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The Gods are Drinking Milk!

Word-of-Mouth Diffusion of a Major News Event in India

The diffusion of news tradition in past communication research highlights the key role of word-of-mouth interpersonal channels in the spread of information. This article investigates the process through which news about a mysterious event with 'divine' undertones diffused in India in September 1995. Our study suggests that the 'dying' news diffusion research tradition can be kept alive by exploring new independent and dependent variables and by using methodological triangulation.

'The news spread like a raging forest fire'
(focus group respondent, India, 1995).

'This is god's miracle. There are no two ways about it'
(telephone survey respondent, India, 1995).

'This is a hoax par excellence.'
(telephone survey respondent, India, 1995).

At about 8:30am on Thursday, 21 September 1995, when the first author of the present article was driving to an appointment in New Delhi, he saw a large crowd of people jostling around a neighbourhood Hindu temple. The individuals were carrying jugs, cups, and spoons. 'What is going on?', the author asked a passerby. 'The Gods are drinking milk', was the excited reply. 'I beg your pardon...The Gods are doing *what?*' asked the author. 'Drinking milk, drinking milk.'

The next morning the following headlines appeared in major Indian newspapers: 'A Day of Devotional Frenzy'; 'Deities "Drink" Milk in Tonnes'; 'Divine Miracle Stuns the World'; 'Idols of Shiva Family Accept Milk Offerings'; 'Miracles Claimed in Temples Abroad'. Other headlines read: 'A Gigantic Hoax: Scientists' and 'Mass Illusion, Say Scientists'. During this 24-hour period, India had become the site of a spectacular 'divine' event that gripped its 990 million people, and millions of other Indians living overseas. News that Hindu deity idols were consuming milk that was offered to them by devotees spread like wildfire in India, and among the Indian diaspora living in the US, Canada, England, the Middle East, East and Southern Africa, Australia, and other places around the world.

The nature of the news event evoked a sense of intrigue, mystery, curiosity, and debate, qualities which greatly enhanced its news value. A similar sense of uncertainty and involvement characterized the famous *War of the Worlds* radio broadcast in 1938, when 1.2 million Americans, 20 per cent of those who heard the Orson Welles broadcast, actually thought that the Martians had landed on earth (Cantril, 1940). Such mystery and uncertainty also characterized the event in a classic 1954 news diffusion study in Seattle, when many people believed that the windshields of their automobiles were being pitted by some mysterious force (Medalia & Larsen, 1958).

The present article investigates the process through which news of a spectacular news event with 'divine' undertones diffused in New Delhi, a city of 12 million people.

■ News Diffusion Research Tradition

The diffusion of news research tradition began in the 1940s with an investigation of how the news of US President Franklin D. Roosevelt's death spread among college students (Miller, 1945). This early study highlighted the important role that interpersonal word-of-mouth channels played in accelerating the spread of news (DeFleur, 1987). The diffusion of news research tradition matured in the 1960s at the same time that communication scholars (Deutschman & Danielson, 1960; Greenberg, 1964a; Allen &

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Colfax, 1968; Adams, Mullen, & Wilson, 1969) became involved in this line of inquiry (the earlier studies were mostly conducted by sociologists). Several investigations were conducted on the spread of news following the 1963 John F. Kennedy assassination (Greenberg, 1964a, 1964b; Banta, 1964; Sheatsley & Feldman, 1964). In the mid-1960s, news diffusion scholars explored the salience of word-of-mouth interpersonal channels in the spread of a news event. In several cases, interpersonal communication 'seemed very important as part of the process by which news is diffused. In other cases, it seemed all but insignificant', relative to the increasingly ubiquitous mass media channels of radio and television (DeFleur, 1987: 116; Basil & Brown, 1994).

Generalizations about the process through which news events diffused, especially in the US setting, began to emerge by the early 1970s (Rosengren, 1973: 90): '(1) the more important the event, the higher the rate and amount of diffusion, (2) the higher the rate and amount of diffusion, the larger the proportion [of individuals] that has learned about it from personal communication, (3) the more important the event, the larger the proportion that has learned the news from personal communication'. The 'daily rhythms of life—work, meals, play, sleep' determined how first exposure to a news event occurred (Allen & Colfax, 1968; Rosengren, 1987a). For instance, newspapers were more prominent as a source/channel in the morning hours, while friends and co-workers were more important for news events that diffused later in the day. Socio-demographic factors such as age, sex, religion, and social class were important in shaping the rate of diffusion (Adams, Mullen, & Wilson, 1969; DeFleur, 1987; Basil & Brown, 1994).

Scholarly activity in the news diffusion research tradition began to slow down in the 1970s, and it seemed that 'the tradition had all but run out' by the 1980s and 1990s (DeFleur, 1987: 109; Rogers, 1995; Rogers & Singhal, 1996). By 1998, some 60 news diffusion studies were completed, of which two-thirds were published prior to 1973 (Rosengren, 1987b; Basil & Brown, 1994).

DeFleur (1987) concluded an historical synthesis of this research tradition with a call for 'a great deal of further research' on news diffusion, given that interest in the topic had withered despite the fact that many interesting questions still remain unanswered. DeFleur argued that diffusion scholars should recognize that the process through which a news event diffuses is quite different from

the way that technological innovations diffuse. For a technological innovation to be adopted, an adopter must first become aware of the innovation, seek further knowledge about it, consider its pros and cons, and then change his/her attitudes and behaviours, in the multistage process of innovation-adoption (Rogers, 1995). In the case of news events, the conventional thinking is that the diffusion process is limited primarily to an individual gaining awareness-knowledge, and that there is usually no accompanying process of attitude or behaviour change (Rogers & Singhal, 1996; Rogers, 1995; DeFleur, 1987).

We argue that past news diffusion scholars, by primarily focusing on the process through which individuals gain awareness-knowledge about the news event, have subscribed to a predominant conception by which the audience members are implicitly viewed as relatively passive. Little attention has been paid to how members of the audience elaborate and construct meanings for news events. Our study of the deity milk-drinking phenomenon differs from previous research in that it views the audience members as actively elaborating on the news event in a process that influences their attitudes and overt behaviours. We expect that by looking at these dimensions, the study can provide insights into the news diffusion process which may not have been possible in previous news studies in this tradition. Further, New Delhi, India represents a unique setting for a news event diffusion study, in that almost all such past research was conducted in Europe and North America (Idid, 1981, 1983).

■ The News Event: The Gods are Drinking Milk!

On 21 September 1995 India was gripped by an unprecedented devotional frenzy. Idols of the Shiva 'family' in the Hindu pantheon, including Shiva, his consort Parvati, their son Ganesha, and Shiva's vehicle, the bull Nandi, seemingly consumed milk offered to them by devotees (A day of devotional frenzy, 1995: 1). News of this 'divine' event began to circulate in New Delhi in the very early morning hours, when most of India was asleep. Nevertheless, this news spread extremely fast. Upon hearing that the gods had broken their eternal divine fast, people began to throng to neighbourhood temples to feed milk to the gods.

At two well-known Hindu temples in New Delhi, the Hanuman and Laxmi Narayan Temples, devotees began arriving in large

numbers beginning about 5:30am, according to the head priests of these temples. By 11am, an estimated 10,000 devotees had visited the Laxmi Narayan Temple, approximately 33 devotees a minute, and over '100 liters of milk had been consumed' said the head priest, (A day of devotional frenzy, 1995: 1). News about this 'divine' event spread rapidly via word-of-mouth and telecommunication channels to other large cities like Bombay, Calcutta, Madras, and Bangalore, and to towns like Bhopal, Indore, Shimla, and Siliguri, where similar miracles were reported. News of this 'divine' *chamatkar* (miracle) soon reached the Indian diaspora residing overseas. *The Hindustan Times* (Miracle claimed in temples abroad, 1995: 1) correspondent in London described the events on 21 September 1995:

> The Vishwa Hindu Mandir [Temple], at Lady Margaret Thatcher Road in the centre of Southall, slowly filled up by 10am [2:30pm in India] today when families received calls or themselves telephoned friends and relatives in India and learned of the news that Lord Shiva, Ganesh, Kartik, and Nandi idols were actually partaking the milk offered by devotees. At 10:30am, milk in a teaspoon was put on the lips of the huge marble idol of Lord Shiva by the priest, Dr Jyoti Prasad, and to the amazement of the onlookers, the milk disappeared: 'Not a drop had fallen off from the spoon'. Since then a number of women have testified to the miracle. The priest was bewildered... At noon, the milk was also taken by the idol of Nandi and in this case the spoon was not even tilted. According to those who witnessed it, the acceptance [of milk] by Nandi was much quicker than [by] Shiva.

In India, police had to intervene outside major temples in almost every large city as crowds became unmanageable, and disputes erupted among devotees about their relative positions in a queue. The press reported that milk supplies in almost every city were exhausted by late morning, and in certain places where it was available, sellers raised their milk prices by several times (A day of devotional frenzy, 1995: 1).

Scientists and rationalists dismissed this miracle as a hoax, 'perpetrated on gullible and devout people of a deeply religious country' (A gigantic hoax, 1995: 1). Doubters argued that a collective mindset had been cleverly created whereby people 'had hyped themselves into believing that the idols were actually consuming milk, whereas in reality this was an illusion' (A day of

devotional frenzy, 1995: 1). They said that two elementary principles of physics accounted for the illusion of the deities' milk drinking: *Surface tension*, the force that acts on the surface of a liquid, tending to minimize its area, and *capillarity*, the action by which a liquid in contact with a solid surface rises or falls due to the relative attraction between the liquid molecules and the solid surface. Other skeptics saw a definite political ploy behind the divine phenomenon, criticizing the stirring of religious passions among a gullible audience by a right-wing Hindu fundamentalist political party. However, the press claimed that 'as the day wore on, more and more people appeared to be convinced that an inexplicable phenomenon had indeed taken place' (A day of devotional frenzy, 1995: 1).

Our personal observations and content analysis of the mass media coverage accorded to this news event showed that during the first 24 hours or so, the Indian news media, both print and broadcast, gave it prime importance. The story made front-page headlines in almost all major Indian newspapers on both 22 and 23 September 1995 (the daily newspapers had already been printed for 21 September 1995, when the news broke). The event made headlines in both the 21 September radio news broadcasts by All India Radio, and television news broadcasts by Doordarshan, the government-run national network television. Coverage of the news event then gradually waned, although post-mortem analysis continued for weeks thereafter. In general, the mass media coverage of this event was balanced, presenting the views of both believers and sceptics.

This news diffusion event in India displayed similarities with news diffusion events studied in the past: A spectacular event, the news of which travelled very quickly to reach a large number of individuals through a combination of mass and interpersonal communication channels. However, the news event in India differed in several respects from news events studied in the past. First, the nature and topic of the news was quite different from previous studies. The event in India was unlike a Presidential assassination or the 1986 Challenger disaster, where the basic facts were not in question at the time that the news broke. In the present case, a high degree of speculation centred around whether or not the Gods were actually drinking milk: 'How could the Gods be drinking milk?', many asked. Such speculation was very involving for the audience as they sought to give meaning to the news.

Further, the Indian news event's diffusion went beyond the usual function of creating information-awareness that has been studied in past news diffusion research. For the case in India, the news event also had a definite persuasion (attitude/belief change) and a behavioural change dimension. Upon becoming aware of this news, many people were persuaded to either visit neighbourhood temples to feed the gods, or they fed Hindu idols like Shiva at their home altar. Also, many of our respondents in India changed their beliefs about whether or not the deities consumed milk, after personally feeding the deities.

So our study of the Indian news event allows us to explore certain unique avenues of its audience effects. The present investigation centred around two main research questions.

(1) How quickly did news about the event spread? What communication channels diffused the news event in India? To what extent did individuals who heard the news tell others?

(2) What were the attitudinal/belief changes and overt behavioural effects of the news event? Were these effects different for respondents who believed, or did not believe, in the divine nature of this news event?

■ Methodology

Methods of conducting news diffusion research must necessarily differ from those employed in most other kinds of communication research. The rapid onset of the news diffusion process typically calls for a 'firehouse research' strategy, that is the implementation of quick-response data-gathering methods (Deutschmann & Danielson, 1960; Weaver-Lariscy, Sweeney, & Steinfatt, 1984; Miller, 1987; Gantz, Krendl, & Robertson, 1986; Mayer, Gudykunst, Perrill, & Merrill, 1990; Basil & Brown, 1994). If a scholar applied for a research grant, designed and pretested a survey questionnaire, trained interviewers, and then contacted a sample of the public, several months or years would have elapsed after the news event had occurred, and most respondents would have forgotten when and how they first heard about it (Rogers, 1995). Typically, the so-called firehouse research methodology involves an audience survey conducted by phone, where respondents are asked retrospective questions a few hours or days after the news event has occurred.

A version of this research strategy was implemented in India, employing methodological triangulation[1] in gathering the data: (1) Telephone interviews were conducted with a systematic probability sample of 199 Delhi residents; (2) three focus-group interviews were conducted in middle- and lower-middle-class neighbourhoods of Delhi, each with six to eight respondents including men and women, working professionals, and homemakers, ranging in age from 14 to 72 years; and (3) in-depth personal interviews with two Hindu priests in New Delhi who oversaw the devotional frenzy of devotees in their respective temples. We also analyzed the mass media coverage, including some 40 print and magazine articles, in order to gain a better understanding of the diffusion of this event.

Several fortuitous circumstances facilitated the initiation of the present research in India. The first author of the present study, who teaches and conducts research on the diffusion of innovations at a US university, was in New Delhi for work on another study when this news event occurred. The third author of the present study, a former student of the first author, returned to New Delhi from an overseas trip on the day of the event.[2]

The firehouse research strategy calls for quickly initiating the research process, usually within a day or two of the occurrence of the news event. The first author recruited his mother-in-law to be one of the four telephone interviewers. The third author of the present study, who also served as a telephone interviewer, recruited two of her neighbourhood friends, both undergraduate students at Delhi University, to serve as telephone interviewers.

■ *The Telephone Survey*

We interviewed 199 respondents in Delhi within five days of the occurrence of the event. Respondents were chosen through a systematic probability procedure from the roughly 800,000 telephone households listed in the 1994 *Delhi Telephone Directory* (the latest version then available). Approximately one in four

□ 1. Triangulation uses multiple methods of measurement, data-gathering, and data-analysis in order to obtain a many-sided perspective of the object of study.

□ 2. In fact, her parents met her at the Indira Gandhi National Airport in New Delhi and took her directly to a Hindu temple to witness this divine *chamatkar*.

Delhi households have a telephone. Households in Delhi with telephones are characterized by higher socioeconomic status (income, formal education, etc.) compared with non-telephone households. Hence, our present research results can only be generalized to the relatively more elite 25 per cent of households in Delhi.

The first telephone listing was picked randomly, and then every 4000th entry was selected. An alternate name and telephone number were also systematically selected, in case we were unable to interview a respondent at the first telephone number. Four interviewers were trained in conducting the telephone survey. Mock interviews were conducted for the interviewers to become comfortable using the survey instrument and in recording responses. Each interviewer conducted approximately 50 interviews.

The one-page pre-coded questionnaire was pretested with five respondents, and certain modifications were made to ensure a more conversational tone and to facilitate ease in recording responses. We asked when the respondent first heard about the news event, via what source/channel, how many other people they told, whether or not they believed the news, whether or not they tried to feed milk to deities, and what happened when they did so. The age, gender, and religion of the respondents were recorded. At the end of each interview, we asked an open-ended question of our respondents in order to assess their perceptions of this mysterious phenomenon.

We successfully conducted 199 telephone interviews with a sample of 200 individuals (a completion rate of 99.5 per cent; we had one refusal). Twelve per cent of the 199 interviews were replacement interviews (we were unable to reach the selected telephone number on our list, and had to call an alternative number). The interviews averaged 15 minutes in length (one interview lasted over 45 minutes). One interviewer said: 'The topic was such that most respondents did not want to stop talking. The respondents asked our opinions on the topic, gave religious sermons, and asked us if we had an explanation for the mystery'. Our respondents were very highly involved in the news event. This high degree of involvement was not characteristic of most past news events of study, although the 1963 Kennedy assassination and the 1986 Challenger disaster affected the respondents at an emotional level (Greenberg, 1964a, 1964b; Miller, 1987).

■ *Respondent Characteristics*

Forty-seven per cent of the 199 respondents were male, and 53 per cent female. Our telephone interviewers alternately selected men and women from responding households. Respondents' ages ranged from 12–75 years: Some eight per cent were between 12–20 years, 52 per cent 21–40 years, 28 per cent between 41–60 years, and 12 per cent were between 61–75 years. Nearly 87 per cent were affiliated with the Hindu religion; the other 13 per cent were Muslims, Sikhs, Jains, and others. Hindus represent 82 per cent of the people of India, and about 85 per cent of the people of Delhi.

■ *Spread of the News Event*

Research question 1 asked: How quickly did news about the event spread? What communication channels diffused the news event in India? To what extent did individuals who heard the news tell

Figure 1
Diffusion Curve for the News Event

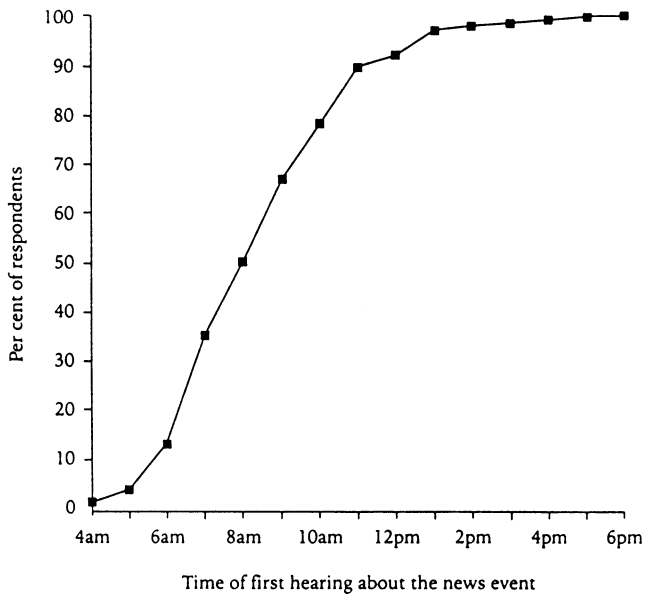

Table 1
Number of Other People
Told About the News Event

Number of Other People Told	*% (n=199)*
1. Those who did not tell anyone	40
2. Told 1 to 9 people	38
3. Told 10 to 25 people	13
4. Told 26 to 50 people	2
5. Told 51 to 100 people	4
6. Told more than 100 people	3
Total	100

others? The news that the deities were consuming milk spread very rapidly in Delhi, as evidenced by the S-shaped curve of news diffusion (Figure 1). The news began to circulate in the very early morning hours of Thursday, 21 September 1995. By 4am, two per cent of respondents had heard the news. The numbers then increased exponentially for the next few hours before tapering off by 11am, when 90 per cent of respondents had heard the news. By 7pm that evening, 15 hours after the news began circulating, 100 per cent of the respondents had heard the news. The rate of news diffusion was very rapid, quicker than most news diffusion events studied in the past (DeFleur, 1987; Rosengren, 1987a, 1987b; Basil & Brown, 1994), although diffusion of the news of President Kennedy's assassination was more rapid (Sheatsley & Felman, 1964; Greenberg, 1964a, 1964b). The speed of the present news diffusion might have been even more rapid if most of India were not sleeping when the news event occurred.

What communication channels helped speed the diffusion of this news event? The main channel of news diffusion reported by 99 per cent of respondents was word-of-mouth (the remaining one per cent reported a mass media channel). Some 73 per cent of respondents heard the news by face-to-face interpersonal channels, while 27 per cent heard of it over the telephone. Some 70 per cent heard the news from neighbours or friends, while 30 per cent heard it from relatives or family members.

To what extent did those who heard the news tell others? Sixty per cent of our 199 respondents reported that they began sharing

the news with others upon first hearing about it (Table 1). Those respondents who shared the news with others, primarily did so via word-of-mouth channels. Some 81 per cent of individuals with whom this news was shared had already heard about it, demonstrating again the very rapid speed at which this news event spread. The presence of a telephone in a household aided the quick spread of the news. However, by any measure, this news event was perceived as very spectacular, and this quality accelerated its spread.

What are the characteristics of individuals who told many other people about the news event? The more frequent talkers did not believe that the deities were drinking milk, or else were unsure (Table 2). People who actually fed the deities told more other people about the news event. Future studies of news event diffusion might use the numbers of others told (by an individual) as a dependent variable of study.

■ Attitudinal and Behavioural Effects among Believers versus Non-Believers

Research question 2 asked: What were the attitudinal/belief changes and overt behavioural effects of the news event? Were these effects different for respondents who believed, or did not believe, in the divine nature of this news event? How did the respondents react to the news about the deities consuming milk? Only 17 per cent of respondents said that they believed in the miracle when they first heard about it. Some 36 per cent were unsure; they had not made up their minds either way. Some 47 per cent said that they absolutely did not believe that the deities could be drinking milk. Non-Hindu respondents were less likely to believe in the event: Some 73 per cent of our non-Hindu respondents (19 out of 26) were 'nonbelievers'; a smaller 43 per cent of Hindu respondents (74 out of 173) were 'nonbelievers' (Table 3).

Some 74 per cent of our 199 respondents attempted to feed milk to the deities, representing the overt behavioural change dimension of this news event. Of these individuals, 81 per cent visited a temple to feed a deity, while 19 per cent fed an idol in their home (Table 4).

Some 41 per cent of those who personally fed milk to the Hindu gods were unsure about the miraculous nature of this event, 38

Table 2
Respondent Characteristics of Those Telling More or Fewer Individuals About the Event

Characteristics of Respondents	*Told ten or more people (%) (n=44)*	*Told nine or fewer people (%) (n=75)*
1. Gender		
Male	51	49
Female	49	51
2. Religion		
Hindu	83	93
Non-Hindu	17	7
3. Belief that the Deities were drinking milk		
Believed	10	27
Unsure	36	36
Did not believe	54	37
4. Whether fed milk to the Deities?		
Fed milk	66	88
Did not feed milk	34	12

Table 3
Characteristics of Believers versus Non-Believers (%)

Characteristic	*Believers*	*Unsure*	*Non-Believers*
1. Gender			
Male (n=93)	16	38	46
Female (n=106)	17	34	48
2. Religion			
Hindu (n=173)	18	39	43
Non-Hindu (n=26)	8	19	73
3. All Respondents (n=199)	17	36	47

Table 4
Belief Changes
After Personally Offering Milk to the Deities

Did the Deities drink milk?	*Believed*	*Unsure*	*Did not believe*
1. When first heard the news that the deities drank milk (n=199)	17	36	47
2. Of the 74 per cent of respondents who fed milk to the deities, how many believed that the deities drank milk before this? (n=147)	21	41	38
3. Of this 74 per cent who fed milk to the deities, how many believed that the deities consumed the offering? (n=147)	68	12	20

per cent were nonbelievers, and 21 per cent were believers (see Table 4). So 79 per cent of respondents who offered milk to the gods did so in order to either satisfy their curiosity, or to demonstrate that this phenomenon was a hoax.

Did the respondents' prior beliefs about the news event change after they fed the deities? Surprisingly, 68 per cent of respondents who fed milk to the deities said that the deities consumed the milk. Some 20 per cent said that the deities did not consume the milk, and 12 per cent said it was difficult to tell. So a belief change about whether or not the deities were consuming milk occurred for many respondents after their feeding the deities.

Were the initial believers more likely to perceive that their milk was consumed by the deities? Indeed, 82 per cent of the initial believers reported that the deities consumed the milk that they offered them (Table 5). Fifty-two per cent of our initially unsure respondents reported that the deities consumed the milk. These findings suggest that the respondents' initial expectations were generally fulfilled. Nevertheless, many (38 per cent) of the initial 'nonbelievers' whose milk was later perceived to be consumed by the deities was an unexpected outcome.

■ Interpretation with Qualitative Data

To aid the interpretation of the quantitative results, qualitative data was drawn upon: (1) respondents in three focus group interviews, (2) in-depth personal interviews with two Hindu priests, (3) the authors' observations, and (4) an open-ended question asked of the 199 telephone respondents. These qualitative data about how the news diffusion phenomenon was perceived by individuals provides further understanding of the meanings that people ascribed to the news event.

Word-of-mouth interpersonal channels, including the telephone, were overwhelmingly important in moving this news rapidly within, and beyond, India's borders. As a Hindu respondent said, 'A Christian friend of mine dropped by to say the Gods have accepted milk from me. You should also go [to a temple]'. Another New Delhi respondent said: 'I called many people. And many people called me about this'.

Only about one per cent of our respondents heard the news directly from a mass media channel/source. These respondents were not the first individuals to know about the event, unlike the case in previous news diffusion studies (Mendelsohn, 1964; Greenberg, Brinton, & Farr, 1965; Budd, MacLean, & Barnes, 1966; Allen & Colfax, 1968) in which mass media channels activated interpersonal networks. Interpersonal communication channels were dominant throughout the news diffusion process, presumably because of the spectacular nature of the event (Greenberg, 1964b).

Daily rhythm factors influenced the process of news diffusion in India, as in other news diffusion studies (for example,

Table 5
Initial Believers Were More Likely to Perceive that Their Milk Was Consumed by the Deities

Initially believed that the Deities were drinking milk	*Perceived that the Deities consumed milk when fed? (%)*	
	Yes	*No*
1. Believed (n=31)	82	18
2. Unsure (n=60)	52	48
3. Did not believe (n=56)	38	62

Deutschmann & Danielson, 1960). During the very early morning hours, when most people were sleeping, there are no radio or television broadcasts in India. The morning daily newspapers had just been printed for the day, so they could not carry news of this event until the next morning. Afternoon newspapers are published in only several large Indian cities. They covered the news event on their front page. However, the afternoon newspapers have a very limited reach in India, and their readers, mostly office workers, presumably had learned about this news event previously via interpersonal communication channels.

The process of word-of-mouth diffusion might have been further speeded had most people in India not been sleeping when the news first broke. As the priest of a middle-class neighbourhood temple said: 'Some ten to fifteen people arrived at our temple at 4am...They awakened my wife and asked that the temple be opened so that the Gods could be fed. We usually open at 4:45am'.

Socio-demographic factors affected the rate of spread of this spectacular news event. Many of the majority Hindu population of India pray to the deities daily in their homes or in neighbourhood temples. Hindu religious observation in India cuts across gender, age, ethnicity, and socioeconomic class. This commonality of religious affiliation among the 803 million Hindus in India contributed to the lightning spread of the news. As one Hindu respondent said: 'The news spread so fast because it dealt with a religious issue. Even the scientists had to tread with caution or they would face the wrath of the people'.

The long-lasting and often animated telephone interviews experienced by our surveyors indicate a strong personal involvement of the respondents with the news event. Cows are considered sacred by Hindus, and several Hindu mythological tales describe the fondness of many Hindu Gods for milk. As one respondent said: 'The Gods will drink nothing less than milk. Water will not do'. Milk and other dairy products are very important in the diet of the 400 million Hindus who are vegetarian. Contemporaneously, a right-wing political party, the Bharatiya Janata Party, was actively promoting *Hindutva* ('the Hindu spirit'), thus raising religious fervour among both India's Hindus and non-Hindus. Several Hindu respondents elaborated on this religious fervour: 'The Gods are sending a signal about the dawning of the golden Hindu era', one focus group respondent said. Another Hindu respondent, uncomfortable with the fundamentalist propaganda about *Hindutva*, said: 'It is sad that

politicians have to stoop so low to win the hearts of the electorate. It is 'baloney' that the Gods are drinking milk. It is calculated, political rumour-mongering'. The intensity of people's involvement with the news event was thus palpable in our focus group and telephone interviews, and contributed to heightening the importance of this 'divine' news event.

How did the nonbelievers feel about this news issue? One respondent said: 'I think this is nonsense. There is no miraculous basis to this phenomenon'. A 70-year-old man, who participated in one of our focus group discussions, said, 'People saw what they wanted to see'. Another focus group respondent, a 15-year-old female science student attending a New Delhi high school, asked: 'If the Gods were actually drinking milk, why did they not reject the milk of nonbelievers?' A telephone respondent reacted by saying, 'Forgive me, God [sarcastically], I will not feed you. There are so many hungry children in India. I will much rather feed them'. One New Delhi respondent said: 'The believers have exaggerated everything by a factor of ten to convince others'. A homemaker commented: 'It is an ingenious political ploy'. One 43-year-old schoolteacher summarized this sentiment best by saying, 'This is a hoax'.

How did the believers respond? A 65-year-old devout New Delhi respondent said, 'God can do anything'. A retired government official, a participant in one of our focus groups, stated, 'This is completely based on faith. If you don't believe it, you don't believe it'. A priest in a Hindu temple in New Delhi said, 'Never question the power of the almighty. Mantras and hymns can do miracles. Scientists don't understand. Stones themselves have the power to drink'. Another Hindu priest commented: 'God did not accept milk from some people. They must have come to take a test. If they were curious about God's powers, or believed in them, then the gods drank it'.

In addition to believers and nonbelievers, there were many curious but unsure individuals. As one 45-year-old homemaker said, 'I believe in it a little. But I also don't'. Another respondent stated: 'It is very difficult to believe. But now I have to, I guess. This defies explanation'. A 44-year-old professional engineer said, 'I don't know what to believe'.

The unverifiable facts embedded in the news topic enhanced its news value for the public, and heightened its socio-religious appeal. The uncertainty inherent in the claim that stone deities were drinking milk highly involved many people in India. They

talked about this event as they sought to make sense for themselves out of conflicting claims, and actually tried feeding milk to the gods in order to clarify whether or not drinking occurred.

■ Conclusions

How did the present study differ from previous news event diffusion studies? The news event in India is almost the only one studied to date that has an attitude change and a behaviour change dimension in addition to its awareness-knowledge effect. The only other news diffusion in which the dependent variable was not just awareness-knowledge of the news event, but also involved a behavioural change, is the Miller (1987) study of the 1986 Challenger disaster, which showed that six million adult Americans (six per cent of the total adult population) participated in a local memorial service for the seven astronauts who were killed.

The persuasion and behavioural change dimensions of the present news diffusion study were motivated by peoples' desires to either believe in the miracle, quell their curiosity, or to discredit the phenomenon. One means of coping with such uncertainty was to personally feed milk to the Gods. A high degree of uncertainty motivated active information seeking. An almost hysterical contagion in this news event spurred other individuals to do what certain people were doing, leading to a kind of collective behaviour (Turner & Killian, 1957; Kerckhoff, Back, & Miller, 1965; Lynch, 1996). This hysterical contagion was noted among the listeners to the *War of the Worlds* radio broadcast in 1938, when various listeners, panicked by the 'Martian landing', gathered blankets, food supplies, and their cats and other pets to take shelter in their basements or at friends' homes (Cantril, 1940). Such collective contagion was also observed in Seattle in 1954, when many people were convinced that the windshields of their cars were being pitted by a mysterious force (Medalia & Larsen, 1958). Later, it was established that the windshield pits were a natural consequence of automobile usage.

The symptoms of such collective contagion in India, such as queuing up at a temple, were highly visible. As more and more people joined these lengthening queues, the overt behaviour of feeding milk to the deities became increasingly legitimized, and the credibility of the uncertain phenomenon was boosted, as typically happens when hysterical contagion occurs (Kerckhoff,

Back, & Miller, 1965; Gehlen, 1977; Miller, Mietus, & Mathers, 1978; Lynch, 1996). Several of our respondents alluded to this hysterical contagion: 'This was devotional frenzy. People were in awe. They ran to the temples'. Another respondent agreed: 'Somebody started it. Everyone blindly followed'.

What have we learned about news diffusion from the present investigation? The nature of a news event, such as its degree of verifiability and its degree of perceived mystery, which in turn determines the degree of uncertainty that it evokes, influences its rate of diffusion. Daily rhythm factors such as the time of a breaking news event, and socio-demographic factors, especially religion, influence the diffusion rate of a news event with a religious aspect. Structural-political factors, especially the association of the news event with a vested political agenda, can spark both supportive and oppositional readings of the news event, in the present case increasing its rate of spread. Word-of-mouth channels may be particularly important in spreading a news event where uncertainty leads to a high degree of personal involvement, primarily by spurring interpersonal communication among peers as well as strangers. Word-of-mouth channels can also heighten the mystery and intrigue associated with an event in the absence of any independent validation of the facts by a credible mass media authority.

News events with a behavioural dimension can be socially contagious, leading to a chain reaction, and thereby legitimizing the collective behaviour. Perhaps future news diffusion studies might study other socially-contagious behavioural factors. Even in news diffusion studies of deaths of prominent individuals, certain behavioural dimensions could be studied: For instance, writing a personal letter to the grieving family, or attending a memorial service (as for the 1986 Challenger astronauts or for Princess Diana). Past news event diffusion studies have largely overlooked or ignored the overt behaviour change indicators of effects.

Our experience suggests that news diffusion studies can be strengthened by methodological triangulation. Most past news diffusion studies relied mainly, or entirely, on quantitative survey data. Qualitative data, used in conjunction with such quantitative data, can provide an enriched understanding of the context and content of a news event's diffusion. Our three focus group interviews, the in-depth interviews with Hindu priests, and our content analysis of the mass media coverage of this news event provided deeper insights into the Indian peoples' religious faith, excitement, anxiety, and gullibility.

The tradition of news events diffusion research need not die. Scholars need to systematically explore new independent and dependent variables in the news diffusion process, as we attempted to do in the present study. Future studies of news diffusion might investigate independent variables such as (1) the degree of verifiability of the basic facts surrounding the news event, (2) the degree of perceived uncertainty associated with the news event, and (3) respondents' emotional and personal involvement with the issue or topic. For instance, in the 1963 Kennedy assassination and the 1986 Challenger disaster, Americans experienced a 'very personal sense of loss, much like a death in the family' (Miller, 1987: 14). It may also be interesting to investigate the degree to which the penetration of the media in different societies impact on the nature and spread of a major news event.

The dependent variables in future news diffusion studies should go beyond studying the awareness-knowledge effects, by including measures of: (1) the number of other people told about the news event; (2) individual attitude change such as reflected in our respondents' pre-post beliefs about whether or not the deities were indeed drinking milk; and (3) overt behaviour change, such as our respondents feeding the deities in temples or in their homes. This behavioural action, by 74 per cent of the 199 respondents in New Delhi, convinced many individuals who were initially unsure or doubtful that the stone or metal deities drank milk. Some 52 per cent of our respondents who were initially unsure, and 38 per cent of initial nonbelievers, reported that when they fed milk to the Hindu deities, they were convinced that this miraculous event actually occurred. The social psychology of this contagious behaviour suggests that, as W. I. Thomas and Florian Znaniecki (1927/1984) suggested many decades ago, perceptions count.

■ References

A day of devotional frenzy. (1995a, September 22). *Hindustan Times*, p.1.

A gigantic hoax: Scientists. (1995c, September 22). *Hindustan Times*, p.1.

Adams, J. B, Mullen, J. J., & Wilson, H. M. (1969). Diffusion of a 'minor' foreign affairs news event. *Journalism Quarterly, 46*, 545–551.

Allen, I. R., & Colfax, J. D. (1968). The diffusion of news of LBJ's March 31 Decision. *Journalism Quarterly, 45*, 321–324.

Banta, T. J. (1964). The Kennedy assassination: Early thoughts and emotions.

Public Opinion Quarterly, 14, 769–772.
Basil, M. D., & Brown, W. J. (1994). Interpersonal communication in news diffusion: A study of Magic Johnson's announcement. *Journalism Quarterly, 71*, 305–320.
Budd, R. W., MacLean Jr., M. S., & Barnes, A. M. (1966). Regularities in the diffusion of two major news events. *Journalism Quarterly, 43*, 221–230.
Cantril, H. with Gaudet, H., & Herzog, H. (1940). *The invasion from Mars.* Princeton, N.J: Princeton University Press.
DeFleur, M. L. (1987). The growth and decline of research on the diffusion of news, 1945–1985. *Communication Research, 14*, 109–130.
Deutschman, P. J., & Danielson, W. A. (1960). Diffusion of knowledge of the major news story. *Journalism Quarterly, 37*, 345–355.
Gantz, W., Krendl, K. A., & Robertson, S. R. (1986). Diffusion of a proximate news event. *Journalism Quarterly, 63*, 282–287.
Gehlen, F. L. (1977). Toward a revised theory of hysterical contagion. *Journal of Health and Social Behaviour, 18*, 27–35.
Greenberg, B. (1964a). Diffusion of news about the Kennedy assassination. *Public Opinion Quarterly, 28*, 225–232.
Greenberg, B. (1964b). Person to person communication in the diffusion of a news event. *Journalism Quarterly, 41*, 489–494.
Greenberg, B., Brinton, J. E., & Farr, R. S. (1965). Diffusion of news about an anticipated major news event. *Journal of Broadcasting, 9*, 129–142.
Idid, S. A. (1981). The death of a king: How one Malaysian society knew about it. *Media Asia, 8*, 62–66.
Idid, S. A. (1983). Sadat's death: A study of new diffusion in a Malaysian community. *Media Asia, 10*, 225–232.
Kerckhoff, A. C., Back, W. B., & Miller, N. (1965). Sociometric patterns in hysterical contagion. *Sociometry, 28*, 2–15.
Lynch, A. (1996). *Thought contagion: How belief spreads through society*. New York: Basic Books.
Mayer, M. E., Gudykunst, W. B., Perrill, N. K. & Merrill, B. D. (1990). A comparison of competing models of the news diffusion process. *Western Journal of Speech Communication, 54*, 113–123.
Medalia, N. M., & Larsen, O. N. (1958). Diffusion and belief in a collective delusion: The Seattle windshield pitting epidemic. *American Sociological Review, 23*, 180–186.
Mendelsohn, H. (1964). Broadcast and personal sources of information in emergent public crises: The presidential assassination. *Broadcasting, 8*, 147–156.
Miller, D. C. (1945). A research note on mass communication. *American Sociological Review, 10*, 691–694.
Miller, D. L., Mietus, K. J., & Mathers, R. A. (1978). A critical examination of social contagion image of collective behaviour: The case of the Enfield monster. *Sociological Quarterly, 19*, 129–140.
Miller, J. D. (1987). *The impact of the Challenger accident on public attitudes toward the space program.* Washington, D.C: Report to the National Science Foundation.

Miracle claimed in temples abroad. (1995b, September 22). *Hindustan Times*, p.1.
Rogers, E. M. (1995). *Diffusion of Innovations*. New York: Free Press.
Rogers, E. M., & Singhal, A. (1996). Diffusion of Innovations. In M. J. Salwen, & R. Stacks (Eds.), *An integrated approach to communication theory and research* (pp. 409–420). Mahwah, N.J: Lawrence Erlbaum Associates.
Rosengren, K. E. (1973). News diffusion: An overview. *Journalism Quarterly, 50*, 83–91.
Rosengren, K. E. (1987a). Conclusion: The comparative study of news diffusion. *European Journal of Communication, 2*, 227–255.
Rosengren, K. E. (1987b). Introduction to a special issue of news diffusion. *European Journal of Communication, 2*, 135–142.
Sheatsley, P. B., & Feldman, J. (1964). The assassination of President Kennedy: A preliminary report on public reactions and behaviour. *Public Opinion Quarterly, 37*, 625–627.
Thomas, W. I., & Znaniecki, F. (1927/1984). *The polish peasant in Europe and America.* New York: Knopf/Urbana, IL: University of Illinois Press.
Turner, R. H., & Killian, L. M. (1957). *Collective behaviour*. Englewood Cliffs, N.J: Prentice-Hall.
Weaver-Lariscy, R. A., Sweeney, B., & Steinfatt, T. (1984). Communication during assassination attempts: Diffusion of information in attacks on President Reagen and the Pope. *Southern Speech Communication Journal, 49*, 258–276.

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