young people seem more predisposed than others to engage in self-destructive or antisocial acts. On these issues, developmental psychologists have emphasized various theoretical positions. Risk-taking has been viewed as a cognitive-developmental phenomenon, a neurobiological inevitability, an individual difference response to stresses and developmental transitions, and a function of ongoing transactions between the adolescent and his or her environment.

Risk-taking as a Cognitive-Developmental Phenomenon

Willingness to take risks has been considered a by-product of the cognitive status of adolescents, specifically, their egocentrism (see Elkind, 1967, 1978). Neo-Piagetian theory has long asserted that the formal and abstract thinking required for ideal decision making is largely absent in early adolescence and cannot be easily taught. Indeed there are some data to show that egocentrism (Greene, Rubin, Walters, & Hale, 1996) and other "limitations" of adolescent cognition (see Hulton's 2001 review) relate to higher instances of risk-taking in this population. From this standpoint, however, maturation through stages offers the only hope for diminishing risk-taking, whereas education on accurate risk perceptions and reasoned analysis about risks and benefits would be of little use until later in development.

An opposing stance is taken by the proponents of information-processing or behavioral decision theories (Fischhoff, 2005; Haines & Moore, 2003; Jacobs & Klaczynski, 2005; Reyna, Lloyd, & Brainerd, 2003). Their alternative view presumes that careful risk-deliberation can actually be taught as a matter of explicit description of options, thorough appreciation of consequences, and the logical rules for combining probabilities with outcomes. As Reyna and Farley's (2006) extensive review of risky decision-making indicates, adolescents are not totally bereft of coherent

decision-making abilities, and under circumscribed conditions, can rationally consider risks and benefits before leaping into action.

A related developmental factor that allegedly instigates much of adolescent risk-taking is the notion that "nothing bad can happen to me", or adolescents' belief in their own invulnerability. However, more recent studies reveal that contrary to this conventional wisdom, adolescents do not perceive themselves to be especially invulnerable (Reyna & Farley, 2006; Steinberg, 2007). If some adolescents seem to exhibit an optimistic bias in that they magnify their immunity from harm or underestimate the risks of particular behaviors, then they are much like adults who also view their own risks as less than those of comparable peers. Moreover, objectively higher-risk groups of adolescents, such as daily smokers and those engaged in unprotected sex, do estimate their risk (for acquiring lung cancer or a sexually transmitted disease, respectively) as higher than lower-risk groups rate themselves (Johnson, McCaul, & Klein, 2002).

If adolescents do not suppose themselves to be invulnerable, then why do they engage in risky behaviors at all? Proponents of the behavioral decision-making approach and of other rational models have argued that perceptions of benefits (e.g., immediate pleasure, solidarity with peers, etc.) loom larger in the adolescent mind and offset perceptions of risks. Congruent with this analysis, Halpern-Felsher, Biehl, Kropp, and Rubinstein (2004) found that teenagers who had tried smoking rated benefits higher (and risks lower) than did those who had never tried smoking. Gilpin and Pierce (2003) also found that smokers were more likely to laud smoking as beneficial. Goldberg, Halpern-Felsher, and Millstein (2002) and Fromme, Katz, and Rivet (1997) reported similar patterns of perceived benefits and risks for experience with alcohol, while Parsons, Halkitis, Bimbi and Borkowski (2000) uncovered the same for sexual activity. One study did find that perceived risk was a better predictor of behavior than perceived benefits, but even that study showed that both were significant (Rolison & Sherman, 2002). Thus, as rational decision-making

theories predict, consideration of the role of benefits is important in explaining adolescent risk-taking: the instant gratification for indulging in these risky activities outweigh the thoughts that adolescents may entertain about the inherent perils involved.

Some young people may also take risks because they feel so extremely vulnerable to a point approaching *hopelessness* (Fischhoff, Parker, De Bruin, Downs, Palmgren, Daws, & Manski, 2000) — they believe there is nothing more to lose nor is there a future to stake. This may be particularly true for adolescents who experience serious personal concerns or real-life challenges such as poverty, unemployment, and chronically violent environments, which are difficult for any individual — adult or minor — to overcome (Nightingale & Fischhoff, 2001; Harris, Duncan & Boisjoly, 2002). On the other hand, adolescents may simply have greater difficulty comprehending the longer-term consequences of their actions because their future is as yet very abstract, remote, and uncertain. Risk-taking is thus expected to decrease when cognitive maturation and real-world experiences help crystallize one's future options, helping the individual better comprehend how risky behavior might cost that future (Gardner & Herman, 1990).

Risk-taking and the Adolescent Brain

The quickened pace of development of new techniques and methodologies in neurophysiology, neuroimaging, and behavioral genetics (for an overview, see Dahl & Spear, 2004; Moffitt, 2005; Steinberg & Morris, 2001) has created an exciting new frontier in the effort to improve explanatory models of risk-taking propensity in adolescence. Developmental neuroscientists (e.g., Luna & Sweeney, 2004; Steinberg, 2007) have more recently contended that taking risks may be an intrinsic part of being a teenager simply because brain maturation is still incomplete by adolescence, with the cerebral structures responsible for impulse control not reaching maturity until adulthood. While the areas of the brain that crave social and emotional rewards become more assertive during puberty (most probably because of major changes

in the dopamine system; see Moffitt, 2005; Steinberg, Dahl, Keating, Kupfer, Masten, & Pine, 2004), the cognitive-control substrates (localized in the prefrontal cortex), which govern more reflective, deliberate, and rational decision-making, gain strength only gradually and over a longer period of time. This competition between the two regulatory systems — the socioemotional versus the cognitive-analytic networks — may explain the heightened risk-taking among adolescents.

Risk-taking as an Individual Response to Adolescent Stresses

For young people who have yet to develop a full repertoire of cognitive, emotional, and social resources, adolescence can be stressful, confusing, and overwhelming. When multiple and simultaneous transitions (i.e., puberty; changes in family, peer relationships, and school environment; development of identity) overtax the ability of the adolescent to cope, a decrease in well-being and a recourse to maladaptive coping behaviors may ensue. Schulenberg et al. (2001) reviewed various perspectives that highlight substance use, in particular, as a teenager's ineffectual way of dealing with various stresses.

Risk-taking, therefore, is seen as one way of regulating the often intense emotions that coincide with the various stresses and transitions of teenage life. According to Caffray and Schneider (2000), adolescents may be emotionally motivated to engage in risky behaviors to enhance pleasant affective states or reduce negative affective states, such as anxiety or depression. They found that adolescents who had had more experience with risky behaviors believed that those behaviors amplified positive affect (e.g., made them feel happy, gave them a "high") and attenuated negative affect (e.g., soothed their tensions). Consistent with this view of risk-taking as an emotion regulator, other studies have found that low self-esteem, depression, and thrill seeking are also correlated with unsafe sex, binge drinking, and reckless driving (e.g., Caffray & Schneider, 2000; Kotchick, Forehand, & Miller, 2001; National Institute of Alcohol Abuse and Alcoholism, 2005; Rolison & Scherman, 2003; Smith, Gerrard, & Gibbons, 1997).

Yet some adolescents are more vulnerable than others. Faced with the same stresses, temptations, or social pressures in a typical adolescent environment, young persons' responses will still depend in part on their individual personality characteristics and psychological needs (Ball, 1995; Greene, Krcmar, Rubin, Walters, & Hale, 1998, as cited in Krcmar & Greene, 2000). Cooper, Agocha, and Sheldon (2000) found that adolescents with negative affect and avoidant personalities were more likely to engage in substance use and other risky behaviors, presumably to assuage their adverse emotions (see also Chassin, Pillow, Curran, Molina, & Barrera, 1993).

Among individual differences, sensation seeking, defined by Zuckerman (1979) as "a need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (p. 11), has been one of the more extensively studied and strongly linked to risk-taking (Brown, DiClemente, & Park, 1992; Crawford, Pentz, Chou, Li, & Dwyer, 2003; Horvath & Zuckerman, 1993; Zuckerman, 1994). For instance, Rolison and Scherman (2002), using the Risk Involvement and Perception Scales or RIPS (consisting of 19 risk behaviors that include smoking cigarettes, having unprotected sex, drinking alcohol, and using illegal drugs), found that sensation seeking among adolescents was more strongly correlated with frequency of participation in risky behaviors than perceptions of risks or benefits.

Risk-taking as a Product of Transactions Between the Individual and the External Environment

The bioecological perspective (Bronfenbrenner & Morris, 1998) provides a multilayered conception of the complex social environment that provides norms, models, opportunities, constraints, reinforcements, and punishments for adolescent involvement in risky behaviors. An ecological theory-inspired analysis of premarital sexual activity amongst teenage girls, for example, will need to take into account these adolescents' most proximal contexts, or the *microsystem*, such as family (e.g., parenting

practices) and peers (e.g., peer "pressures"), as well as their outlying social spheres or *exosystems*. Media (e.g., portrayals of sexual mores and behaviors in the movies) and community (e.g., lack or ease of access by young unmarried women to reproductive health care information and facilities) are probably the most traditionally researched exosystemic influences on adolescent sexual decision-making. Finally, even the most distal social contexts such as culture, economics, and politics (i.e., *macrosystems*) are theorized to have their own powerful sway on adolescent behaviors; for instance, rates of contraceptive use among female youth are known to vary significantly by race and religious affiliation (Hulton, 2001). The model emphasizes, moreover, that the individual likewise actively influences his or her environment rather than being merely passively shaped by it. From experiences with parents and schoolmates, to cultural practices and government policies, the social context interacts with the person's individual characteristics and choices in a bidirectional fashion. Engaging in high risk behavior can thus be seen as a result of some malfunction in the individual-environment transaction, one that may have persisted across time (e.g., dysfunctional relationships with parents from childhood; school failure and peer rejection) and prevented the adolescent from organizing his or her world adaptively (Sameroff & Chandler, 1975).

Consistent with the foregoing is a more specific analysis of the environment that considers the match or "goodness of fit" between the individual's developmental needs and the capacity of the environment to meet them. According to the *theory of stage-environment fit*, adolescents thrive — experience positive outcomes and increased well-being — when their family, school, peer, and community environments support their needs for autonomy, belongingness, and identity (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & MacIver, 1993; Schulenberg et al., 2001). For example, if a growing desire for independence and self-expression is thwarted by an authoritarian or controlling school environment, the teenager may seek other, less adaptive

opportunities to fulfill or compensate for the unmet need (e.g., commiting antisocial behaviors).

Finally, the learned behavior approach asserts that risk-taking is, in part, a modeled phenomenon. Several related theories such as social learning theory and problem behavior theory (Jessor, 1984) have attempted to link adolescents' exposure to modeled behaviors in the environment (e.g., glamorized TV advertisements of tobacco and alcohol use) with subsequent learning or performance of those behaviors. Given that adolescents are in a stage of "anticipatory socialization" (Modell & Goodman, 1990) and are looking to adult models to guide them in "how to be" adult, they may be particularly receptive to such messages explicitly or implicitly transmitted by models they emulate in their environment.

To summarize, empirical evidence confirms the common observation that for many young people, trying out novel experiences, including ones that may put them in harm's way, is what adolescence is all about. Robust developmental trends exist to show that most substance use, alcohol use, and sexual activity debut at adolescence and peak during emerging adulthood (Baumrind, 1985; Johnston, O'Malley, & Bachman, 2003; Schulenberg, Maggs, & Hullerman, 1997; Shedler & Block, 1990; Reyna & Farley, 2006). In explaining adolescent risk-taking, several theoretical points of view have emerged. Cognitive elements (i.e., adolescent risk perception and decision-making), biological factors (i.e., the disjunction in the development of the emotional and executive functions of the brain), individual differences (i.e., responses to stress, affective motivations, sensation seeking tendency), and person-environment transactions, have been explored within a developmental context in attempts to understand why adolescents take more risks than adults do.

The Objectives of This Paper

In this paper, we first summarize the documented data on the incidence of risky behaviors in Filipino adolescents; secondly, we consider the variables associated with these risky behaviors

as reported in the local literature of the last two and a half decades. Third, we analyze this literature and propose mechanisms that specify important variables for conceptualizing risk-taking in adolescence, concluding with implications for further research on Filipino adolescent risk-taking in particular. A developmental perspective will frame our analysis, as previously emphasized.

Scope and Definitions

We adopt Lightfoot's definition of risk-taking behaviors as "volitional, purposive, goal-oriented [but nonetheless] carry potential for harm" (1997, p. 22). There are quite a number of behaviors that are potentially hazardous to the health of adolescents, and six categories of risky activities have been found to account for about 70% of adolescent death and illness (in the United States; MHAP, 2002). These include 1) *behaviors that result in unintentional and intentional injury* (including violence and suicidal behaviors); 2) *alcohol and other drug abuse;* 3) *tobacco use;* 4) *sexual behaviors* that result in unintended pregnancy, HIV infection and other sexually transmitted diseases; 5) *unhealthy dietary behaviours;* and 6) *inadequate physical activity.* This review will limit itself to only three types of risky behaviors among Filipino youth: substance use involving tobacco, alcohol and illegal drugs; premarital sexual activity; and juvenile delinquency. Sex, drugs and alcohol, and antisocial acts are notoriously associated with teenagers, and indeed, nearly all of the available local and large-scale data have focused on one or more of these three behaviors. Moreover, the seriousness of their individual and social consequences warrant their emphasis. Where data are available, we also include reports on adolescents' attitudes towards these risky behaviors (e.g., how acceptable it is to engage in such activities; whether or not it is "wrong"), as these bear potential implications for the probability of youth taking risks.

Philippine jurisprudence refers to a juvenile delinquent as one who is under 18 years of age (but not younger than 9 years of age) at the time of the commission of an act that is defined

and punished as a crime or offense under the law (Rules on Juveniles in Conflict with the Law, Section 2 & 4a; Alampay, 2005). In psychology, delinquency falls under the broader rubric of *antisocial behavior*, which refers to a continuum of behaviors — from vandalism, fighting, to theft — which transgresses social norms in ways that could result in serious disciplinary (e.g., school suspension) or adjudicatory (i.e., legal conviction) consequences (Lorion, Tolan, & Wahler, 1987). However, save for one paper with a high school sample (i.e., Gutierrez & Shoemaker, 2008), much of the local data do not capture the range of behaviors in this continuum, but have limited their scope to the youth who are already held or detained (i.e., in institutions or in jail), or convicted for a legal offense. Much of our analysis is therefore limited to this population. Consistent with a children's rights perspective, we refer to the adolescent as a *juvenile or child in conflict with the law* (CICL), as it avoids the assignation of the negative label "delinquent" on the person.

Sexual activity in this paper pertains primarily to intercourse, consistent with the available data. We emphasize that the use of the term "premarital sex" is only by convention or for consistency with much of the local literature that uses this label. The risk of early sexual activity among adolescents comes not so much from it being engaged in prior to marriage, but because of its potentially negative health and developmental outcomes, such as early, unplanned pregnancy and sexually transmitted diseases.

METHOD

The studies reviewed in this paper are part of a larger project where we review the Filipino adolescent literature in the previous two decades (see Alampay, De la Cruz, & Liwag, 2003). The general parameters we used in selecting studies to be included in that review likewise apply to the studies we report and analyze here. First, the study should have been completed or published after 1980. This is the time period of interest as the last extensive

review of local child psychology research surveyed adolescent studies until 1980 (Ventura, 1981). Second, the study should have involved Filipino individuals who are between the ages of 11 to 21 years, conforming to the general view of adolescence as encompassing the second decade of life.

With the assistance of graduate research assistants, we obtained the relevant published and unpublished studies in the fields of Psychology, Sociology, Anthropology, Family Studies, Education, Gender/Women's Studies, Population and Demography, Social Work, Economics, Political Science, Labor Studies, and Mass Communication. In the case of published research, these were taken from local, foreign, Asia-based, and university-based books and scholarly journals. Doctoral dissertations and Masteral theses in the aforementioned disciplines were examined from the University of the Philippines, Ateneo de Manila University, De La Salle University, University of Sto. Tomas, and Miriam College.

In addition to academic material, we also collated technical reports and other databases from government agencies (e.g., National Youth Commission), youth-oriented organizations (e.g., Foundation for Adolescent Development), and research institutions (e.g., U.P. Center for Integrative and Development Studies, Social Weather Station). For a more detailed description of the source material and coding/documentation procedures, refer to Alampay, De la Cruz, and Liwag (2003).

A total of 41 studies on Filipino adolescent substance use, sexual behaviors, and juvenile delinquency were reviewed for this paper, with several reporting on more than one of the risky behaviors. In reporting the *prevalence* of these risk-taking behaviors, we relied mostly on several large-scale studies that surveyed Filipino youth in various parts of the country (e.g., Young Adult Fertility and Sexuality Survey [YAFS] 2 in 1994 and YAFS 3 in 2003; the McCann-Erikson Youth Study 1993 and 2002; the Jesuit Youth Study in 2001). Several of the papers included in our corpus likewise drew from and analyzed these same large-scale datasets.

This literature can be primarily characterized as descriptive and based on survey data. Studies that considered the variables related to risk-taking conducted basic frequency tabulations and correlational analyses, and, more rarely, qualitative analyses of interviews and focus group discussions. There were no longitudinal studies; all data were gathered at a single point in time (i.e., cross-sectional), thus precluding any investigation of how the prevalence and patterns of risk-taking behavior vary over time. At best, comparisons were made across adolescents' age; datasets obtained in two different time periods were also compared (for instance, data from the YAFS 2 and YAFS 3). Given that these comparisons involved different samples, however, they are only rough approximations of actual change over time.

The literature varied extensively in the age range of its sample: for instance, YAFS 3 (2002) sampled youth between 15-27 years old; the nationwide Jesuit Youth Study of 2001 surveyed 7-21-year-olds; the Social Weather Station survey on the correlates of premarital sexual experience (Sandoval, 2000) included respondents who were 15-30 years of age. This variability also inhibited us from making any direct comparisons across datasets because the basis of the reported incidence of the risky behavior (in frequencies or percentages) are different in each case. A more substantive evaluation of the literature reviewed in this paper is presented in the discussion of the results.

RESULTS

Incidence of Risky Behaviors

Findings on the incidence rates of substance use (e.g., smoking, drinking and taking illegal drugs), sexual activity, and juvenile delinquency among Filipino youth are summarized in this section.

Substance Use and Abuse

Smoking. In one of the earliest published local studies on adolescent tobacco use (Mejillano, 1985), 1,508 Metro Manila

students were surveyed, and 6 out of every 100 respondents said they were "smokers". Moreover, an additional 27% reported that they were "interested in smoking" and have tried it at least once. Almost a decade later, 22% of the sampled youth in YAFS 2 (Raymundo, Xenos, & Domingo, 1999) identified themselves as smokers (40% among the males; 4% among the females). Similarly, the Social Weather Station (SWS) Situation of Filipino Youth Survey (1996) showed that 20% of a nationwide sample of 15-17 year-olds smoke. In Gutierrez and Shoemaker's 1998 data, 39% of 633 Metro Manila high school students have ever smoked (Gutierrez & Shoemaker, 2008).

Smoking rates have continued to increase in the present decade. In the Jesuit Youth Study of 2001, nearly half (42%) of the 7-21 year-old sample reported smoking, and the latest (e.g., 2002) YAFS 3 data (Cruz & Berja, 2004) revealed that among adolescents ages 15-24 years old, 47% have tried smoking at least once. Of those who have tried smoking, 45% continue to smoke, regularly or irregularly. One-fifth (21%) of the same teenagers surveyed said that they are current smokers (37% of males; 6% of females). These teenagers started smoking at an average age of 15.8 years. However, when a younger sample of 2,932 students between 10 to 20 years old were surveyed by the Philippine Chapter of the American College of Chest Physicians (2002), it was found that public school students started smoking at the age of 13.6 years while private school students started smoking at the even younger age of 12.3 years.

Drinking. It is widely believed that more Filipino youth drink than smoke, and national survey data appear to support this observation. Juvenile drinking rates of 37% (YAFS 2, in Raymundo, Xenos, & Domingo, 1999), 46% (SWS, 1996), 43% (Gutierrez & Shoemaker, 2008), and 56% (Jesuit Youth Survey, 2001) have been reported. In the KAP Survey of 2001, 23% of youth between 12-24 years old said they drink with friends; drinking is the *fourth* most frequent activity engaged in with friends (next to "hanging out at home", malling, and sports).

In fact, YAFS 3 (Cruz & Berja, 2004) found that 70% of teenagers have tried drinking at least once, and of those who

have tried drinking, 60% continue to do so on a regular or irregular basis. The mean age that these adolescents started drinking is 15.9 years, a few months before they turn 16. About half or 42% of the YAFS 3 sample considered themselves "current drinkers" (61% of males; 24% of females).

Dangerous drugs. Turning now to the use of illegal substances, according to the Dangerous Drugs Board or DDB, in 2003, there were 3.4 million drug-users in the Philippines, 1.8 million of whom are young persons between the ages of 15-27 years old. One percent of the 1994 YAFS 2 respondents acknowledged current drug use; the rate was up to 3% in the 2002 YAFS 3 (5% among male youth; .5% among female youth; see Cruz & Berja, 2004).

The Dangerous Drugs Board (2003) has reported further that adolescents aged 19 years and younger make up 18.5% of total patients in rehabilitation centers nationwide in 1999, with the figure rising to 22% in 2001. The three most readily abused drugs are *shabu*, marijuana, and cough drops with alcohol (National Youth Commission, 1998).

Drug experimentation is relatively more common, compared to steady drug use, or even drug addiction. SWS (1996) reported that 7% of their 15-30-year-old respondents have sampled prohibited substances at least once (an even more worrisome statistic is the 6% who admitted that they have pushed or sold drugs to others). Among the younger Jesuit Youth Survey (2001) participants (7-21 years old), 13% said they have tried dangerous drugs (18% for the older 19-21 year-old subsample). YAFS 3 (Cruz & Berja, 2004) also found that among adolescents 15-24 years old, 11% have experimented with illegal drugs at least once. Among these drug "experimenters", 25% continue to use them in either regular or irregular fashion. Differentiating between "harder" drugs (e.g., cocaine) and "softer" drugs (e.g., cough syrup, marijuana) in their 1998 data, Gutierrez and Shoemaker (2008) report a 2% prevalence in use of the former, and 6% in the latter.

Multiple substance use. Smoking, drinking, and using banned substances are not isolated adolescent activities. These substance-related risky behaviors are often interlinked. YAFS 2 (1994) found that a fifth of adolescents are *simultaneously* involved

in at least two of these three behaviors, i.e., 18% smoke *and* drink; additionally, 1.2% smoke, drink, *and* take drugs. Similar rates of multiple risk-taking were reported in YAFS 3 (Cruz & Berja, 2004) — 16% of teenagers use both cigarettes and alcohol; 2% do all three — smoke, drink, and take drugs. The percentages of youth who drink and use drugs are significantly higher among those who smoke (90% and 23%, respectively) than those who do not smoke (only 48% drink and 2% use drugs; Raymundo & Cruz, 2003).

These multiple incidence rates are quite consistent across contemporaneous studies, even as majority of Filipino youth in one survey (National Filipino Catholic Youth Survey, 2002) identified *addiction* in its various forms as the "most common problem in society". More specifically, 74% of the 13-39 year-old participants in the survey cited smoking and drinking as problematic to society while 51% cited drug use as such (56% cited gambling as another common problem). In the Jesuit Youth Survey (2001), a clear majority (76%) also deemed the use of "forbidden" drugs to be clearly wrong; however, only 58% agreed that smoking cigarettes is wrong. These same surveyed teenagers were less certain that "getting drunk at a party" is wrong; only half of the sample was willing to concede that this behavior is improper or inappropriate. The McCann-Erickson Youth Study (2000) also pointed to the "widening of the gray area between perceived right and wrong" among young Filipinos; in 2000 only 52% of adolescents (13-21 years old) thought that getting drunk is wrong (down from 64% in 1992), while 84% judged the use of forbidden drugs as wrong (down from 90% in 1992).

Sexual Activity

The YAFS 3 2002 field survey (Natividad & Marquez, 2004) reported that about one-fourth or 23% of adolescents 15-24 years old have experienced premarital sex — 31% among males, 16% among females. In addition, 3 out of every 100 Filipino adolescents say they have paid for sex.

The Jesuit Youth Survey of 2001 looked into a much younger age group (7-21 year-olds) but essentially found the same results: 22% of the national sample said they were sexually experienced (in the oldest subsample of 19-21 year-olds, 33% said that they "have had sex"). To quote one college-student respondent, "*Sa klase namin*, 35 *kami*, 4 *na lang ang* virgin" (In our class, there are 35 of us, only 4 are still virgins). More than half (58%) of this sample said they did not believe that premarital sex was acceptable; however, the rest (41%) said they were "open to it".

The KAP Adolescent Reproductive Health Survey of 2001 obtained data on the age of sexual initiation and found that for 11% of adolescents, their first sexual intercourse occurred before the age of 13 (sometime in the late elementary grades), for 22%, it took place when they were between 13-15 years old (sometime in high school), while for the biggest group, 41%, it occurred between the ages of 16 to 18 years old (sometime between high school and college). POPCOM (2003), citing some reanalysis of YAFS 2 and 3 data, has likewise highlighted the fact that in 1994 only 2% of Filipino adolescents have had sex before the age of 15; in 2002, 16% were already sexually active at the same age. This is a statistically significant and striking increase.

YAFS 2 and 3 researchers (see Natividad & Marquez, 2004) also noted (with some concern) that between their two national field surveys in 1994 and 2002, the overall rates of premarital sex among Filipino adolescents jumped from 18% to 23%. Prevalence rates soared noticeably for females, from 10% to 15% (which actually represents a 55% change), while the upsurge was more modest for males, from 26% to 31% (a 20% change). Strikingly, during the same timeframe, avowed *attitudes* of the youth towards premarital sex also became more tolerant, although comparative data was available only for male adolescents, who demonstrated the classic "double-standard" view. In 1994, 41% approved of their male peers engaging in sex before marriage, in 2002, 46% similarly approved. Fewer endorsed the same behavior for their female peers — only 19% in 1994 but a more sizeable 31% eight years later. In 2002, amongst *all* adolescents surveyed (males and females combined), about one in three (34%) gave

the nod to premarital sex activity for young men, while only one in five (22%) favored the idea of premarital sex activity for young women (Natividad & Marquez, 2004).

Finally, substance use and premarital sexual activity were also found to occur as a cluster of potentially harmful behaviors; young people who smoke, drink, and use drugs are more likely to be engaged in premarital sex (POPCOM, 2003; citing YAFS 2 & 3 data).

Juvenile Delinquency

Reliable incidence statistics for juvenile delinquency are quite meager. Gutierrez and Shoemaker (2008) do report on a wider range of antisocial behaviors in their 1998 study involving 12-17-year-olds in public and private high schools in Metro Manila. In terms of status "offenses", cheating on tests (63%), skipping school (42%), lying about one's age (29%), and sneaking out of the house without parents' knowledge (23%) are highest-occurring in incidence (percentages refer to number of respondents who indicate they have done the behavior). A relatively frequent property offense is vandalism (42%); less so is petty theft (15%), usually of small value and from family members. In terms of violent behaviors, 39% of respondents have hit or threatened to hit other students; 28% have thrown objects at cars, buildings, or people; 21% have engaged in a group fight; and 21% have shouted profanities at adults (teachers and/or parents). All in all, these figures give a picture of a fair number of high school students behaving "badly"; more serious offenses such as major theft or assault are rare.

More of the local literature has focused on youth who have already been detained or convicted for engaging in illegal activities (i.e., CICL). According to the Department of Social Welfare and Development (DSWD), it served 12,878 youth offenders from 1990 to 1992. But from 1994 to 1997, the number more than doubled to 30,377. More recently, the DSWD has raised alarms about the swelling numbers of Filipino children in conflict with the law (CICLs), which totaled to 8,600 nationwide in 2005 alone (cited

by Alampay, 2006). Regional data is even more scarce, although Etemadi (2006) estimates on the basis of police records in Cebu that there were 6,000 CICLS there (between the ages of 8 to 17 years old) from 2002-2005.

In 1998, the National Youth Commission reported that among the most common juvenile offenses committed by Filipino youth are vagrancy, crimes against property (i.e., theft, robbery), and illegal use of drugs (National Youth Commission, 1998). Likewise, both the DSWD and the Philippine National Police (PNP) in 2004 ranked the most frequently reported cases of delinquency, with theft as the most common crime, followed by robbery, rape, use of volatile substances, homicide and murder. In Cebu (Etemadi, 2006), crimes against property still ranked the highest (68%), followed by violations of the Dangerous Drugs Law (12%). Rugby users constituted 90% of CICLS arrested for illegal use of substances.

It is worth noting that only 15% of documented cases in the PNP are repeat offenses, and that 8 in 10 Filipino CICL commit only one offense in their lifetime. This suggests the transitory nature of many serious delinquent adolescent behaviors (Alampay, 2005).

Factors Associated with Risky Behaviors

We uncovered six categories of factors that have been associated in the local literature with Filipino adolescent risky behaviors. These are: 1) individual characteristics of the adolescent; 2) family factors; 3) peer factors; 4) the school context; 5) mass media consumption; and 6) psychological variables.

Adolescent Sociodemographic Characteristics

Age. Foremost among the individual variables correlated with adolescent risky behaviors is *age*, which has been linked, for one, to significant increases in smoking (YAFS 2, 1994; SWS, 1996; Jesuit Youth Study, 2001; YAFS 3, 2002). In the latest YAFS survey (2002), for instance, 57% of males between the ages of 15-19 said they smoked, amongst 20-24 year-olds the figure had increased to 77%. The change is less dramatic for females

but an increase is also observed — from 26% to 36% — for the same age comparison groups as males.

The number of adolescents reporting alcohol use also multiplies steadily by age (YAFS 2, 1994; SWS, 1996; Jesuit Youth Study, 2001; YAFS 3, 2002). The age-related changes were particularly salient in the YAFS 3 data: for males, from 73% amongst 15-19 year-olds to 94% among 20-24 year-olds; for females, from 52% to 71% across the same two age groups (Cruz & Berja, 2004).

The findings in YAFS 3 regarding illegal drug use (Cruz & Berja, 2004) demonstrated similar greater prevalences by age, 11% for younger males spiking to 34% in the older males. The corresponding increase for females was slight, from 2% to 5% between the younger and older girls. The same proliferation in drug-taking by age had been in evidence in earlier surveys (YAFS 2, 1994; Jesuit Youth Study, 2001).

The incidence of premarital sexual activity also correlated systematically with age, as reported in YAFS 3 (Natividad & Marquez, 2004). In the 15-19 age group, 12% reported ever having had sex before marriage; in the 20-24 age group, the overall percentage had climbed to 40%. This is consonant with Sandoval's (2000), and Cruz, Laguna, and Raymundo's (2002) earlier reports that premarital sex is more likely among young people who have reached the age of 20.

Data from focal studies on CICL in the 1990s indicate that youth aged 14 to 17 comprise the majority of CICL, with the incidence of delinquency and police apprehension peaking at ages 16 and 17 (Philippine Action for Youth Offenders [PAYO], 1995; Bureau of Child and Youth Welfare-NAPOLCOM, 1993; Adhikain Para sa Karapatang Pambata [AKAP], 1998; all cited in Alampay, 2005). On the other hand, in data obtained by Etemadi (2006) on the more than 6,000 CICLs in Cebu, 43% were between the ages of 12-14 years, and 39% were between the ages of 15-17 years. Sixteen percent were between 9-11 years, and only about 2% were very young (8 years old and below).

Gender. All available survey data consistently show that Filipino males engage in all three risky substance-use behaviors (e.g., smoking, drinking, and drug use) in significantly larger numbers

than their female counterparts. According to YAFS 2 (1994), SWS (1996), and the Jesuit Youth Study (2001), for instance, there are more adolescent male smokers, drinkers, and drug users than female ones. The Dangerous Drugs Board estimated in 1992 that the ratio of male to female drug users was 10:1 (DDB, 1999); in 1998, the ratio was 12:1 (National Youth Commission, 1998).

The most recent YAFS 3 data tell the same gender story: smoking rates were 37% for males versus only 6% for females (Cruz & Berja, 2004). The corresponding proportions for drinking were 61% for males versus 24% for females; for drug use, it was 5% for males versus less than 1 percent (.6%) for females.

These gender differentials are seen not only in terms of prevalence, but also in the onset of risk-taking in the realm of dangerous substances. Smoking begins at age 15.7 years for boys as against 16.1 years for girls, according to the McCann Erickson Youth Study of 2000. Boys also start drinking earlier on average (at 15.7 years) than girls (at 16.2 years) (McCann Erickson Youth Study, 2000). In a reanalysis of the YAFS 2 data (East-West Center Population and Health Studies, 2001), boys were also found to initiate substance use at earlier ages than girls; by age 15, 12%, 11%, and 1% of male adolescents smoke, drink, and use drugs, respectively. Among female adolescents, only 3% smoke, 4% drink, and 1% use drugs at age 20.

In the YAFS 3 data on sexual activity in the adolescent population, sharp gender differences were found as well (Natividad & Marquez, 2004). In the two age groups surveyed, there were far more sexually experienced male than female youth (18% versus 6% amongst 15-19 year-olds; 54% versus 29% amongst 20-24 year-olds). Moreoever, males are more likely to engage in high-risk sexual behaviors. The YAFS 2 and YAFS 3 indicate that *only* males participate in commercial sex (e.g., pay for sex). As reported by the Foundation for Adolescent Development (FAD) in 1998, boys, to a much higher extent than girls, are experimenting with and experiencing sexual activities as early as 10-14 years of age. And not surprisingly, more males than females also engage in premarital sex (Sandoval, 2000).

Children in conflict with the law are predominantly male. Based on the most comprehensive studies to date on CICL (PAYO, 1995; BCYW-NAPOLCOM, 1993; AKAP, 1998; all cited in Alampay, 2005), roughly between 85 to 95 percent of CICL are male. Etemadi's data (2006) showed that male youth who come into contact with the juvenile justice system in Cebu heavily outnumber female youth (76% of CICLs in this area are males, 24% females). The trends are similar for repeat offenders who constituted 6% of the population of CICLs; in this "recidivist" group, 90% are male children (25% were below the age of 11 years) and adolescents. Even in terms of more benign deviant behaviors (e.g., cheating, truancy, vandalism, petty theft, and fighting with peers), males outnumber females by a ratio of 4 to 3 (Gutierrez & Shoemaker, 2008).

Despite the male dominance in risk-taking, risky behaviors among female adolescents are on the upswing. YAFS 3 reported that the frequencies of teenage girls who have experimented at least once with smoking and drinking have leapfrogged within the 6-year period from 1994 to 2002 (17% to 30% for smoking; 37% to 60% for drinking) although the prevalence of female drug use (1% to 3%) has remained flat (Cruz & Berja, 2004). This is also seen in premarital sexual activity, the rates of which increased from 10% to 15% among Filipino women from YAFS 2 to YAFS 3. This represents a 55% change in the span of 8 years (Natividad & Marquez, 2004). Also thought-provoking are findings that show high-income females reporting higher incidences of deviant behavior, even relative to their high-income male counterparts (Gutierrez & Shoemaker, 2008).

Socioeconomic status. We found higher drug use (YAFS 2, 1994; YAFS 3, 2002), juvenile delinquency (Etemadi, 2006; and PAYO, 1995, BCYW-NAPOLCOM, 1993, AKAP, 1998, cited in Alampay, 2005), and sexual activity (Abad, Carreon, Mahinay, Tolop, & Weber, 1998; Santos-Ocampo, Reyes, Treichler, & Madrid, 1988) among poorer adolescents.

Gutierrez and Shoemaker (2008) concur, in that lower class males self-reported more vandalism and violent, overt forms of

antisocial behavior. Interestingly, however, they found that upper class boys reported slightly higher prevalence of cigarette and alcohol use, and no differences with low and middle-class boys on status offenses. Averaging across these different classes of antisocial behavior, they found no significant differences in risk-taking across low, middle, and upper income male adolescents. In a clear departure from the literature, however, the authors found significantly higher rates of delinquent behavior for upper-class female youth, in all categories (status offenses and substance use, overt and covert property offenses, violent behavior) except for vandalism.

Educational attainment. This factor had variable "effects". Smoking appeared to be linked to lower education: in YAFS 3, 33% of elementary graduates smoked, while the comparative proportions were 20% for high school graduates and 18% for college graduates (Cruz & Berja, 2004); roughly similar percentages were previously obtained in YAFS 2 (1994). In contrast, alcohol use seemed to be associated with higher education (YAFS 2, 1994; YAFS 3, 2002), although this relationship is "not very systematic", according to the researchers. Also, any connections between educational attainment and drug use and early sexual activity were hazy at best and uninterpretable, at least in the last two YAFS surveys. Sandoval (2000) reports, however, that youth with higher levels of educational attainment were more likely to have experienced sex; they also have more permissive attitudes about premarital sexual activity (Dayag-Laylo & Belmonte-Montelibano, 1999).

On the other hand, Filipino children and adolescents with scant educational attainment seem to be over-represented among the youthful offenders processed through the country's juvenile justice system. According to the focal studies, majority of CICL are still in the elementary level (Alampay, 2005).

Educational status. Being out-of-school intensifies all types of substance use — cigarettes (YAFS 3, 2002), alcohol (YAFS 3, 2002), and drugs (YAFS 2, 1994; YAFS 3, 2002). The stark statistics indicate, for instance, that the rate of experimentation with prohibited drugs is more than double for adolescents who are not

in school compared to their in-school peers (15% versus 7%, respectively). Premarital sexual activity is *thrice more common* among adolescents who are not in school compared to those currently enrolled (35% versus 11%, respectively).

Some studies on juvenile delinquency also practically equate the phenomenon with being an out-of-school youth — according to both AKAP (1998) and UP CIDS-PST (2003) data, majority of CICL were either out-of school when they were arrested, or had already dropped out for more than two years.

Family Factors

Family structure. In terms of *family living arrangements,* teenagers living away from home — for instance, in dorms or in the streets, are more likely to smoke and drink (especially if they are males), and do drugs (YAFS 2, in Cruz, Laguna, & Raymundo, 2002). Adolescents who are *not* raised in a two-parent family also engage, with greater likelihood, in substance-related risky behaviors. For instance, adolescents raised by father only or by "others" were found more likely to have ever used drugs, according to Cruz, Laguna, and Raymundo (2002) in their analysis of the YAFS 2 (1994) data.

An index of *family connectedness* was constructed in another reanalysis of the YAFS 2 data (East-West Center Population and Health Studies, 2001) on the basis of the adolescents' standing on the two variables "live away from home" and "not raised by two-parent family". Adolescents with more tenuous connections to their families were found to be more likely than other young people to initiate at least one of the three substance-related risk behaviors. The family "connectedness" effect was strongest for female drug use: girls who were *not* raised by two parents are more than twice likely to begin using drugs at ages 15-19 years old than those who grew-up in two-parent homes.

Santos-Ocampo et al. (1988) report higher incidences of premarital sex for youth in single-parent homes. Those who live away from parents also tend to have more approving attitudes towards premarital sex (Zablan, n.d.).

Likewise, majority of Filipino children and adolescents who come into conflict with the law are either not living with their parents or reside in single-parent homes (about 78% of them, according to Philippine Action for Youth Offenders, 1995; about 63%, according to National Council for Social Development, 1994). As early as 1983, Carlota already found that significantly more female juvenile delinquents came from "broken" homes and were less attached to their families. In Carandang's (1994) words, the life of the CICL is marked by parental loss, either through separation, death, or abandonment. Having to work in another location is another reason cited for why youth do not live with one or both parents.

Parental factors. Adolescents' *perception of the stability of their parents' relationship* was also found to be an important correlate of potentially self-destructive behaviors amongst young people. The less stability is perceived by teenage children in their parents' marriage, the greater the likelihood of adolescent substance abuse and premarital sex (YAFS 2, in Cruz, Laguna, & Raymundo, 2002). Similarly, perceptions of stability of parents' marriage are negatively related to positive or permissive attitudes about premarital sex (Zablan, n.d.).

Perceptions of parental controls also matter. Adolescents who rated their fathers as "very strict" were less likely to smoke, drink, do drugs (YAFS 2, in Cruz, Laguna, & Raymundo, 2002). In this latter analysis, those adolescents who perceived their mothers as "very strict" were also discovered to be least likely to smoke. On the other hand, youth who did not value parental reactions very highly tended to be more permissive about sexual activity (Teotico, 2001).

A related factor is *perceived parental approval.* Young people who report that their parents disapprove of smoking and drinking are much less likely to smoke and drink (YAFS 2, 1994). Quite conspicuous was the observation that female drinkers were more likely to have a mother who approves of drinking (YAFS 2, 1994).

Finally, there is also *parental and sibling modeling.* Not only do teenage smokers assert that their parents approve of smoking

(YAFS 2, 1994), one study (Mejillano, 1985) actually showed that 69% of young smokers have fathers who smoke and 44% have brothers who smoke. While evidence of modeling is less direct in the case of sexual activity, Cruz, Laguna, and Raymundo (2002) did find that discussions of sex with siblings are associated with higher levels of premarital sex. Finally, case records compiled by the NCSD (1994) reveal that 3 out of 5 CICL were influenced by friends and relatives to commit delinquent acts. Among street children, the youth commit their first offenses in the company of relatives and peers in 85% of the cases.

Family dynamics. Only a few aspects of *family relationships* have been intensively studied in relation to the adolescent propensity to take risks. For instance, adolescents who "feel misunderstood" by parents and have no family roles were found to be more sexually active (Abad et al., 1998).

Lack of attachment to parents has likewise been associated with juvenile delinquency (Shoemaker, 1992; Carlota, 1983). Local studies have consistently shown that CICL belong to families characterized by conflict, maltreatment, neglect, and disorganization. The UP CIDS-PST (2003) and Save the Children (2004) reports, and Carandang's (1994) in-depth cases studies, document CICL's personal experiences of familial neglect, abuse, and conflict, often citing these as reasons for running away, depending on peers, living in the streets, or committing antisocial acts. In a study of street adolescents in Davao City (many of whom commit or are at high risk for committing delinquent acts), 40% of participants describe their families as conflictual and disunited. More disturbing, 80% said they experienced violence at the hands of their parents, such as harsh physical, verbal, and sexual abuse (TAMBAYAN, 2003).

Family religious practices. Less smoking, drinking, drugs, and premarital sex were found among teenagers who reported that their family "prays together" (YAFS 2 data, reanalyzed in Cruz, Laguna, & Raymundo, 2002). Females who are "not required by their family to hear Mass" were more likely to smoke and drink. But interestingly, males who are required to hear Mass were

nine times more likely to drink than males whose parents are more lenient in their religious practices! (YAFS 2, 1994).

Peer Variables

Peer context. Some studies have investigated the *peer context* wherein adolescent risk behaviors takes place; for instance, the fact that 41% of juvenile delinquents belong to "gangs" (PAYO, 1995) and the aforementioned finding that 84% of juveniles' first offenses are committed in the company of peers (and relatives). However, other reports counter that gang membership is not a common experience among youth offenders. Among street children, only about 18% were gang members; among non-street youth, only 5% were members (NCSD, 1994). The BCYW-NAPOLCOM (1993) report also indicated that 60% of CICL were not affiliated with any gang before detainment.

More significant than gang membership are the actual experiences of risk-taking youth with their peers. Juvenile delinquents were found to have strong peer attachments. Interviews with street youth in Davao city and inner world case studies of CICL reveal that the peer group is considered by the child as his or her alternative family, counting among the most significant persons in the child's life. Where familial nurturance and social acceptance are typically lacking, the peer group provides the young person with companionship, identity, emotional and social support, help with basic needs, and protection from thugs, law enforcers, and other gangs. It is the case, however, that it is with the peer group that both delinquent and non-delinquent activities are engaged in. Among these are "gimmicks", money-earning activities (e.g., car watching), petty and more serious theft, drug and alcohol use, riots with rival gangs, and sexual activities (TAMBAYAN, 2003; Carandang, 1994). While such activities are valued by the youth for strengthening peer bonds and helping to cope with hardships, it also places them at greater risk for committing more serious antisocial acts (Alampay, 2005).

Peer pressure is also among the most common explanation given for why adolescents often act in ways that seem to go

against their best interests or actually put their health and well-being at peril. The KAP survey of 2001 did find that among the top "peer pressure situations" that the youth say they have encountered are: cutting classes, 53%; smoking, 39%; drinking, 46%; and taking drugs, 9%. Interestingly, premarital sex is not among these peer pressure situations. However, premarital sex is more likely when teens have friends who are sexually active (Santos-Ocampo et al., 1988; Abad et al., 1998).

YAFS 2 (1994) found that the sheer frequency of *participation in social activities with peers* was in itself associated with greater involvement in risky activities. For instance more likely to smoke and drink are adolescents who enjoy "frequent socials", "drinking", "going to parties/discos/bars", and "watching movies" — with friends. Also more likely to smoke and drink are teens who do *not* enjoy "studying and reading with friends" and "playing sports with friends" (Cruz, Laguna, & Raymundo, 2002).

Both substance abuse and sex-related risks were more widespread among teenagers who frequent both low risk venues (e.g., discos, parties, movies, sports activities, fraternity and sorority activities) and higher-risk ones such as massage parlors, night clubs, strip shows, beer gardens (YAFS 2 data, reanalyzed in Cruz, Laguna, & Raymundo, 2002).

School Variables

A number of studies have found that there is low *school involvement* among delinquents, with majority of CICL being out-of-school at the time of apprehension (AKAP, 1998). However, the most cited reason for school drop-out was financial difficulty. Still, Carlota (1983) found that compared to a matched group of non-delinquents, female CICL were significantly less intelligent, were more frequently absent from school, were unsure of themselves scholastically, and had lower educational aspirations. Whether poor school engagement is a result of financial, intellectual, or other factors, the fact remains that school drop-out and low educational aspirations are risk factors associated with delinquency (Alampay, 2005).

In the East-West Center Population and Health Studies (2001) reanalysis of the YAFS 2 data, an index of *school connectedness* was created based on the two variables "have been out of school" and "don't plan to go to college". Higher substance use and abuse were present among youth between the ages of 15-19 years who were less connected or committed to schooling.

The Mass Media

Some provocative correlations have been found between mass media consumption and risk-related behaviors among adolescents (YAFS 2 1994 data, reanalyzed in Cruz, Laguna, & Raymundo, 2002). Watching more movies, videos, and x-rated films were related to more smoking, drinking and premarital sex, while radio listening was related only to more drinking and premarital sexual activity. Adolescents who read newspapers and magazines more frequently were also more likely to smoke and engage in premarital sex. The frequency of TV watching was positively correlated only to the likelihood of premarital sex (Sandoval, 2000).

In sum, Cruz, Laguna and Raymundo (2002) concluded that Filipino teenagers with greater media exposure are also more likely to engage in both "distal" risk behaviors (such as going to parties, discos, excursions and picnics, movie houses, and fraternity/sorority activities), and "proximal" risk behaviors (such as frequenting massage parlors, strip show, night clubs, and beer houses). Both types of risk behaviors had been previously related to smoking, drinking, and drug-taking.

There have been claims that anti-social behaviors in Filipino children and adolescents may be also associated with the "glamorization" of violence on television and in the movies (Etemadi, 2006; UP-CIDS-PST, 2003). Youth chalk up 12 hours a week watching TV, on average, with some in the urban areas watching up to 30 hours a week (Abrera, 2004; Youth Study 2001). Noontime shows, telenovelas, and anime cartoons make up most lower-income children's viewing fare, which are notorious for their violence, vulgarity, and sexual themes (Abrera, 2004; Hechanova, Alampay, Escaler & Estuar, 2004). The relationship

between media content and juvenile delinquency needs to be further examined in the Philippine setting, and not limited to television programs. Local cigarette and liquor advertisements, for example, may also foster sexism among youth and positive attitudes about substance use (Alampay, 2005).

Psychological Variables

Psychological variables or constructs pertain to the internal facets of the individual, such as personality characteristics, cognitions (e.g., perceptions, beliefs), motivations, self-concept, and the like, which are presumed to direct or explain his or her behavior in part. Very few local studies have delved into the psychological variables that may account for why some adolescents are more prone to gamble with their physical or mental well-being via such risky activities as underage drinking, the use of prohibited drugs, or unprotected premarital sex. These types of variables are notoriously difficult to capture in survey data, of course. However, a few relevant findings have turned up in the local literature.

For instance, teenagers between the ages of 15-19 years who do *not* rate themselves as "strongly religious" are more likely to be substance-abusing; the strongest effect is for male drug use (YAFS 2, 1994). But quite paradoxically, some survey data also show that the greater importance is placed on religion, the higher the teenagers' premarital sexual activity (Sandoval, 2000).

Some qualitative data on sexuality in adolescence also suggest that for most teenagers, sex takes place in the context of relationships, and that physical intimacy increases as trust between the young partners is gained. "Love" and the prospect of marriage are then used to justify their desires or "lust" and sex (Tan, Batangan, & Española, 2001) The same study elaborates that sexual meanings and behaviors are *gendered* in the Philippine culture; for instance, there is a notion that sex and desire are "natural" for males while females are to remain virgins and be responsible for restraining the male's desire. Giving up one's virginity is acceptable, however, as "proof of love" in a relationship.

The study reveals, therefore, that an understanding of sexual risk-taking among Filipino youth cannot be gained apart from an appreciation of their views of relationships, gender, risk, sex, and love.

Existing data on the psychological characteristics of CICL are scant and have not been subject to deeper study. With respect to observed personality traits of the CICL upon admission to DSWD rehabilitation or detention centers, the NCSD (1994) reports that more than one-third (38%) of the street children and one-fourth (25%t) of non-street children were assessed to have "negative" personality traits, whereas 28% of the street children and one-fifth or 21% of non-street children were assessed to have "positive" personality traits. Moreover, more than 50% of the CICL manifested "negative" attitudes. Unfortunately, the report did not indicate what is meant by "negative" and "positive" traits and attitudes.

According to Leones (1993), a smaller number of studies on the personality profile of the Filipino CICL reveal a youth who displays heightened feelings of anxiety, insecurity and apprehensiveness coupled with strong exhibitionistic, autonomy and dominance needs. He is also more hostile, distrustful, defiant, resentful and emotionally unstable and has lower self-esteem compared to non-delinquents. In a study comparing CICL and non-delinquent youth, the former were found to score significantly higher in impulsivity, or an inability to regulate impulses, emotions, and behaviors (Mistades, Moreno, & Palag, 2005).

In sum, the local literature has considered the following factors in relation to risk-taking behavior among Filipino youth: 1) sociodemographic characteristics, such as age, sex, socio-economic status, and educational status; 2) family variables, in terms of structure, youths' perceptions of marital stability and parental control, and the nature of familial relationships; 3) peer variables, namely peer "pressure", relationships, and activities done with peers; 4) school engagement and achievement; 5) mass media consumption; and 6) internal psychological variables such as personality characteristics and the beliefs and meanings ascribed to risky behaviors. In the succeeding section, we

integrate the foregoing information and present key themes that can be derived from the studies. We also evaluate the literature and propose steps that social scientists can take to further our understanding of risk-taking behavior among Filipino adolescents.

DISCUSSION

Summary of the Data and Proposed Interpretations

Several summative themes can be derived from the local literature that reveal some insights on risk-taking among Filipino adolescents. As the literature was largely descriptive and silent with regard to explanatory frameworks, we propose certain interpretations of the findings that are subject to further study and empirical test, given that the data we analyze were collected and published by other researchers.

Is risk-taking normative? First, there is evidence that, indeed, certain risky behaviors are unexceptional in occurrence: half of Filipino youth have "ever tried" smoking, and a majority have "ever tried" drinking. Such behaviors are likely to have been initiated in the service of normative experimentation, self-discovery, or bids for independence (Jessor, 1984; Moffitt, 1993; Schulenberg et al., 2001), and enabled by proximal and distal factors such as peers, media, and more permissive sociocultural attitudes. Consistent with this is that only about half of young people surveyed perceive smoking and "getting drunk" as "wrong". Likewise, around half of respondents in specific studies indicate having cheated on tests, skipped school, vandalized property, and hit or threatened to hit peers.

Infrequent among youth are taking drugs and serious forms of delinquency. Premarital sex is still far from widespread — engaged in by roughly a fourth of the youth sampled — but the reports indicate increasing figures across time (quite dramatically for females). The individual and contextual predisposing factors, and the health and social consequences are much graver for these latter behaviors, making them more prohibitive and rarer in occurrence. Smoking and drinking, on the other hand, become acceptable (albeit still unhealthy)

activities when individuals transition to adulthood; drug use, antisocial behavior, and premarital sex remain undesirable.

Concomitant perhaps with the increase in the reports of premarital sex in the last decade or so is that nearly half of adolescent respondents deem the behavior acceptable, but moreso for males than females. Changes in sexual risk-taking may be attributed to the shifting norms and attitudes about sex and gender roles in modern society, but also points to sexual development as a key aspect of adolescence that must be acknowledged and appropriately addressed to decrease the negative outcomes of early sexual activity (Katchadourian, 1990; Tan, Batangan, & Española, 2001).

More likely to take risks are adolescents who are older, poorer, and male. It is also clear that certain subpopulations of Filipino youth are more prone to risk-taking. Older adolescents; males; those who belong to the lower socio-economic stratum and are out-of-school, are more likely to engage in smoking, drinking, drug use, sex, and antisocial behavior. Unfortunately, the literature reviewed did not directly address the mechanisms that clarify why such sociodemographic characteristics are associated with greater risk. Age matters, we surmise, in that older adolescents, who are more physically (but not necessarily cognitively) mature, experience the maturity gap more keenly (Moffitt, 1993); they are more likely to engage in and feel entitled to behaviors that are more "adult", and have more opportunities to be exposed to potentially risky contexts relative to younger teens. For instance, they are more likely to be in intimate relationships, spend more time unsupervised with peers, and have access to alcohol and cigarettes.

In terms of gender, as suggested by Liwag, De la Cruz, and Macapagal (1998) and Tan, Batangan, and Española (2001), males are socialized differently from females in that they are permitted greater autonomies and are held to particular cultural standards of manhood. The emphasis on independence, daring, toughness, and sexual exploits may make teenage boys relatively more vulnerable to substance use, sexual risks, and delinquent

activities. Such differential gender roles and social expectations intensify in adolescence, when puberty reveals the biological differences between the *"nagbibinata"* and *"nagdadalaga"*. There are reports of increasing risk-taking among females, however, particularly for those who are high-income, and in terms of sexual behaviors. Initial hypotheses point to the progressive emancipation or liberalization of women from traditional gender roles and norms (Gutierrez & Shoemaker, 2008).

Complex processes mediate the relationship between poverty, education, and individuals' proclivity to engage in risky behaviors. Legitimate means for developing identity, social recognition, and competence — achievements that are critical in adolescence — are less available for poor and out-of-school youths. Lacking concrete opportunities to develop themselves and their future prospects, they may resort to antisocial behavior, substance use, and sexual risk-taking to attain such developmental milestones (Jarjoura, Triplett, & Brinker, 2002; Shoemaker, 2000). Moreover, lacking strong normative social/institutional controls (i.e., families, neighborhood, schools, churches, law enforcement, etc.), low-income communities are more likely to expose youth to antisocial and/or deviant norms (e.g., crime, gambling, alcohol abuse, risky sex) (Kashani, Jones, Bumby, & Thomas, 1999). Indeed, CICL report living in homes and neighborhoods that are disorganized and crime-ridden, where alcohol and drug abuse, gambling, and violence are rampant (UP CIDS-PST, 2003; TAMBAYAN, 2003; Carandang, 1994).

From a more microsystem perspective, poverty and its attendant disadvantages (e.g., chronic stress, unemployment, low education) impair families' ability to provide optimal parenting to adolescents (Sampson & Laub, 1994; McLoyd, 1998); the lack of appropriate supervision, discipline, and emotionally supportive relationships may steer teenagers to negative (peer) relationships, environments, and behaviors.

Both parents and peers matter in risk-taking. The data validate the commonly-held belief that family and peers are significant influences in youth risk behaviors. The studies reviewed

indicated that family structure, family relationships, and adolescents' perceptions of parental strictness and endorsement of smoking and drinking are factors implicated in risk-taking. Likewise, the characteristics of one's peer group and the activities engaged in with them appear to have an impact on adolescents' proclivities to become involved in antisocial behaviors, sex, and substance use.

"Broken homes", single parenthood, and "living away from home", were indicated as specific family structure correlates in several of the studies. We hypothesize that such family situations limit parental involvement, knowledge, and monitoring of their adolescents' whereabouts and activities, which in turn increases the likelihood of risk-taking (Barber, Maughan, & Olsen, 2005; Steinberg, 2005). It is not family structure per se, therefore, that causes greater vulnerability among youth; rather, parental involvement and the exercise of appropriate behavioral control are key, and these are more difficult for single parents or those who reside apart from their children. Consistent with this is that parental "strictness" — which we interpret as the enforcement or rules or limits — came out as a variable that inhibited adolescents from risk-taking.

A number of studies, particularly pertaining to CICL, also cited negative family relationships characterized by parental or marital abuse, conflict, and neglect. A significant corpus of psychological research has established the detrimental development outcomes associated with such negative parenting, such as poor self-regulation and coping abilities, externalizing behavior problems (e.g., aggression), internalizing behavior problems (e.g., depression, anxiety), and an increased attachment or susceptibility to the influence of peers (Yoshikawa, 1994; Caspi & Elder, 1988; Fuligni, Eccles, Barber, & Clements, 2001). Clearly, these outcomes are associated with substance use, antisocial behavior, and risky sexual activities.

A third family process that is implicated in the studies is modeling, in that perceived approval of smoking and drinking by parents, and whether or not parents drink and/or smoke, are

correlated with alcohol and tobacco use among teens. Antisocial behavior is likewise modeled from parents, to the extent that they impose aggressive, coercive, or power-assertive discipline on their children or engage in unlawful activities themselves (Patterson, DeBaryshe & Ramsey, 1989; Dishion, Patterson, Stoolmiller, & Skinner, 1991). Less evidence of modeling is available for sexual behaviors, although one study linked premarital sex with sexual discussions with siblings, and another found positive attitudes of premarital sex related to perceptions of instability in the parents' marriage. These imply that adolescents may be imbibing more permissive or liberal views of sex from vicarious learning or observation of family members.

Peer relationships play a significant role in the development of adolescents, and their impact on risky behaviors is complex. Quite surprisingly, only one study cited the popular notion of peer "pressure" as a significant correlate of adolescent risk-taking. While the respondents attributed their risky behavior (i.e., cutting classes, smoking, and drinking) to peer pressure, the concept was not further clarified to determine the nature and process of peers' influence. Adolescents who enjoy frequenting parties or bars with friends (and conversely, those who do not enjoy studying and sports) are more likely to drink and smoke; it is after all in these social venues that such activities are more likely (even expected) to ensue. These findings point not so much to peer pressure, but rather peer similarity or selection, as an alternate mechanism explaining the role of peers in risk-taking. Studies have found that adolescents are likely to join peer groups who have characteristics similar to theirs; adolescents who are deviant or at-risk thus find themselves in the company of similarly vulnerable peers, and the converse is true for well-adjusted youth (Dishion et al., 1991; Brown, Mounts, Lamborn, & Steinberg, 1993). Those who enjoy partying, therefore, or who engage in delinquent activities, ally themselves with like-minded others and mutually influence and reinforce each other's behaviors.

Modeling is also likely to take place, wherein adolescents imbibe the desirable attributes and behaviors of peers whom they would like to emulate. To the extent that smoking, drinking, sex, and engaging in delinquent activities are perceived positively and are reinforced in the teenager's social context, then these may be imitated (Moffitt, 1993). Peer acceptance, after all, is paramount at this stage.

In general, peer and family relationships cannot be considered in isolation from each other or the adolescents' individual characteristics. Recent studies indicate that the two systems interact: individual characteristics and family processes in pre-adolescence predict the nature of relationships teenagers subsequently have with peers, the type of peer group they eventually become part of, and even their susceptibility to peer influence or "pressure" (Fuligni et al., 2001; Patterson et al., 1989). Such interactions between parents, peers, and individual differences should be reflected in future research.

A number of local studies implicate the role of media in adolescent risk-taking. The more youth consume movies, television shows, radio programs, and even newspapers and magazines, the more they report having drunk alcohol, smoking, and engaging in premarital sex. Exposure to violent and sexualized programs have likewise been implicated in antisocial behaviors, but the relationship has not been directly studied locally. In part, media influences its viewers by projecting glamorized views of these behaviors. Through processes of vicarious learning, young people emulate models who portray "positive" images of drinking, smoking, and sex (Muus, 1996). Alternatively, today's youth are inundated with often conflicting or misleading images and messages about sex and other risk behaviors, that they may perceive these as normative and discount their undesirable effects. Adolescents are particularly susceptible to the various lifestyles, values, and norms projected in mass media (and now, computer technology and the Internet), given that they are, as yet, constructing their personal identities.

The local literature pertaining to the associated internal psychological variables, motivations, cognitions, and meanings

of risk-taking for Filipino youth have been few and equivocal. For CICL, some studies have predictably revealed negative characteristics such as impulsivity, anxiety, and low self-esteem. More revelatory are qualitative studies that explore in depth adolescents' views and the meanings they ascribe to risk (such as Tan et al.'s 2001 study on sex in the context of relationships, gender roles, and culture). Such research highlights the need to understand Filipino adolescents' own perspectives and motivations for effective, relevant, and culturally-sensitive interventions to be developed. Other recommendations for research in the area are presented in the succeeding section.

Recommendations for Research in Filipino Adolescents' Risk-taking

The most recent crop of empirical studies provide many insights on Filipino adolescent risk-taking, yet there remain several limitations in the local literature which preclude more compelling and fruitful conclusions. Research on Filipino adolescence is relatively young, and has predominantly aimed to describe, rather than test hypotheses or build theories (Alampay, De la Cruz, & Liwag, 2003). The studies reviewed here exemplify this observation, although they provide a starting point for investigating more complex relationships among the variables.

The overarching framework on which we base much of our recommendations is Bronfenbrenner's Bioecological perspective, which emphasizes that any developmental phenomenon — such as adolescent risk-taking — takes place *in context* (Bronfenbrenner & Morris, 1998). This context or environment is comprised of a complex series of nested systems from micro (i.e., family, peers, school) to macro (i.e., society, religion, culture), each characterized by bidirectional and evolving *processes*, *roles*, *relationships*, and *interactions* between the developing individual and the social and physical environment. It behooves the researcher to systematically describe the environment in these terms and in relation to risky behaviors in adolescence. This implies that research has to go beyond survey mode to more

focused studies that explore particular questions and variables in depth, or that test theoretical or empirical hypotheses.

Greater emphasis on processes. As yet, many of the variables that have been linked with risk-taking in the local literature, such as age, gender, socio-economic status, and educational attainment and status, are "social address" variables (Bronfenbrenner & Morris, 1998). Social address variables are static; that is, while these factors point to subpopulations who may be particularly vulnerable (i.e., male; middle to late adolescent; low socioeconomic status; out-of-school youth), the processes and explanations, or the *hows* and *whys* such variables are related to risky adolescent behaviors remain unclarified in the studies. Sociodemographic variables by themselves do not cause negative outcomes; rather, they represent contexts that shape an individual's experiences that may lead him or her to a path of risk-taking. In the previous section, we suggested certain mechanisms that may be further investigated in relation to these sociodemographic correlates.

Likewise, variables pertaining to family are reduced to its structural aspects, such as whether dual- or single-parent, or living together or apart. Parenting style (e.g., warmth, demandingness, autonomy-granting), parenting practices (e.g., discipline strategies, behavioral control), or other variables that capture the dynamic between parents and children are richer areas for study in examining the causes and correlates of adolescent risk-taking. As for peers, the nature of peer influence needs to be better understood, beyond reports of risky activities engaged in with friends. Issues that may be investigated include "pressure", coercive/control, or reinforcement processes in peer interactions; acceptance and belongingness, and attachment and intimacy, as mechanisms that drive or motivate peer conformity; peer selection and similarity; and the role of adolescents' perceptions of their peers' behaviors, attitudes, and norms.

Greater emphasis on multiple contexts/systems, individual characteristics, and their interactions. The multiple contexts influencing the adolescent interact in complex ways: family, peers, school, neighborhood, socio-economic status and culture, *jointly*

impact adolescent risk-taking. Focusing on or isolating a single variable as a cause or correlate therefore presents an incomplete, if not inaccurate, picture of the phenomenon. For instance, it has been established elsewhere that family processes predict peer group affiliation (i.e., whether teens are more likely to interact with scholastically-achieving or delinquent peers), which in turn predicts or mediates adolescent outcomes (i.e., at-risk or deviant) (Brown, Mounts, Lamborn & Steinberg, 1993; Fuligni et al., 2001). Moreover, the influence of such contexts may vary according to individual characteristics. Cognitive processes, social anxiety, self-regulation ability, and peer orientedness, are some of the relevant individual factors that have been studied as moderators of peer influence (e.g., Gardner & Steinberg, 2005; Cohen & Prinstein, 2006). Because much of the literature in the area is still Western, cultural relevance and sensitivity are key. Local researchers can learn from existing theories, but investigate whether variables interrelate and function differently in the Filipino context.

Consistent with the foregoing is the noteworthy observation in the local studies that risk-taking youth engage in more than one risky behavior; this is consistent with data from Western literature (Biglan, Brennan, Foster, & Holder, 2004). This suggests that different risk behaviors are interrelated and may be motivated by the same causal factors and individual and contextual vulnerabilities. This again points to the need to address risk-taking behaviors from a systemic perspective, rather than studying (or intervening with) each behavior singly.

Variables do not function in isolation, and nor is the phenomenon of risk-taking a singular event in adolescence. The proclivity to engage in risky behaviors may be a function of antecedent causes and transactions between the individual and his or her environment since childhood. In this sense, risk-taking can be thought of as a continuous developmental phenomenon, the roots of which were sown earlier in life (Sameroff & Chandler, 1975; Moffitt, 1993; Patterson, DeBaryshe, & Ramsey, 1989). On the other hand, psychologists have argued that the adolescent stage and its concomitant biological, cognitive,

and psychosocial transitions, normatively brings about risky behaviors even among teens who do not possess antecedent vulnerabilities (Moffitt, 1993; Schulenberg et al., 2001). In either case, researchers should be sensitive to these broader lifecourse and developmental perspectives on adolescent risk-taking in formulating their research questions, frameworks, and designs/ methodologies. The aforementioned recommendations imply that in-depth qualitative studies; multivariate modeling that moves beyond correlations to test predictive, mediating, or moderating relationships; and —more ambitiously — longitudinal designs, are in order.

It is critical to better understand risk-taking among Filipino youth, as the resulting basic knowledge should be the basis for effective systematic interventions. From a developmental viewpoint, and as revealed in local studies, engaging in risky behaviors such as smoking, drinking, and minor delinquency is normative to a certain extent: many adolescents (around half of respondents in every survey) dabble in these activities perhaps in the service of self-knowledge and identity development, exercising autonomy, peer belongingness or solidarity, and dealing with the various stresses and emotional upheavals of being a teenager. Though less frequently occuring, youth are exploring sexual activities as well — in ever increasing levels — particularly among females. Although normativeness may be argued, it is still paramount that more serious forms of risk-taking be curtailed, if not prevented. To permit our youth to take risks without understanding the whys or wherefores, or making efforts to intervene, is to imperil their future and consequently, our society's own.

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