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What Made Sahar Scared?: Imaginary and Realistic Causes in Palestinian and American

Children's Concept for Fear

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### Abstract

Young children associate fear with monsters, ghosts, and other imaginary creatures more than with real threats to safety, such as robbers or bullies—at least in Western societies. Cross-cultural studies are rare, are limited to older children, and have not asked if the role of the imagination extends to emotions other than fear. In this study, young Palestinian and American children (60 in each group, 3-7 years, age- and sex-matched) were asked to tell stories in which they generated a cause for fear as well as happiness, sadness, anger, and surprise. Imaginary creatures were rarely cited as the cause of any emotion other than fear, but were cited frequently for fear by both Palestinians and Americans. There was also a cultural difference: Palestinians generated significantly fewer imaginary and more realistic causes for fear than did Americans. Thus, imaginary causes are a part of Palestinian children's fear concept, but imaginary causes are not primary as they are for American children; for Palestinian children, realistic causes are primary in their fear concept.

*Keywords:* culture, emotion, fear, situational causes

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The earliest empirical studies on children's fears (Hall, 1897; Jersild, 1943) found that American children were afraid not only of possible dangers, such as sudden loud noises and strangers, but also of monsters, ghosts, and other imaginary creatures. More recent studies found similar results (Denham & Zoller, 1991; Strayer, 1986). Indeed, children think imaginary creatures are scary even when they are "just pretend" (Sayfan & Lagatutta, 2008, 2009). In the current study, we asked why imaginary creatures loom large in children's concept of fear, if this phenomenon is largely limited to Western cultures, and if it is unique to fear.

Three current accounts on children's understanding of fear help explain this curious phenomenon. One account is the imaginary-first view: Preschoolers' understanding of fear begins with imaginary causes and later broadens to include realistic ones (Bauer, 1976). This theory draws on Piaget's (1952) claim that the pre-operational (2-7 years) child's thought is dominated by magical thinking and fails to understand that what they have merely imagined cannot become real. The implication is that the primacy of imaginary fears in young children is due to a cognitive deficit, a primitive form of thinking that is eventually replaced with logic and reason (Piaget, 1962).

A second account -- the reality-first view -- is the opposite: Preschoolers' understanding of fear begins with realistic, experience-based causes and only later broadens to include imaginary ones as children's imaginative abilities increase during the preschool years (Bleuler, 1951; Harris, 2000; Leslie, 1994). This account draws on research that has refuted the Piagetian claim that children younger than seven years cannot distinguish the real from the imagined (e.g., Flavell et al., 1987; Harris et al., 1991; Samuels & Taylor, 1994; Wellman & Estes, 1986;

Woolley & Phelps, 1994). On the reality-first account, preschoolers can distinguish between realistic and imaginary causes, but their increasing imaginative abilities make imaginary causes more cognitively accessible. Hence, the primacy of imaginary fears in young children is due to an acquired cognitive skill.

A third account is the evolutionary view: Children come prepared with a highly functional and flexible learning system geared toward threat detection -- a sort of fear 'template' sensitive to the child's long maturational process that is specialized to pick up particular kinds of information from the environment (Barrett, 2005; Boyer & Bergstrom, 2011). Regardless of culture- or environment- specific dangers, children develop age-appropriate fears (Boyer & Bergstrom, 2011). On this account, preschool is a time during which children actively explore their environment often without the constant or close presence of the primary caregiver, and so it becomes especially important for them to anticipate and avoid threatening situations involving predators. Thus, the monsters, ghosts, and other non-existent creatures children imagine are a simply a byproduct of their ability to anticipate real predators.

Each of the three accounts implies that imaginary causes are relevant to any emotion and need not be limited to fear. On the imaginary-first account, the magical thinking of young children pervades all aspects of thought and, by extension, their understanding of all emotions. On the reality-first account, children's magical thinking reflects their understanding of how the real world works, and so the imaginary entities they create can elicit various emotions other than fear (Harris, 2000; Taylor, Cartwright, and Carlson, 1993). On the evolutionary account, children's imagined monsters illustrate the role of imagination in shaping human detection and response to threats; a similar evolutionary story for other emotions is also plausible. Interestingly, however, studies done in Western societies have found that children generate

imaginary creatures primarily for fear but rarely for other emotions (Denham & Zoller, 1991; Strayer, 1986), raising the question of why this phenomenon occurs and whether this phenomenon is true in other societies.

We propose an integration of the three accounts. Children's early understanding of fear involves both realistic and imaginary causes in which predators (real or imaginary) are commonly involved.

What our integrative account adds to the prior three is a clear prediction that imaginary causes will be generated for fear and rarely for other emotions. On our account, fear is, by nature, different from most other emotions in being oriented to the future. Surely, the snake in the grass or charging bear produce startle and orienting reflexes, responses we label as *fear*. Aside from these reflexes, however, most cases labeled as *fear* include a cognitive appraisal of the *future* implications of the current situation; for example, we fear walking down a dark alley for what we anticipate might happen there. In terms of a belief-desire analysis of mental states, fear typically involves beliefs about the future. The future might be immediate, as when face-to-face with a mugger, or it might be long term, as when contemplating a major life change. To anticipate the future is to imagine the future. On our account, both reality and imagination are part of the process of producing most cases of fear. Conversely, most other emotions are caused primarily by past or current events; one is sad about a loss that already happened or angry with someone currently blocking a goal. Of course, any emotion can stem from the imagination, but the prototype of most emotions has real past or current causes, whereas the prototype of fear is about the future. (Hope is another future-oriented emotion.) These prototypes become central to the concept of each of these emotions.

Central to our account is a script theory of emotion acquisition (Fehr & Russell, 1984; Russell, 1989; Widen & Russell, 2008) that emphasizes children's environments and learning experiences about a given emotion. For fear, children witness or experience real threats to safety, experience ambiguous situations (e.g., dark rooms, noises in the closet) in which they might anticipate predators and consequently interpret these situations as scary, and also hear culture-specific stories depicting scary supernatural beings. In this way, children understand that fear can be initiated by realistic, improbable, or even completely imaginary causes. When a child is asked to generate the possible causes of fear, either realistic or imaginary causes can readily come to mind. To the extent that children's environments and learning experiences are variable, we predict that different groups of children will generate imaginary and realistic causes for fear in different proportions.

Research on young children's understanding of fear has overrepresented children living in Western societies. Fortunately, however, a few cultural studies have been done in various African societies (Burkhardt, Loxton, & Muris, 2003; Ingman, Ollendick, and Akande, 1999; Maduwesi, 1982; Vandewiele, 1981) as well as Jewish and Bedouin societies in Israel (Elbedour et al., 1997). These cultural studies have shown that both realistic and imaginary causes are reported when older children (8 years and older) (or their parents) are asked only to list any and all of the child's fears; these studies did not ask about other emotions.

We are interested in how young children from non-Western societies understand fear based on what they readily say is scary. Further, we ask whether the children's tendency to generate imaginary causes primarily for fear but not for other emotions is a Western phenomenon—emotions other than fear need to be examined. Thus, the current study extends prior cross-cultural research to a younger sample, to other emotions, and to Palestinian-American

comparison. Palestinians are of interest because they are an understudied group who also differ from Americans on many variables, including (but not limited to) geographic location, language, religion, cultural traditions and values, and exposure to military conflict.

### **Study Overview**

In this study, we asked whether imaginary or realistic events come to mind when young Palestinian and American children (3-7 years) are asked to imagine what might have caused a story protagonist to feel scared (and other emotions). Children were individually invited to play a “game,” in which the experimenter and the child took turns telling a story about a female protagonist (Sahar or Sally). For each of five stories, the child was told that the protagonist felt a certain way (specified by a label: *scared*, *sad*, *angry*, *surprised*, or *happy*) and was then asked, “What happened? What made Sahar/Sally feel that way?” Children’s answers were then scored as to whether causes for each emotion were realistic or imaginary.

### **Method**

#### **Participants**

A total of 120 children participated in this study. There were 60 Palestinian children (32 males, 28 females, age range: 33-86 months, mean age = 52.5 months, SD =12.2 months) enrolled in daycare centers in the Ramallah and Beit Hanina; for these children, the study was conducted in their primary language, Arabic. There were 60 American children (matched to the Palestinian sample for sex and for age within a 6 month window; age range: 36-87 months, mean age = 53.3 months, SD =11.8 months) enrolled in daycare centers in the Greater Boston Area; for these children, the study was conducted in their primary language, English. The American sample was ethnically diverse and representative of the ethnic composition of the area: 63.8% were Caucasian, 5% Asian, 5% Hispanic, 1.6% African American, 5% of mixed ethnicity, and



11.7% other. A median split procedure was used to divide Palestinian and American children into two age groups: (a) younger (Palestinians and Americans: age  $\leq$  52 months,  $M=42$  months) and (b) older (age  $\geq$  52 months,  $M=61$  months).

### **Procedure**

A protocol was created and translated into Arabic. (The translator was fluent in Arabic, and the translation and was checked by two other fluent speakers.) For all participants, the protocol was practiced and strictly followed at all times. Children were tested individually in the child's primary language by the same female experimenter.

On the first visit to the daycare, the experimenter spent time playing with those children who had parental consent to participate in the study until the child seemed comfortable with the experimenter. On a subsequent visit, the experimenter invited the child to participate in a game about feelings. Children's participation was voluntary; they were free to refuse to participate and to quit at any time. In addition to the 120 children who completed the study, another 18 were omitted from the sample because they withdrew before the study was completed.

**Pre-experimental trial.** The experimenter and the child took turns telling a story about a female protagonist. Children were presented with a 5" x 7" glossy photograph of a 13 year-old girl showing a neutral facial expression (Camras, Grow, & Ribordy, 1983). This facial expression may be viewed online at <http://condor.depaul.edu/~lcamras/images/dneutral>. The girl in this photograph looks plausibly American or Middle Eastern.

The experimenter introduced the game by saying, "In this game, we are going to take turns telling a story about things that happen to a girl who is 10 years old. This is what she looks like [showing the neutral facial expression]. First, we need to name the girl. Should we name her Sally or Suzie? [In Arabic: Samia or Sahar] [Pauses for child's response] Great. Okay, so

her name is S [whichever name the child chose]. Now, I'll take a turn. I think that S lives with her mom and her dad. Now it's your turn."

This turn-taking procedure continued for two more turns each. The purpose of this trial was to give the child an opportunity to get used to the story-telling, question-response format of the study. The emotion trials were then introduced into the game.

**Emotion trials.** There were 5 emotion trials, one for each target emotion: *happy*, *sad*, *angry*, *scared* and *surprised*. The order of presentation was randomized separately for each child. Each emotion was randomly paired with a drawing of a neutral location (kitchen, hallway, living room, bedroom, and library). For each trial, the child was asked to generate a possible cause for the given emotion. For the fear trial, for example, the experimenter said: "One day, a long time later, S was in the (e.g., kitchen) and something happened to S that made her feel very *scared*. She felt so *scared* that everyone could tell she felt *scared*. What happened? What made S feel so *scared*?" Once the child had generated a possible cause, the child was mildly praised, irrespective of what emotion the child's response plausibly described. This procedure was repeated for each emotion trial.

### **Scoring of Responses**

All of the stories children told were transcribed verbatim. The stories told by the Palestinian children were also translated and transcribed into English by the experimenter. The experimenter's translations were then checked by another fluent Arabic speaker who listened to the stories on tape and then transcribed them. Any disagreements between the experimenter and the second coder's translations were resolved by discussion.

**Plausibility of generated causes.** Collectively, the 120 children had 600 opportunities to tell a story (120 children x 5 stories per child). All stories were scored for "plausibility" -- a

plausible story is one the judge thought reasonable for the emotion given. Three American raters (who were read the stories in English) and, in a separate set of sessions, three Palestinian raters (who were read the stories in Arabic by a bilingual individual) were first told what emotion the child was trying to describe and were asked independently to decide whether the story was a plausible cause of that emotion. For each response, the final scoring was based on a group decision (achieved when at least 2 of the 3 raters in each culture group agreed).

Agreement within each group of raters on proportion of stories judged as plausible for each emotion was high: fear (American raters: .99; Palestinian raters: .98), happiness (American raters: .97; Palestinian raters: .91), sadness (American raters: .96; Palestinian raters: .97), anger (American raters: .97; Palestinian raters: .97), and surprise (American raters: .92; Palestinian raters: .92).

Because American and Palestinian judges were so similar in their judgments, a final joint score was achieved by settling the few disagreements by yet another, bilingual judge. This is the set of joint scores that was analyzed<sup>1</sup>. Disagreements between culture groups were settled by a third judge. By this scoring, the percentage of plausible stories was: fear (.93), happiness (.98), sadness (.93), anger (.94), and surprise (.89).

**Coding stories for imaginary vs. realistic causes.** All plausible stories for all emotions (implausible stories were omitted from the analyses<sup>2</sup>) were coded into one of three mutually exclusive categories, each based on the type of cause the child generated: imaginary (e.g., “There was a monster when she opened the fridge”), improbable (e.g., “There was a bear in the house), and realistic (e.g., “There was fire”). Imaginary causes cite a non-existent object or event. Improbable causes cite an actual object or event albeit one that is very unlikely to have been encountered ever in the child’s life. Two American raters independently judged whether each

story belonged in one of the three categories; inter-rater reliability was high (.96).

Disagreements were settled by a third judge.

## Results

Of the 600 stories generated, 94% were plausible. There was no significant difference between Palestinians (93%) and Americans (95%) in the proportion of plausible stories generated ( $t_{115} = .40, p = .69$ ). Both Palestinians and Americans have plausible ideas about the events that elicit different emotions. All subsequent analyses were of the 561 stories rated as plausible.

### Fear vs. Other Emotions

Were imaginary causes generated more for fear than for other emotions? Table 1 gives the number of (plausible) stories sorted into the three mutually exclusive groups based on the cause: imaginary, improbable, and realistic. The proportion of stories involving imaginary causes was .34 for fear and .02 for the other emotions combined; this difference was significant,  $z = 6.50, p < .001$ . The differences between fear and each individual emotion were significant, all  $p < .001$ .<sup>3(a)</sup> The proportion of stories involving improbable causes was .09 for fear and .01 for the other emotions combined; this difference was significant,  $z = 2.79, p < .01$ . The differences between fear and each individual emotion were significant, all  $p < .05$ .<sup>3(b)</sup> The proportion of stories involving realistic causes was .57 for fear and .97 for the other emotions combined; this difference was significant,  $z = 7.73, p < .001$ . The differences between fear and each individual emotion were significant, all  $p < .03$ .<sup>3(c)</sup> Thus, children generated imaginary causes almost exclusively for fear.

(Table 1 about here)

### Imaginary, Improbable, and Realistic Causes for Fear

Were the causes children generated for fear primarily imaginary, as has been found in prior research? The answer is no—Table 1 shows that children were significantly less likely to generate imaginary ( $z = 4.09, p < .001$ ) and improbable causes ( $z = 8.10, p < .001$ ) than realistic causes for fear.

**Age differences.** There were no significant age differences in the number of imaginary, improbable, and realistic causes generated for fear. Chi-Square tests were not significant for age differences for any of the categories: imaginary [younger: 18; older: 20,  $\chi^2(1) = .154, p = .695$ ], improbable [younger: 5; older: 5,  $\chi^2(1) = .120, p = .739$ ], and realistic [younger: 30; older: 34,  $\chi^2(1) = .536, p = .464$ ].

**Cultural differences.** Table 2 shows that Palestinians were significantly less likely to generate imaginary causes and, conversely, significantly more likely to generate realistic causes for fear than were Americans. Palestinians and Americans alike were unlikely to generate improbable causes for fear.

(Table 2 about here)

### **Predators in Children's Generated Causes for Fear**

Predators made up the majority of children's plausible causes generated for fear, but predators were depicted in a significantly higher proportion of imaginary causes than realistic ones. (Children rarely generated improbable causes of fear; improbable causes were excluded from this analysis.) Indeed, for Palestinians, predators were depicted in 100% (11/11) of the imaginary causes, but only in 49% (20/41) of the realistic causes; this difference was significant,  $z = 3.07, p < .01$ . Similarly, for Americans, predators were depicted in 100% (27/27) of the imaginary causes, but only in 43% (10/23) of the realistic causes,  $z = 3.37, p < .001$ . When

children did not cite predators as realistic causes of fear, they cited various events involving darkness, falling down, and being left alone.

### **Discussion**

When Palestinian and American children were asked “What made Sahar/Sally scared?” their responses revealed three similarities. First, both imaginary and realistic causes of fear came to mind; improbable causes rarely did. Second, predators made up the vast majority of children’s causes of fear. When imaginary causes came to mind, they always involved predators (such as monsters). When realistic causes came to mind, they sometimes involved predators (such as dangerous animals) and sometimes involved other dangers (such as darkness, getting hurt, being left alone, and environmental hazards). Finally, children generated imaginary causes primarily for fear but rarely for other emotions (happiness, sadness, anger, and surprise).

What differed between Americans and Palestinians was the kind of cause that came to mind more readily for fear: Palestinians generated more realistic causes and fewer imaginary ones than did Americans. Thus, imaginary causes are a part of Palestinian children’s fear concept, but imaginary causes are not as primary as they are for Americans. For Palestinians, realistic causes are primary in their fear concept.

Taken together, the results support our integrative account. What is uniform across societies is that children’s early understanding of fear involves imagination and reality because both are involved in producing fear. In this way, fear has a special status. Imagination is most relevant to fear because fear, unlike most other emotions (such as sadness and anger), is prototypically future-oriented. Fear not only involves our ability to quickly recognize and react to real dangers, but also to imagine the future occurrence of undesirable events, whether or not

they can realistically occur. Thus, the monsters and ghosts that children generated for fear suggest that children implicitly understand the role of imagination in producing fear.

Predators were a prominent, but not the sole, cause in children's understanding of fear. Children might come prepared with a fear 'template' that is sensitive to age-related and environment-specific threats, as the evolutionary account suggests, but that is only a starting point. Our integrative account specifies that children's learning experiences guide their acquisition of emotion concept—for fear, children learn about a variety of threats, any one of which can become cognitively accessible. Thus, predators may be a frequent concern for preschoolers, but that need not imply that predators override other threats in children's fear concept.

What varies across societies is whether imaginary or realistic causes are more cognitively accessible. Children learn about realistic fears by witnessing or experiencing real threats to safety and they learn about imaginary fears by hearing culture-specific stories about scary supernatural beings, but the extent to which children are exposed to realistic versus imaginary fears may influence which comes to mind more readily. Perhaps for Palestinian children, real dangers outweigh their imagined monsters and ghosts, thus making real dangers more cognitively accessible than imaginary ones.

The limitations of the current study pose important questions for future research. Our study was limited to only one future oriented emotion, fear. Future research might examine children's understanding of other future-oriented emotions, such as hope, and how that understanding changes with age.

The differences between Palestinian and American children's imagined causes of fear may be due to any number of factors; future research might explore these factors. Some possible

factors (such as socioeconomic status and life stressors), for example, are difficult to measure and match cross-culturally. An alternative approach requires comparing two subsamples of a particular culture.

Our study is also based on a production measure (i.e., children generate stories); the data tell us about the relative salience of realistic versus imaginary fears but not how children interpret these qualitatively different causes. For example, we cannot assume that the children who generated imaginary causes for fear do not think realistic fears are scary, and vice versa. However, a story-telling task provides a foundation for a more sensitive measure of children's early fear concept. The fear stories children generated represent the prototypical events children associate with fear and (with slight modifications) can be used as stimuli in other tasks that allow us to examine the specific emotion children from different cultures attribute to imaginary and realistic fears. For example, a labeling study with a Palestinian-American comparison that included stories relevant to Palestinian children's experiences (e.g., those relating to the Palestinian-Israeli conflict) might be particularly revealing of children's understanding of realistic versus imaginary fears.



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## Footnotes

<sup>1</sup> When analyzed by American scoring alone or by Palestinian scoring alone, the same results were obtained.

<sup>2</sup> Few stories were judged as implausible for each emotion: fear (8), sadness (8), anger (3), surprise (13), and happiness (3). Stories judged as implausible included non-responses (e.g., “I don’t know”), unclear responses (e.g., “the flower”), and the denial of an emotion (e.g., “Nothing makes me scared”). Young children get easily distracted and so setting aside these implausible responses helps us focus on the times children were focused on the task.

<sup>3</sup> (a) The proportion of stories involving imaginary causes was significantly greater for fear than for happiness ( $z = 3.12$ ), sadness ( $z = 3.12$ ), anger ( $z = 4.91$ ), and surprise ( $z = 4.76$ ), all  $ps < .001$ .

(b) The proportion of stories involving improbable causes was significantly greater for fear than for happiness ( $z = 2.33$ ,  $p < .01$ ), sadness ( $z = 2.37$ ,  $p < .01$ ), anger ( $z = 2.37$ ,  $p < .01$ ), and surprise ( $z = 1.74$ ,  $p < .05$ ).

(c) The proportion of stories involving realistic causes was significantly lower for fear than for happiness ( $z = 6.46$ ,  $p < .01$ ), sadness ( $z = 6.52$ ,  $p < .001$ ), anger ( $z = 6.13$ ,  $p < .001$ ), and surprise ( $z = 5.63$ ,  $p < .001$ ).

Table 1

*Number of Generated Causes Judged as Imaginary, Improbable, and Realistic for Fear versus Other Emotions*

Generated Cause	Emotion					
	Non-Fear Emotions					Fear
	Sadness	Anger	Surprise	Happiness	Total	
Imaginary	0	4	5	0	9	38
Improbable	0	0	4	1	5	10
Realistic	112	109	98	116	435	64
Total	112	113	107	117	449	112

*Note.* The analysis reported in this table was restricted to the stories rated as plausible. Of the 600 stories generated, 561 were plausible.

Table 2

*Number of Palestinian and American Children's Fear Stories with Causes Coded as Imaginary, Improbable, and Realistic*

Generated Cause of Fear	Culture		$\chi^2$	<i>p</i>
	Palestinians	Americans		
Imaginary	11	27	9.86	<.002
Improbable	5	5	0.00	1.00
Realistic	41	23	12.06	<.001

*Note.* N = 120; Analyses reported in this table were restricted to stories rated as plausible. Of the 60 stories produced by Palestinian children, 57 were plausible. For American children, 55 stories were plausible. Chi-Square tests of independence were used to compare Palestinians to Americans. For all Chi Square tests, degrees of freedom = 1.