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We present a model suggesting that international conflicts escalate to violence when countries (a) express higher levels of power motive imagery, (b) exaggerate levels of perceived power motive imagery in communications and statements from the "other" side, and (c) express still higher levels of power motive imagery as a result of such exaggerated perceptions. The model is supported by three studies. In the first two, participants wrote replies to one of two versions of the same letter taken from a real crisis. The third study explored conditions that affect the exaggerated perception of power motive imagery of the other side by asking participants to highlight the important points of a letter from a real crisis, under neutral conditions and under conditions arousing power motivation. The role of psychological variables in the escalation of conflicts to violence is discussed.

Crisis escalation poses major problems and opportunities for the psychological study of peace and war. Sometimes a single event sets off a rapid chain reaction. Six weeks after the June 1914 assassinations at Sarajevo, for example, most of Europe was involved in a general war that neither side wanted, expected, or even understood—a war that Angell (1910), only 4 years

earlier, had confidently pronounced to be economically impossible. Other times escalation proceeds at a slower, more deliberate pace. Thus in 1990 and 1991, the world watched with mounting anxiety as Saddam Hussein and George Bush marched, step by relentless step, from a dispute over territory to a war that killed over 100,000 people and devastated the environment of the northern Persian Gulf.

However, every conflict does not escalate to violence; some are peacefully resolved. Thus, during the 1962 Cuban Missile Crisis, U.S. President Kennedy estimated that the chances of nuclear war were "somewhere between one out of three and even" (Sorenson 1965, 705), the Soviet Embassy began burning its archives, and U.S. Secretary of Defense McNamara worried that October 27 might be the last Saturday he would ever see. Yet the crisis ended without war, and in retrospect, it may even have ushered in the beginnings of detente (Blight and Welch 1989, 321). To take another example, at the time of Kuwait's independence in 1961, Iraq laid claim to its territory and appeared to be massing troops for an invasion, while Great Britain sent troops in response to a Kuwaiti request (Alani 1990; Watt 1965). Yet there was no Gulf War in 1961, and a few months later the crisis was largely forgotten.

In this article we suggest a general model of motivational and perceptual processes involved in conflict escalation. We then introduce two laboratory paradigms related to the model and present results from three studies designed to test different aspects of the model.

PSYCHOLOGICAL ASPECTS
OF THE ESCALATION PROCESS

Many factors contribute to the escalation of conflicts and war. The facts of geography and population growth, economic rivalry, arms races, and the changing structure of alliances are surely important (see Choucri and North 1975; George 1991; Glad 1990; Groebel and Hinde 1989; Nelson and Olin 1979; Singer 1989). On the other hand, all of these factors exert their influence only as they are filtered through psychological mechanisms of motivation, perception, and decision making. Thus the historian Joll (1968) stressed the importance of people's "unspoken assumptions" or psychology; for example, their oversimplified borrowings from Nietzsche or pseudo-Darwinian ideas of a perpetual struggle for survival. In the 1914 case, Germany's *actual* disadvantage in colonial territory and world power vis-à-vis France and Britain was magnified by the *psychological* sense that it needed "a place in the sun" (German Chancellor Bethmann-Hollweg, quoted in Jarausch 1973, 145).

PSYCHOLOGICAL FACTORS

In the last two decades, political psychologists have begun to identify and measure some of the psychological mechanisms that play a role in whether a crisis escalates to war or is peacefully resolved: motives such as power (McClelland 1975, chap. 9; Winter 1980, 1992), pride (Frank 1986), and relative deprivation (Davies 1969); perceptions and misperceptions (Jervis 1976; McCalla 1992; White 1984); oversimplified cognitive processing (Suedfeld and Tetlock 1977; Suedfeld, Tetlock, and Ramirez 1977; Suedfeld and Bluck 1988) and other effects of stress on judgment (Holsti 1972); false heuristics (Jervis 1976; Neustadt and May 1986); certain techniques of crisis management and influence or bargaining strategies (George 1991; Leng and Walker 1982; Leng and Wheeler 1979; Nevin and Fuld 1993); and the dynamics of the "social trap" (Brockner and Rubin 1985; Teger et al. 1980). Typical of these studies is the work of Holsti (1972), who made a systematic comparison of diplomatic documents and found that the sense of time pressure increased in 1914 as compared with the Cuban Missile Crisis, while the perceived range of alternatives and sense of responsibility decreased.

POWER AND AFFILIATION MOTIVES

This article focuses on the role of the power and affiliation motives in the escalation process. These two motives emerge consistently as two major dimensions of human motivation (Murray 1938; Wiggins 1980; Wicker et al. 1984) and are measured traditionally by content analysis of verbal material (Smith 1992; see also Winter 1991a, for a further integrated version of the motive scoring systems).

Laboratory studies. People who score high in the power motive are concerned about having impact on other people. They seek and get formal social power. They are concerned about prestige (Winter 1973; Winter and Stewart 1978; McClelland 1985, chap. 8). In negotiation they are confrontational and exploitative (Terhune 1968; Schnackers and Kleinbeck 1975) and, when they lack a sense of responsibility, they may engage in a variety of profligate, impulsive actions such as drinking and drug use, risk taking, sexual exploitation, and verbal and physical aggression (Winter 1988; Winter and Barenbaum 1985). In contrast, the affiliation motive involves a concern for warm and close relations with other people. High scorers are cooperative and friendly, at least in safe situations. McAdams (1985) suggested that affiliation can act as a check on power motivation by channeling concerns for control and influence into more prosocial, nurturant directions.

Power, affiliation, and theories about war. Many of the aggressive, profligate power-motivated behaviors discussed above are either individual analogs to war or else individual concomitants of war, whereas the friendly and cooperative behavior of affiliation-motivated people is an individual analog to peace seeking. In theoretical terms, the power motive seems closely related to many classical motive-like concepts invoked to explain war (see Nelson and Olin 1979, 17-23). Clausewitz's ([1831] 1962) famous definition of war—"an act of force to compel our adversary to do our will" (p. 63)—is practically a paraphrase of the scoring definition for power motivation. Other cognate concepts include "destructive" or "death instincts" (Freud [1933] 1964, 210-11), "honor" (Frank 1986), and the "ways of power" (Schmookler 1984, chap. 1).

Thus it is not surprising that empirical studies of American presidents (Winter 1973, 1991a), carried out at a distance, have found direct links between power motivation and war, and affiliation motivation and peace. Other studies involving political leaders of southern Africa (Winter 1980), members of the Soviet Politburo (Hermann 1980a), and a sample of 45 heads of state (Hermann 1980b) have also found significant positive relationships between a variety of measures of warlike disposition, on the one hand, and high power motivation and/or low affiliation motivation, on the other. At the collective level, McClelland (1975, 325-8) found that internal violence and political instability flourished in countries where affiliation was low and power high.

A MOTIVATIONAL/PERCEPTUAL
MODEL OF THE ESCALATION PROCESS

In a series of studies comparing World War I and the Cuban Missile Crisis, Winter has recently demonstrated how the power and affiliation motives affect the escalation process in two different ways: as motives *expressed* by each side (Winter 1993b), and as motives *perceived* by each side or *attributed* to the other side (Winter 1987a, 1987b, 1994). Thus war outcomes are more likely when both sides express high power motivation and low affiliation motivation in their communications and when both sides exaggerate the levels of power motivation in excerpts on the communications from the other side as compared with excerpts from their own side.

Of course these two processes go together: An exaggerated perception of the other side's power motivation (i.e., that their intentions are a threat) leads to an arousal of one's own power motivation; expressed in communications, this increased power motivation may in turn lead to even more exaggerated perception by the other side, and so on. When both processes operate on both

sides, the result is a truly "vicious circle." These relationships suggest a general model (first proposed by Winter 1991b) of the escalation process, which is shown in Figure 1. The model is also related to the archival studies of the 1914 crisis by Holsti, North, and Brody (1968, especially p. 133) and Zinnes (1968), both of which describe reciprocal relations between a nation's perception that it is the object of another nation's hostility and its own expression of hostility toward that nation.

EXPLICATING THE MODEL

In phase 1 of this model (see Figure 1), an initial threat (external or internal) arouses increased power motivation among leaders of country A, a result consistent with a good deal of experimental research (Winter 1973, chap. 3; Winter and Stewart 1978). In phase 1b, this increased power motivation is also expressed in more aggressive national power behaviors, involving military threats, exploitative negotiations, and a tough policy (Winter 1993b).

In phase 2, the media and policymakers of country B exaggerate the levels of power motive imagery that they perceive in the communications and public statements of country A. Such an exaggeration in the perceived power motivation of the other side—in effect a form of distorted attribution—is an empirical generalization from comparative studies of certain crises that escalated to war and comparable crises that were peacefully resolved (see Winter 1987a, 1987b, 1994). One purpose of the present article is to explore the antecedent conditions that govern the occurrence of such exaggerated attributions.

In any case, this exaggerated attribution of power motivation increases the sense of threat among the leaders of country B. This threat further arouses their own power motivation (phase 3), which is expressed in more aggressive national power behaviors of country B (phase 3b). The media and policymakers of country A, in turn, exaggerate their perceptions and attributions of this power motivation still further (phase 4), which leads to a corresponding increased sense of threat and further arousal of power motivation among leaders of country A (phase 1), which is again expressed in more aggressive national power behaviors of country A (phase 1b). This expressed power motivation is further exaggerated by country B—and so the cycle continues.

TESTING A SYSTEMS MODEL WITH DATA FROM INDIVIDUALS

The elements of this model are macroprocesses presumed to take place within certain decision-making systems or among certain groups of people (e.g., key political actors, bureaucrats, etc.). At the same time, the key terms
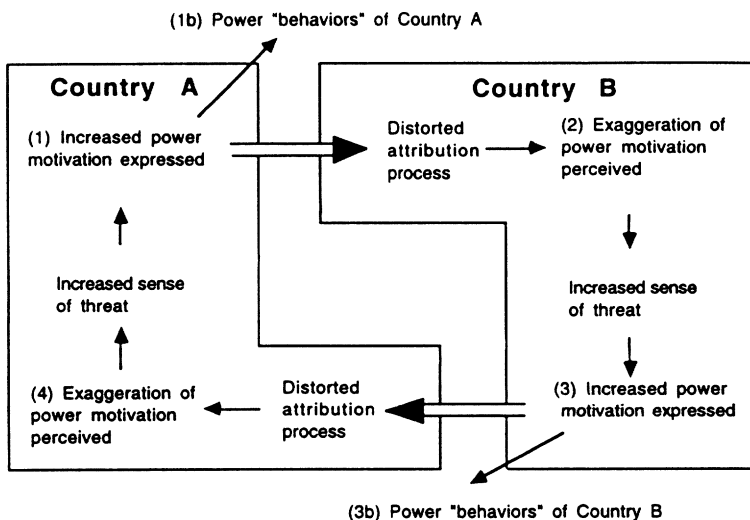
Figure 1: A Motivational Model of the Conflict Escalation Process
NOTE: Numbers in parentheses refer to phases of the model as described in the text.

and actions of the model—summaries of message content, replies to messages, levels of own power motivation, perceptions of the power motivation in others—are also concepts that can be operationalized and measured in the laboratory at the individual level. For purposes of the research described in this article, each phase of the model can be translated into experimental manipulations and/or observable responses.

For purposes of theory development, however, such transitions between system and individual levels require some comment (see also Winter 1993b). First, the content analysis systems for measuring motives appear to have similar construct validity when applied to the thematic apperception of individuals or to the speeches and interviews of political leaders and groups (Winter 1992a, 1992b). Second, at the level of collectivity or system, the expressed and perceived motive scores obtained from archival data can be thought of as proxies for an aggregation of the scores of those individuals who make up the group or control the system. On the other hand, the archival data can also be thought of as reflecting supraindividual or system concepts such as climate or values that are only analogous to the motive and perceptual variables manipulated and measured at the individual level (see McClelland

1976, E). Only systematic archival studies of the collectivities and individuals can help us decide between these two conceptions. The long-run success of such system-to-individual translations will depend on the plausibility of the results they produce when applied back to the interpretation of historical results and archival data.

PLAN OF THIS ARTICLE

The present article has three purposes: to develop laboratory experimental paradigms for exploring different phases of this model; to verify the within-country model links between phases 2 and 3 (or between 4 and 1)—that differences in the power motivation perceived or attributed to others will be associated with differences in the power and affiliation motivation expressed in reply; and to explore the antecedents of distortions in the perception or attribution of the other side's motives in conflict situations (phases 2 and 4).

STUDY 1: RELATIONSHIP BETWEEN PERCEIVED THREAT AND MOTIVES EXPRESSED IN REPLY

DEVELOPMENT OF AN EXPERIMENTAL PARADIGM

Is there a relation between one side's perception of the motives of the other side (group, nation, or "side") and the motives expressed in response? For example, if we perceive (or receive) more power motivation and/or less affiliation motivation in a communication, are we likely to respond with more power and less affiliation? This question focuses on the relations between phases 2 and 3 (or 4 and 1) of Figure 1. Studies 1 and 2 were both designed to test these relationships.

METHOD FOR EXPERIMENT 1

Participants

Participants were undergraduate students (38 men and 62 women) at the University of Michigan. Thirty-seven were recruited from a course in human motivation during the spring of 1990. For them, test materials were administered near the end of a class period by the first and third authors, who were not connected with the class in any way. In return for taking part, participants

were given a lecture on the results of the study. The remaining 63 participants took part in the study during the fall of 1990, in partial fulfillment of an introductory psychology course requirement. They were tested in groups of 10 to 15. Because there were no major differences in results between the two samples, data from both were combined.

Procedures

Participants were instructed as follows:

> In a minute we will pass out a letter[1] sent from Premier Khrushchev of the Soviet Union to President Kennedy during the height of the Cuban Missile Crisis in October 1962. This statement is two pages long. What we'd like you to do is read the entire statement carefully, and then prepare a response to Khrushchev's letter, a response which you will write out on the lined sheet which is attached to the letter. We'd like you to imagine that you're an advisor to President Kennedy and that he has asked you to draft a reply to send to Khrushchev.

After these instructions, participants were given a brief summary of historical events which led up to the Cuban Missile Crisis. They were then given the Khrushchev document and a sheet of "White House stationery" on which to compose a response. Participants were allowed about 20 minutes to write their responses. At the end, they completed a brief demographic sheet asking about age, gender, and agreement-disagreement with the following statement: "Although there may be times of high tension and times of lower tension between the U.S. and the U.S.S.R.,[2] in general I feel that we can't trust Soviet intentions very much" (7-point scale: $1 = strongly\ disagree$ and $7 = strongly\ agree$). Participants were then debriefed.

Manipulation of Motive Imagery in the Received Letter

The entire Khrushchev letter had been coded for power and affiliation motivation by the first and second authors, according to Winter's (1991a) manual. Participants were randomly given one of two versions of this letter. In the first version (the "power letter"), all nine affiliation motive images

1. The "letter" was a 1,300-word excerpt from Khrushchev's October 26, 1962, letter (U.S. Department of State 1973), written at the height of the crisis, in which he vividly described the dangers of war and first offered the deal—removal of the Soviet missiles from Cuba in exchange for a U.S. pledge not to invade Cuba—that was the basis for the ultimate resolution of the crisis. A copy of this excerpt is found in the appendix of this article.
2. This study was conducted in the spring of 1990. At this point in time, the Soviet Union still existed and for four decades had been a familiar potential adversary for many in the United States.

were removed and all 14 power images retained. In the second version (the "affiliative letter"), all 14 sentences with power motive imagery were deleted and all affiliative images retained. In both versions, the essential content of the document—an offer to remove the missiles in return for a pledge by the United States not to invade Cuba—was left intact. These two versions were designed to represent the two extremes of motive distortion (phases 2 or 4) of the model: one a summary highlighting only power and no affiliation, and the other a summary highlighting only affiliation and no power.

An example of an affiliation motive image deleted from the power letter was "Everyone needs peace: both capitalists, if they have not yet lost their reason, and all the more, communists." An example of a power motive image deleted from the affiliative letter was "You have now declared piratical measures, the kind that were practiced in the Middle-Ages."

It is hypothesized that participants given the power letter will write responses high in power motivation and low in affiliation motivation relative to participants given the affiliative letter.

Data Analysis

Participants' response letters were mixed together so that the coder was blind to whether the reply was to a power or an affiliative letter. To establish scorer reliability, the first and third authors each coded the 37 responses from the motivation class. Category agreement between the two was .90, which is adequate for research purposes (see Smith, Feld, and Franz 1992, 526-9). Both scorers had previously demonstrated high reliability (category agreement above .90) with material precoded by experts. The first author then coded the remaining responses. (Because the responses were relatively brief [$M = 138$ words], the usual rule about not scoring the same motive in contiguous sentences was not employed.)

Although the scoring was reliable by usual standards, it is always possible that some bias crept in because in their replies participants may have quoted images from the original letter that may have unconsciously influenced the scorers, who were aware of the general hypotheses although not of the experimental condition of each response. As a precaution against this bias, 20 responses were rescored by another scorer who was unaware of the procedures and hypotheses of the study. Percent category agreement with original scoring for both motives was .85, which supports the original scoring.

A two-way analysis of variance (ANOVA) was used to compare group means on the amount of motive imagery expressed. The two independent variables were type of letter received (power letter or affiliative letter) and gender. Separate ANOVAs and associated F statistics were computed for two

dependent variables: the number of power images expressed in reply letters and the number of affiliative images expressed in reply letters.

RESULTS

As predicted, participants given the power letter expressed significantly more power and less affiliation in their responses than did participants presented with the affiliation letter, as shown in Table 1. Those receiving the power letter wrote replies with a mean of 20.36 power images per 1,000 words, compared to 12.38 power images per 1,000 words in replies by those who received the affiliative letter, $F(1, 96) = 11.91, p < .001$. Men expressed more power images than women ($M = 19.29$ and 14.40, respectively), $F(1, 96) = 5.73, p < .05$. There was no gender-by-letter version interaction.

In regards to the affiliation motive, participants receiving the power letter expressed significantly less motive imagery in reply than did those given the affiliative letter ($M = 1.93$ and 9.85 images per 1,000 words, respectively), $F(1, 96) = 36.16, p < .001$. There were no gender differences in the amount of affiliative imagery in the letters and no gender-by-letter version interaction. In addition, there were no differences in any of these results when responses to the "distrust Soviets" question ($M = 3.37, SD = 1.41$) were introduced as a covariate in the ANOVA to control for the effects of participants' beliefs about Soviet trustworthiness.

DISCUSSION

The results of study 1 support the relations between phases 2 and 3 (or 4 and 1) of the conflict escalation model portrayed in Figure 1. Participants given the power letter (presumed to be more threatening) expressed more power imagery and less affiliation imagery in their replies relative to participants receiving the (presumably less threatening) affiliative letter. This higher expressed power motivation is likely to be associated with more aggressive behavior (phases 3b and 1b), as Winter (1994) has shown. At the same time, it may also increase the likelihood of distorted perception by the other side (phases 4 and 2).

The results for the affiliation motive, however, suggest how the cycle may be slowed or even reversed. The affiliative letter increased the amount of expressed affiliation in subjects' responses. When received, these responses could in turn elicit higher affiliation motivation in reply. In short, perceived motives and expressed motives are reciprocal: Power perceived begets power expressed, whereas a friendly affiliative overture "turneth away wrath."

TABLE 1
Expressed Images of Power and Affiliation
in Responses to Two Versions of Khrushchev's Letter

	Experimental Condition			
	Power Letter		Affiliative Letter	
Expressed Images per 1,000 Words	M	SD	M	SD
Power motive				
Men (*N* = 38)	22.85	10.00	16.70	7.00
Women (*N* = 62)	19.08	15.08	9.72	7.92
Total (*N* = 100)	20.36	13.35	12.38	7.54
Affiliation motive				
Men (*N* = 38)	1.48	3.41	8.16	5.70
Women (*N* = 62)	2.16	3.97	11.05	8.95
Total (*N* = 100)	1.93	3.78	9.85	7.60

Variance Table			
	Degrees of Freedom	*Mean Square*	F *Statistic*
For power images			
Letter version	1	1,394.60	$11.91, p < .001$
Gender	1	670.80	$5.73, p < .05$
Letter Version × Gender	1	59.78	.51
Within	96	117.06	
For affiliation images			
Letter version	1	1,406.49	$36.16, p < .001$
Gender	1	74.06	1.90
Letter Version × Gender	1	28.25	.73
Within	96	38.90	

Although these results may support the model, an alternative interpretation might suggest that they only demonstrate an obvious process of reciprocity, either in the sense that the message received serves as a model for the message to be sent or else a kind of negative reciprocity (Youngs 1986), that threat elicits threat and anger elicits anger (or power motive imagery elicits power motive imagery). Still, processes that may seem obvious to some are worth confirming experimentally, especially if they involve important social outcomes such as war and peace. And while threat or anger are components of power motivation, we prefer the latter concept because it includes other forms of impact, because it has demonstrated construct validity from decades

of prior research, and because it is linked to the affiliation motive, which was also involved in the present study as well as other studies of war and peace (Winter 1993b).

Finally, these results may be an artifact of participants' knowledge of how the Cuban Missile Crisis ended over 30 years ago. Students in experiment 1, for example, may have been more willing to express hostile power-oriented words toward the Soviet Union after reading the power letter because they were well aware that war did not occur in 1962. The Iraqi invasion of Kuwait in August 1990 made it possible to test whether the same effects would occur in the midst of a real, ongoing crisis where the final results were not yet known. In the fall of 1990 we therefore designed study 2 as a replication of study 1 in order to study how participants would respond during an actual crisis.

STUDY 2: PERCEIVED THREAT AND EXPRESSED MOTIVES DURING AN ONGOING CRISIS

METHOD

Participants

Forty-nine participants (23 men and 26 women) enrolled in a course on human motivation took part in study 2, on October 17, 1990. The first author and a research assistant, who were not connected to the class in any way, administered the test materials near the end of a regular class. The date was well after the August 2 Iraqi invasion of Kuwait and subsequent deployment of U.S. troops in Saudi Arabia, but well before the beginning of the aerial bombardment of Iraq and ground war in early 1991. At this point, there was much uncertainty about how the crisis would be resolved. Despite U.S. fears of becoming entangled in another Vietnam, war was a distinct possibility. Most media reports suggested that a U.S. victory would not be easy if war broke out.

Procedures

Participants were randomly given one of two versions of a letter sent on August 21, 1990, by Iraqi President Saddam Hussein to U.S. President

George Bush (U.S. Department of Commerce 1990). One version had all seven affiliative images removed and all 20 power images retained, while the other had all power images deleted and all affiliative images preserved. These versions are analogous to the power and affiliative Khrushchev letters of study 1. Participants were instructed, as in study 1, to read Saddam Hussein's letter and prepare a draft reply for President Bush's signature. After reading a brief summary of recent events in the Gulf, the experimenters passed out the materials.

A reliable coder, blind to the condition under which each reply letter was written, coded all responses to Hussein's letter for the power and affiliation motives. The results are summarized in Table 2.

RESULTS

There was a significant main effect for letter version received on the number of power images written in response. Participants who read the power letter responded with more power images than did those who read the affiliative letter ($M = 27.31$ and 17.31 images per 1,000 words, respectively), $F(1, 45) = 16.28, p < .01$. In addition, men wrote more power imagery than women ($M = 23.97$ and 19.88, respectively), $F(1, 45) = 4.27, p < .05$. There was no gender-by-letter version interaction. There were no significant main or interaction effects on the amount of affiliation motive imagery in the responses.

DISCUSSION

Using two different conflict situations, we have demonstrated a relationship between receiving a power-oriented, threatening letter and expressing higher levels of power motive imagery in reply. On the other hand, receiving a more affiliative letter led to expressing higher affiliation only in the 1962 Khrushchev letter. One possible reason why affiliation imagery was not affected by the friendly Hussein letter may have been the small number of affiliative images it contained, which offered less of a contrast to the power letter. A second explanation would suggest that in 1990 when the U.S. president and media portrayed Saddam Hussein as a cruel despot and compared him to Hitler, the affiliative letter was simply not plausible. (Would we have found a similar lack of results for affiliation in study 1 if it had been conducted during the Missile Crisis in October 1962?)

TABLE 2

Expressed Images of Power and Affiliation
in Responses to Two Versions of Saddam Hussein's Letter

| | Experimental Condition | | | |
| Expressed Images per 1,000 Words | Power Letter | | Affiliative Letter | |
	M	SD	M	SD
Power motive				
Men (*N* = 23)	31.94	7.40	18.85	11.47
Women (*N* = 26)	24.11	10.35	15.64	5.65
Total (*N* = 49)	27.31	9.14	17.31	8.67
Affiliation motive				
Men (*N* = 23)	4.24	6.42	5.62	10.34
Women (*N* = 26)	4.30	10.97	3.11	4.12
Total (*N* = 49)	4.27	9.11	4.41	7.35

| Variance Table | | | |
	Degrees of Freedom	Mean Square	F Statistic
For power images			
Letter version	1	1,381.13	16.28, $p < .001$
Gender	1	362.21	4.27, $p < .05$
Letter Version × Gender	1	63.51	.75
Within	45	84.82	
For affiliation-intimacy images			
Letter version	1	.10	.001
Gender	1	17.77	.24
Letter Version × Gender	1	19.72	.26
Within	45	74.84	

STUDY 3: DISTORTION OF THE
OTHER SIDE'S POWER MOTIVATION

DEVELOPMENT OF AN EXPERIMENTAL PARADIGM

What are the psychological mechanisms that lead people to exaggerate the other side's power motivation and hence perceive greater threat in its communications? Although any number of conditions might produce distorted perceptions or attributions, some recent research suggests that people's own levels of power motivation would have such an effect. For example, McClelland and his associates (McClelland, Davidson, and Saron 1980; McClelland et al. 1980) found that the higher people's aroused power motivation, the more

attention they paid to power-related cues (as measured by evoked potentials) and the better they processed and remembered them (as measured by standard laboratory techniques). Thus the arousal of the perceivers' power motivation should be one such mechanism. Study 3 was designed to simulate the reporting task represented by phases 2 and 4 of the conflict escalation model under neutral and power motive arousal conditions.

METHOD

Participants

Participants were undergraduate students (72 men and 83 women) at the University of Michigan who took part in this study during the spring of 1989 to fulfill an introductory psychology course requirement. Sessions were conducted in groups of 10 to 15 people. Each session was randomly assigned to a neutral or a power motive arousal condition.

Procedures

In both conditions, participants were given no information about the study; the sign-up sheet merely instructed them to appear at a university classroom during their chosen time. Upon entering the room, participants signed consent forms, and were then asked to write stories to three Thematic Apperception Test (TAT) sentence cues, in order to provide a baseline or dispositional measure of their motive levels. When this was completed, the experimenter announced in the following words that the second part of the study would now begin:

> In a minute we will pass out a letter sent from Premier Khrushchev of the Soviet Union to President Kennedy during the Cuban Missile Crisis in October 1962. This statement is two pages long. What we'd like you to do is read the entire statement carefully and then go through the document again with a highlighter pen (which we will hand out to you), marking what you feel are the important points in Khrushchev's letter. Try to highlight those sentences or clauses that you think summarize the essential message being conveyed. This is something a television reporter might do when preparing an excerpt for a 30 second slot on the evening news.
>   Now remember, your job is to pull out what you think are the important quotes. Be selective. Don't highlight any more than one fourth of the document, and you may highlight as little as one fifth of the document.

In the neutral condition, participants were then given the same Khrushchev letter used in study 1 (including all 14 power and 9 affiliation motive images)

and a yellow highlighter pen. After completing the task, they were asked to fill out a demographic sheet and the distrust Soviets question used in studies 1 and 2. Participants were then debriefed.

The power arousal condition was the same as the above except for the additional arousal of the power motive in participants. After the highlighting task was explained to the students, but before the actual highlighting, the experimenter went on to say the following:

> To make this task more interesting for you, we want in a small way to recreate the atmosphere and spirit in which political work like this might go on. First, we will play passages from an audiotape of one of Shakespeare's plays about a great leader, Henry V. Then we want to go back to the days of the Kennedy administration and play portions of his inaugural address, which many Americans found inspiring. As you watch the videotape of Kennedy, try to put yourself back in time and space and throw yourself into the role of an intelligence officer whose job it is to summarize the document for the president.

These speeches have been shown to arouse the power motive in men and women (Steele 1977; Stewart and Winter 1976; Winter 1973, chap. 3). After the speeches, power arousal was further heightened by giving participants a brief summary of the historical events that led up to the Cuban Missile Crisis. They were then reminded that their task was to highlight those sentences in Khrushchev's letter that they thought summarized the essential message he was trying to convey.

Data Analysis

As discussed earlier, the Khrushchev letter had been scored for power and affiliation motivation imagery by the first and second authors. Participants' highlighted responses were then compared to this "template."[3] A copy of the Khrushchev letter with motive scoring indicated is in the appendix. For each participant, the numbers of power and affiliation images highlighted were divided by the total number of words highlighted in order to control for individual differences in the amount of highlighted material. Results were expressed in terms of the number of motive images highlighted per 1,000 words highlighted. Because extremely short or extremely long highlighting could distort scores, we restricted the analysis to those participants who highlighted at least 15% and not more than 30% of the document. (Recall that the instructions were to highlight between 20-25%.)

3. In creating the template, the authors coded all affiliative and power images even if the same motive appeared in contiguous sentences. Because of the brevity of the excerpt, we did not employ Winter's (1991a) rule about not scoring the same motive in contiguous sentences to maximize the amount of motive imagery present.

In preparing the scoring template, the authors also kept track of whether Khrushchev's power motive images were attributed to the United States or the Soviet Union. (For example, the sentence "You have now declared piratical measures" is a power motive image attributed to the United States.) There were eight power images attributed to the United States, four to the Soviet Union, and two that were attributed to war in general. This refinement made it possible to determine whether participants' highlighting varied as a function of Khrushchev's topic (e.g., Soviet vs. U.S. actions).

The participants' TAT stories from the beginning of the study were scored for power and affiliation motivation by the first author who had demonstrated scoring reliability (category agreement above .90 on materials precoded by experts).

Once again, two-way ANOVAs were used to analyze the data, with arousal condition and gender as the independent variables. When used as a covariate, answers to the distrust Soviets question ($M = 3.44$, $SD = 1.70$) did not affect the results in any significant manner and so are not discussed further.

RESULTS

Table 3 shows significant main effects in the analysis of variance of highlighted power images. Participants in the power-motive arousal condition highlighted more power motive images than did participants in the neutral condition ($M = 14.58$ vs. 11.84 images highlighted per 1,000 words highlighted, respectively), $F(1, 106) = 4.82, p < .05$. This result is due mainly to more frequent highlighting of power images attributed by Khrushchev to the Soviet Union ($M = 6.11$ vs. 3.45, respectively), $F(1, 106) = 21.02, p < .001$. There were no main effects for condition on power images attributed to the United States or general war power images. In other words, participants in the power arousal condition perceived Khrushchev's letter as expressing higher power motivation, specifically higher Soviet power motivation. Men scored higher than women in total power images ($M = 14.66$ vs. 12.01, respectively), $F(1, 106) = 4.82, p < .05$, and in power images attributed by Khrushchev to the United States ($M = 8.83$ vs. 6.89, respectively), $F(1, 106) = 4.42, p < .05$, but there were no condition-by-gender interactions. Finally, there were no main effects or interactions on the amount of highlighted affiliation imagery in the Khrushchev document.

There were no consistent relationships between participants' baseline power and affiliation motives (assessed by the TAT at the very beginning of the study, before any experimental arousal) and the number of motive images they highlighted, in either experimental condition. (There was a nonsignificant tendency, in the neutral condition only, for people high in power

TABLE 3

Power and Affiliation Highlighted
in Khrushchev's Letter According to Arousal Condition

| Highlighted Images per 1,000 Words Highlighted | Experimental Condition | | | |
| | Power Arousal | | Neutral | |
	M	SD	M	SD
Power motive				
Men ($N = 53$)	15.45	5.31	13.72	5.53
Women ($N = 57$)	13.72	6.67	10.24	7.05
Total ($N = 110$)	14.58	6.03	11.84	6.57
Power motive referring to				
Soviet Union ($N = 110$)	6.11	3.00	3.45	3.03
United States ($N = 110$)	7.77	4.70	7.88	5.29
General war ($N = 110$)	.65	1.46	.52	1.26
Affiliation motive				
Men ($N = 53$)	10.07	4.50	10.39	4.44
Women ($N = 57$)	12.34	6.18	11.43	4.18
Total ($N = 110$)	11.21	5.46	10.95	4.29

| Variance Table | | | |
	Degrees of Freedom	Mean Square	F Statistic
For total power images			
Arousal condition	1	185.55	$4.82, p < .05$
Gender	1	185.71	$4.82, p < .05$
Condition × Gender	1	21.10	.55
Within	106	38.51	
For affiliation images			
Arousal condition	1	2.41	.10
Gender	1	74.76	3.10
Condition × Gender	1	10.17	.42
Within	106	24.15	

motivation to highlight fewer power images.) Thus, although external power *arousal* increases the tendency to perceive power images in a communication, *dispositional* power motivation appears to have no such effect.

Of course, it is possible that the additional instructions given to participants in the power arousal condition to role-play may have been responsible for the effect, rather than the power-arousing stimuli (readings from *Henry*

V and Kennedy inaugural). To check for this possibility and to replicate our results, we ran a modified form of our study with a small sample of participants in the fall of 1990. In the neutral condition, we presented the participants with the same instructions given to the participants in the power arousal condition (although without power-arousing speeches): "Try and put yourself back in time and space and throw yourself into the role of an intelligence officer whose job it is to summarize the document for the president." They were then given the brief summary of the historical events leading up to the Cuban Missile Crisis. Thus the only difference between the neutral and power arousal conditions in this further study was the presentation of the power arousal stimuli (the *Henry V* readings and Kennedy inaugural) to the latter group. The results were similar to those of study 3: Compared to the neutral condition, participants in the power arousal condition highlighted more power images referring to the Soviet Union, which is the major difference in the main study ($M = 5.64$ and 4.26 images highlighted per 1,000 words highlighted, respectively), $t(83) = 1.67$, $p < .05$, one-tailed. In addition, participants in the power arousal condition highlighted significantly less affiliation imagery than did participants in the neutral condition ($M = 9.71$ and 12.43, respectively), $t(83) = 1.91$, $p < .05$, one-tailed. In the ANOVA results, there were no significant main effects or interactions with gender as an independent variable. These results demonstrate that the distortion of the other side's power and affiliation motivation should be attributed to power motive arousal rather than instructional set or the historical briefing.

DISCUSSION

Study 3 supported phases 2 and 4 of the hypothetical conflict escalation process portrayed in Figure 1, in that participants who underwent power motive arousal exaggerated the amount of power images perceived in Khrushchev's letter. This result was due specifically to the greater number of highlighted Soviet power images; power imagery attributed by Khrushchev to the United States or general war images did not vary across the two highlighting conditions. The power arousal procedure, then, distorted participants' perceptions of the aggressive intent (specifically) of the other side. The lack of significant results for the affiliation motive in the main study indicates that power arousal, while heightening the sense of power and threat from an enemy, does not necessarily dampen the perception or reception of affiliation. These results do not vary as a function of prior attitudinal beliefs about Soviet trustworthiness or gender.

GENERAL DISCUSSION

OVERVIEW

The three experiments described above are tests of different phases of the model of conflict escalation depicted in Figure 1. Phases 1 and 3 of the model suggest that higher perceived power motivation, representing a heightened threat, increases levels of expressed power motivation. This was tested with documentary material from both the Cuban Missile Crisis (study 1) and the 1990-1991 Persian Gulf crisis (study 2). Further, situations of power motive arousal lead to degraded information processing whereby people are more likely to exaggerate the power motivation (hence the threat) of the other side (phases 2 and 4), as shown in study 3.

BOMBS OR BOMBAST?

Although the present results confirm many aspects of the conflict escalation model, they do not necessarily indicate that participants who perceived and expressed heightened power imagery were also more likely to engage in "war" behaviors. (In other words, phases 1b and 3b of the model have not yet been tested in the laboratory.) It may be that people facing threats and undergoing power motive arousal respond in a bellicose verbal manner as a form of impression-management or saber-rattling to deter a potential aggressor (see Jervis 1976). On the other hand, if respondents exaggerated the power imagery in the rhetoric of the other side as a way to justify their own genuine hostility, then intrapsychic explanations might be more useful for understanding behavior. Future research could incorporate measures of aggressive behavior (phase 1b and 3b in Figure 1) into the two paradigms developed in the present research to test these two alternatives (see Tetlock and Manstead 1985).

GENDER EFFECTS

In studies 1 and 2, men expressed more power motivation in their replies than did women, and in study 3, they highlighted more power images attributable to the United States. We have no explanation for these gender differences because previous research (Stewart and Chester 1982; Winter 1988) has shown no gender difference in power motive levels. Perhaps the stereotypically "male" international conflict and war scenarios used in the present studies engaged the power motivation of our male participants more than that of our female participants. However, the lack of any interactions

involving gender means that men and women responded in the same ways to the different letter versions in studies 1 and 2 and to the power arousal in study 3.

IMPLICATIONS FOR THEORY

Distortion in Social Perception

The present results, particularly those of study 3, converge with several lines of theory in social psychology and international relations. Phases 2 and 4 of the model—exaggeration of power motivation of the other side—are consistent with ethnocentric distortion in intergroup perceptions (Blake and Mouton 1962; Klein and Maccoby 1954) and polarization of judgments on emotion-laden issues (Hovland and Sherif 1952; Eiser 1980).

Tajfel (1981) has proposed a general theory of intergroup social perception that is relevant to the present studies and model:

> When judgments concerning some quantifiable or ratable aspects of stimuli which fall into distinct categories are called for, differences in value or relevance cannot fail to influence the quantitative judgments in the direction of sharpening the objectively existing differences between the stimuli. These judgmental effects . . . are particularly pronounced when [they] are made in dimensions in which scaling in magnitude is simultaneously a scaling in value. (p. 70; see also pp. 79-89)

In the present research, the original stimuli are the letters or statements from own side and other side (in study 3 of this article, the Khrushchev letter). The paraphrases made by participants are, implicitly, judgments of magnitude (of power motive imagery), a dimension that is simultaneously related to a negative or aversive value (threat), while the source of statements (own side versus other side) corresponds to Tajfel's "distinct categories." Tajfel's work, then, provides a theoretical linkage between the present results and the model of Figure 1 and the literature of social perception and conflict.

Theories of International Relations

Also, issues of perception and misperception play an important role in political science thinking about international relations (Jervis 1976) as related to the perception of threat (Zinnes 1968), both in terms of "situational" and "dispositional" perspectives (McCalla 1992). We suggest that the psychological perspectives, model, and experimental paradigms employed in the present research may be useful in exploring the antecedents and outcomes of

both kinds of misperception. For example, the pattern exemplified in the present study seems to fit Jervis's "spiral" model, but not his "deterrence" model. Are there crises, then, in which exaggerated perceptions of threat and higher levels of expressed power motivation actually deter aggression and so prevent war outcomes? The question awaits further archival and laboratory research.

The present results are also relevant to work on behavioral reciprocity in conflict behavior, both in the laboratory (e.g., Komorita, Hilty, and Parks 1991) and in archival studies of crisis bargaining (Leng 1993), in that the experimental manipulation of phases 1 and 3 of the model (studies 1 and 2) implicitly embodies the norm of reciprocity in their effects. However, the norm of reciprocity comes into play only after an initial "prime mover" act. Study 3, involving phases 2 and 4 of the model, suggests a possible point of entry into the cycle for such an act, as well as some possible sources of it.

Power Motivation and Integrative Complexity

Finally, readers may notice that many of the effects of power motivation and perceived power motivation are similar to those of low integrative complexity (see Suedfeld, Tetlock, and Streufert 1992). That is, integrative complexity goes down in crises that escalate to war as compared to crises that are peacefully resolved (Suedfeld and Tetlock 1977), and it goes down in newspaper editorials about other countries during disagreements (Suedfeld 1992). Further, integratively simple and complex rhetoric tend to be reciprocated in kind (Tetlock 1988). Two questions therefore arise: (1) Is power motivation identical to (or highly correlated with) low integrative complexity? This seems unlikely on two grounds. First, there is little content overlap between the two scoring systems (compare Winter 1973, Appendix I and Suedfeld, Tetlock, and Streufert 1992). Second, in a study of managers, Tetlock, Peterson, and Berry (1993) actually found a positive correlation ($r = .30$) between power motivation and integrative complexity. (2) In terms of predicting war versus peace outcomes, do power motivation and integrative complexity have overlapping, additive, or interactive effects? A research project by the second author (Winter 1993a), scoring documents from war and peace crises for both variables, is currently underway to answer this question.

SYSTEM PROCESSES AND INDIVIDUAL PROCESSES: LEVEL OF EXPLANATION REVISITED

The research reported in this article was guided by a model developed from previous archival studies, which posits certain system-level effects or

outcomes. In the present studies, we have translated these effects into analogous (or metaphorical) individual processes involving power and affiliation motive levels, perceived power and affiliation motive levels, and motive arousal. Although the results support our translations, suggesting thereby some of the individual-level processes and dynamics that may underlie these system effects, we recognize that other translations are possible; for example, in terms of emotions, attributions (e.g., Dyck and Rule 1978; Rule and Duker 1973), personal goals, and social judgment processes. Perhaps these alternative translations may be different ways of saying the same thing (see McClelland 1985 on the relations of motives and emotions, and Weiner 1985 on the relation of motives and attributions) or perhaps future research will demonstrate the superiority of one or another translation.

FUTURE STUDIES

The present research raises perhaps as many questions as it answers. What are the conditions (other than the nature of the received letter) that affect the motive imagery levels in simulated or real international communications? What are the conditions (other than power motive arousal) that increase motive distortions?[4] What conditions *reduce* motive distortion? (In pilot work, for example, we have tried—unsuccessfully—to reduce distortion by appeals to responsibility and affiliation, and even by explicitly describing the model in Figure 1 and warning participants about its effects.) Finally, what role do personality dispositions (motives, cognitions, traits, or social contexts) play in these processes? Previous work (e.g., Hermann 1980a, 1980b; Suedfeld and Tetlock 1977) suggests that cognitive complexity and authoritarianism might be highly relevant personality variables especially given Tajfel's analysis (1981, chap. 6). Such studies, aimed at identifying the situational and personality antecedents of motive distortion, would be analogous to the search for situational and personality antecedents of prejudice.

The research reported in this article was carried out exclusively with college undergraduates in a typical psychology experiment setting. As with

4. As an example, we conducted an experimental condition with a smaller group of 33 participants examining the effect of power motive arousal in conjunction with stress on highlighting responses. We aroused the power motive in the manner described above and then gave participants a short 5-minute deadline to complete the highlighting task (to increase the level of stress, the experimenter announced how little time remained to participants every 30 seconds). Results indicated a nonsignificant increase in the number of highlighted power images in the time pressure group relative to the power aroused group ($M = 15.81$ and 14.58, respectively). There was also no change in the amount of affiliation highlighted under this third condition.

any such experimental paradigm that seeks to translate real-world phenom-
ena into variables that can be manipulated in the laboratory, the validity of
these findings needs to be further strengthened, for example, by using role
playing, simulations, and further archival studies.

APPENDIX
Template of October 26, 1962, Khrushchev Letter

Dear Mr. President:

By now we have already publicly exchanged our assessments of the events around
Cuba and each of us has set forth his explanation and interpretation of these events.
I think you will understand me correctly if you are really concerned for the welfare
of the world. *Everyone needs peace* [aff]: both capitalists, if they have not lost their
reason, and all the more, communists—people who know how to value not only their
own lives, but above all else, the life of nations. We communists are against any wars
between states at all, and have been *defending the cause of peace* [aff] ever since we
came into the world. We have always regarded war as a calamity, not as a game or a
means for achieving particular purposes, much less as a goal in itself. Our goals are
clear, and the means of achieving them is work. War is our enemy and a calamity for
all nations.

This is how we Soviet people, and together with us, other peoples as well, interpret
questions of war and peace. I can say this with assurance at least for the peoples of
the Socialist countries, as well as for all progressive people who *want peace,
happiness, and friendship among nations* [aff].

I can see, Mr. President, that you also are not without a sense of anxiety for the
fate of the world, not without an understanding and correct assessment of the nature
of modern warfare and what war entails. What good would a war do you? *You threaten
us with war* [U.S. pow] but you well know that *the very least you would get in response
would be what you had given us; you would suffer the same consequences* [Soviet
pow]. And that must be clear to us—people invested with authority, trust and
responsibility. We must not succumb to light-headedness and petty passions, regard-
less of whether elections are forthcoming in one country or another. These are all
transitory things, but should war indeed break out, it would not be in our power to
contain or stop it, for such is the logic of war. I have taken part in two wars, and I
know that war ends only when *it has rolled through cities and villages, sowing death
and destruction everywhere* [war pow].

You may regard us with distrust, but you can at any rate rest assured that we are
of sound mind and understand perfectly well that *if we launch an offensive against
you, you will respond in kind* [Soviet pow]. *But you too will get in response whatever
you throw at us* [U.S. pow]. And I think you understand that too.

This indicates that we are sane people, that we understand and assess the situation
correctly. How could we, then, allow ourselves the wrong actions which you ascribe

to us? Only lunatics or suicides, who themselves want to perish and before they die *destroy the world* [war pow] could do this. But we want to live and by no means do we want to destroy your country. We want something quite different: to compete with your country *in a peaceful endeavor* [aff]. We argue with you; we have differences on ideological questions. But our concept of the world is that questions of ideology, as well as economic problems, should be settled by other than military means; they must be solved in *peaceful contest* [aff], or as this is interpreted in capitalist society—by competition. Our premise has been and remains that *peaceful coexistence of two different sociopolitical systems—a reality or our world—is essential, and that it is essential to ensure lasting peace* [aff]. These are the principles to which we adhere.

You have now declared piratical measures, the kind that were practiced in the Middle Ages when ships passing through international waters were attacked, and you have called this a "quarantine" around Cuba [U.S. pow]. Our vessels will probably soon enter the zone patrolled by your Navy. I assure you that the vessels which are now headed for Cuba are carrying the most innocuous peaceful cargoes. Do you really think that all we spend our time on is transporting so-called offensive weapons, atomic and hydrogen bombs? Even though your military people may possibly imagine that these are some special kind of weapons, I assure you that they are the most ordinary kind of peaceful goods.

Therefore, Mr. President, let us show good sense. I assure you that the ships bound for Cuba are carrying no armaments at all. The armaments needed for the defense of Cuba are already there. I do not mean to say that there have been no shipments of armaments at all. No, there were such shipments. But now Cuba has already obtained the necessary weapons for defense.

I do not know whether you can understand me and believe me. But I wish you would believe yourself and agree that one should not give way to one's passions; that one should be master of them. And what directions are events taking now? *If you begin stopping vessels it would be piracy* [U.S. pow], as you yourself know. *If we should start doing this to your ships you would be just as indignant as we and the whole world are now indignant* [Soviet pow]. Such actions cannot be interpreted otherwise, because lawlessness cannot be legalized. Were this allowed to happen then there would be no peace; nor would there be peaceful coexistence. Then *we would be forced to take the necessary measures of a defensive nature which would protect our interests* [Soviet pow] in accordance with international law. Why do this? What would it all lead to? *Let us normalize relations* [aff].

You said once that the United States is not preparing an invasion. But you have also declared that *you sympathize with the Cuban counter-revolutionary emigrants* [aff], *support them, and will help them in carrying out their plans against the present government of Cuba* [U.S. pow]. Nor is it any secret to anyone that *the constant threat of armed attack and aggression has hung and continues to hang over Cuba* [U.S. pow]. It is only this that has prompted us to respond to the request of the Cuban Government *to extend it our aid* [aff] in strengthening the defense capability of that country.

Let us therefore display statesmanlike wisdom. I propose: we, for our part, will declare that our ships bound for Cuba are not carrying any armaments. You will declare that the United States will not invade Cuba with its troops and will not support any other forces which might intend to invade Cuba. Then the necessity for the presence of our military specialists in Cuba will be obviated.

Mr. President, I appeal to you to weigh carefully what *the aggressive, piratical actions which you have announced the United States intends to carry out* [U.S. pow] in international waters would lead to. You yourself know that a sensible person simply cannot agree to this, cannot recognize your right to such an action.

If you have done this as the first step towards unleashing war [U.S. pow]—well then—evidently nothing remains for us to do but to accept this challenge of yours. If you have not lost command of yourself and realize clearly what this could lead to, then, Mr. President, you and I should not now pull on the ends of the rope in which you have tied a knot of war, because the harder you and I pull, the tighter this knot will become. And a time may come when this knot is tied so tight that the person who tied it is no longer capable of untying it, and then the knot will have to be cut. What that would mean I need not explain to you, because you yourself understand perfectly what dread forces our two countries possess.

These thoughts are governed by a sincere desire to alleviate this situation and remove the threat of war.

Respectfully,

N. Khrushchev

NOTE: This is excerpted from the original version in the *United States Department of State Bulletin* (November 19, 1973, Vol. 69, pp. 640-3), "rough/official" translation. Emphases have been added to indicate power and affiliation images. Power images are further tagged as attributed by Khrushchev to the United States, to the Soviet Union, or to war in general. Motive images were *not* underlined or marked in the version of the letter given to participants in studies 1 and 3.

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