Research Article

Reading Out of the "Idiot Box": Same-Language Subtitling on Television in India

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Abstract

Same Language Subtitling (SLS) is the idea of subtitling the lyrics of song-based television programs (e.g., music videos), in the same language as the audio. Situated in a literature review of subtitling, this article describes the first-ever implementation of SLS on a TV program of film songs, specifically for first-language literacy. Chitrageet, a weekly 30-minute TV program of Gujarati film songs, was telecast across Gujarat state in India, with the lyrics subtitled in Gujarati. We discuss the results of the pilot study to test the effectiveness of SLS of film songs on the reading skills of out-of-school people. With limited exposure to SLS within a telecast period of 6 months, SLS was found to make an incremental but measurable contribution to decoding skills, across the group that generally saw the subtitled TV program (as compared to those who did not). Viewer testimonies further strengthen the case for SLS beyond quantifiable improvement, as a simple and economical idea for infusing everyday television entertainment with reading and writing (or scriptacy*) transactions. The potential of SLS in India and other countries is enormous. The idea is especially powerful in popular culture for scriptacy skill improvement, motivation of nonscriptates, increasing viewers' exposure and interaction with print from early childhood, and increasing media access among the deaf.*

Introduction

A nation's literacy rate is determined, to a great degree, by the definition of literacy and the method used to measure it. Countries struggling to achieve higher rates often tend to lower definitional bars, which then makes progress that much easier. India is no exception, and this raises simple but unanswered questions. How many of India's literate people—literate according to the Census—can read the headlines of a newspaper?

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Assuming this number is substantial (and it is), how can we help masses of people, who the Census counts as literate but who cannot tackle the most routine reading tasks, advance to a stage of basic functional literacy and possibly beyond? We propose a method that relies on subtitles on television to teach basic literacy.

In the first section of this article, we take a critical look at the statistical information on literacy in India, focusing on the limitations of the literacy rate and the actual levels of literacy that the literacy rate masks. This is followed by a literature review of subtitling forms related to SLS and their implications for language learning and media access among the hearing impaired. The third section discusses the first-ever implementation of SLS on TV, specifically for mass reading practice. The relationship between SLS and reading skills is analyzed quantitatively. In conclusion, we argue that SLS is not just simple, effective, and economical but also can be implemented across different languages and states in India and even other parts of the world.

India's Literacy Rate

The Indian Census[1] defines a literate as "a person aged 7 and above who can both read and write with understanding in any language. A person who can only read but cannot write is not literate." This definition is almost identical to UNESCO's definition of literates/illiterates.[2] In practice, however, what the Census methodology enumerates is an individual household member's report of the literacy/illiteracy status of all the members within the household. As a development indicator, the literacy rate is thus based on weak methodological grounds. By design, the Census has no consideration of literacy levels (see Wagner, 1990 for a definition of literacy levels as implied presently). Drèze & Loh (1995) discuss the biases that may creep into the Census operation, which can exaggerate the achievements. However, because the same basic approach is used every decade, Census figures do provide a good measure of relative progress. Thus, India has made noteworthy progress in the literacy rate during the 1990s. In 1991 the literacy rate (ages 7+) was 52.2%. According to the 2001 Census (Bose, 2001), India is home to 1.027 billion people with a literacy rate (7+) of 65.4% (54.2% female, 75.9% male). Between consecutive census operations, a gain of 13.2% from 1991 to 2001 in the literacy rate is the highest recorded in independent India. In numbers, the 7+ population comprises 562 million literates and 296.2 million nonliterates. Although India has the dubious distinction of having a third of the world's nonliterates, policy makers are optimistic that the country is well on the path to "a sustainable threshold of 75% literacy by 2006" (NLM, 2000a).

While the optimism is not entirely unfounded given an average decadal growth of 8.5% since the 1950s, a crucial question that policy making has not grappled with adequately is: How literate are India's so-called literate? Literature on literacy in India is silent on this basic question even though one does hear periodic laments that the ability to sign one's name often qualifies a person to be labeled as literate. Nationally no data are available on literacy levels. One understands the exigencies of a census as massive as India's. However, sample surveys that could build a correspondence between literacy rates and literacy levels have, to our knowledge, not been conducted. Nevertheless, references to literacy levels with terms such as neo-literate and semi-literate are commonplace in most policy documents and writing on literacy in India. A definition of these terms is less forthcoming. One grasps intuitively their reference to people who are literate for the Census but not literate enough to be able to use their skills for certain basic functions of literacy. We call them early literates for ease of reference.

Over time literacy has come to be shrouded in layers of ideological meanings. Capturing these meanings in a single definition, even if it were possible, is beyond the scope of this article. From the foregoing discussion it should be obvious that, in this article, a narrow conceptualization of literacy is implied, a conceptualization that focuses on the ability to decode and encode text. Therefore, "scriptacy" is preferred over "literacy," to convey our limited usage. This is not out of respect for a

1. Hereafter, "Census."

2. UNESCO's definition of an illiterate: "Someone who cannot, with understanding, both read and write. A person who can only read but not write, or can write but not read is considered to be illiterate." Checked February 24, 2004. (http://www.isop.ucla.edu/eas/statistics/literacy.htm.)

reading of literacy in its variety of meanings, especially those that see at its core a process of empowerment. In fact, we see in the mass ability to read and write the making of a fertile terrain for self, group, and social processes of empowerment to take root. In the words of Raymond Williams (1975: 131), "[T]here was no way to teach a man to read the Bible which did not also enable him to read the radical press."

A recent study by ORG-CSR (2003)[3] conducted in rural villages across five states—Uttar Pradesh, Madhya Pradesh, Bihar, Rajasthan, and Gujarat—confirms the low skill attainment levels of many literates in India. To share some key findings on reading, print awareness, writing, and functional aspects of ability with the written word in Hindi:

1. 68.2% perceived themselves to be literate. Based on their reading of an extremely simple paragraph from textbooks at 2nd to 3rd grade level, the field surveyors classified the sample as: 12% who can read with ease, 36.3% who made mistakes or read with a range of reading difficulties, and 51.7% who could not read at all.
2. Faced with a square block of Hindi text printed centered on a square piece of paper with no other graphical indicators of beginning, ending, or page orientation, 37.4% could not hold the printed matter in the proper orientation for reading. After this was shown (or known), 42.5% could not point to the end of text. Half the sample could not move their finger to delineate the left to right direction of print and a nearly equal proportion could not move from the end of one line to the beginning of the next line immediately below.
3. Only 37.5% could write their full name correctly, 15.1% could write it partially or with mistakes, and 47.4% could not write it at all.
4. Reading the bus board, one of the most common encounters with print in village life, was, by their own admission, not possible for 51.9%. Self-reports on other functional aspects inform us that 56% could not read a newspaper, 54.8% could not read letters, and 56.7% could not write a letter themselves.[4] (Self-reports tend to understate inability. These figures for nonperformance would presumably be higher if the skills were actually tested.)

This raises the critical question of what is meant by a national literacy rate of 65.4% as declared by the 2001 Census. Since this figure is close enough to the self-reported literacy rate of 68.2% in the ORG-CSR sample, with some liberty, the following preliminary conclusions may be permitted, not so much with an eye for precision but as a perspective on trends. If a demonstrated "ability to decode the simplest of passages were operationalized" as the definition of literacy, not necessarily with understanding, then only 10–15% would be fully literate. If this definition is relaxed further to include "anyone who can decode portions of the simple passage with difficulty and/or mistakes," the literacy rate would increase to 45–50%, still considerably lower than what the Census would have us believe. The "early literacy rate," if such a term were permitted, would be 35–40%. In other words, most of the 75–80% literate by the Census could be thought of, more fittingly, as early literate. Thus, India's aged 7+ population has an estimated 85–128 million fluently decoding people, 300–343 million with early decoding skills, and 429–472 million people who cannot decode simple passages.

The second set of ORG-CSR findings above are a reflection of the utter lack of print exposure in the lives of 50% of India's rural population. While these findings may not be surprising to those familiar with Indian village life, print exposure and its link with decoding abilities are understudied aspects of literacy research in India. An important factor that binds the mammoth millions to early literacy skills is, arguably, lack of "print encounters" or exposure to print since early childhood. In a vicious cycle, lack of exposure limits people's opportunity to upgrade their early literacy, which further entrenches lack of print availability, and poor print availability in turn contrib-

3. Independent study commissioned under a national project being coordinated by Brij Kothari. Reading ability in the study refers to decoding ability only, as comprehension was not tested. The battery of tests performed was in Hindi. Except for Gujarat, the other states are Hindi speaking. Gujarati is similar to the Devanagari script used in Hindi. Hindi is taught compulsorily in schools in Gujarat. The sample size from Gujarat was 19.1%.

4. Those reporting performance of a literacy function with some degree of difficulty were considered to be capable of performing that function.

utes to lack of print exposure. One way to break out of the low print interaction cycle is to create print-rich environments that can improve literacy.

The third and fourth sets of findings paint a bleak picture of functional literacy. Despite the fundamental criticism of a simplistic view of functional literacy (Levine 1982), we believe it helps to look at national literacy rates through the lens of functional literacy rates defined, for example, as rates for name-writing ability, bus-board (schedule) reading ability, letter reading/writing ability, and newspaper reading ability. In an increasingly information-driven world, we might as well view the capacity to negotiate and create meanings via the written word as the sixth—albeit learned—sense and the lack of it a disadvantage. The disadvantage can be mitigated to some extent through access to skills that one does not possess oneself. However, it is our position that mediated interaction with the written word nevertheless confers a considerable disadvantage vis-à-vis ability for direct interaction. This disadvantage can be in terms of self-confidence, self-worth, and ultimately, potential for the expansion of personal freedom and life enrichment.

With all the energies of agencies such as the National Literacy Mission (NLM) converging on the nonliterate for over a decade (Athreya & Chunkath, 1996, provide an overview of literacy campaigns in India), policy making has only recently woken up to the realities of early literacy. On an unprecedented scale, the NLM recently launched its Scheme of Continuing Education (CE) with a strong emphasis on CE centers, including village-based libraries (NLM, 2000b). As necessary as CE initiatives are, they depend on an adult's self-motivation to visit the centers or libraries on a sustained basis. Experience cautions us that one cannot expect contact with libraries and CE centers to be frequent, sustained, or lifelong. Financial implications of setting up and running centers also limit their unbridled expansion to the roughly 640,000 villages in India. Hence, without a richness of literacy transactions in everyday life, the reality of over 400 million early literates is possibly one of skill constancy at lower than fully functional ability. Disuse of decoding skills at early levels may even lead to gradual erosion and even relapse into nonliteracy.[5] Abadzi (1994) contends that skill retention and relapse are utterly understudied phenomena worldwide. Relapse finds regular mention in several influential policy documents (NLM, 2000c: 17): "Learning skills acquired by neo-literates during the short span on the literacy campaign are at best fragile. There is a genuine danger of neo-literates regressing into partial or total illiteracy unless special efforts are continued to consolidate, sustain and possibly enhance their literacy levels" (see also Report of the Expert Group, NLM, 1994: 40). In-depth studies of skill erosion are rare. Roy & Kapoor's (1975) early study of skill retention was not followed up with other studies in India. Despite the limited understanding that exists about relapse and skill erosion, it is generally accepted that the decoding skill levels of a significant proportion of literates in India are low enough for them to be acknowledged as early literates.

Television programming in India includes a gamut of audio-visualized songs (e.g., film, folk, pop, devotional, and other song categories, including music videos) in all major languages. The importance of Same Language Subtitling (SLS) on these songs for lifelong reading and writing skill improvement on a mass scale is not difficult to see, and in this paper we explore this further. But is SLS different from karaoke or the captioning of television programming in North America and Europe?

Same Language Subtitling (SLS): An Overview

SLS refers to the idea of subtitling motion media in the same language as the audio. The audio track is reproduced verbatim and in a synchronized manner. SLS needs to be distinguished from Same Language Transliteration (SLT). An example of SLS is video in Hindi, subtitled word for word in Hindi (which uses the *Devanagari* script). The same media, subtitled in the Hindi language using the Roman script, is not SLS but SLT.[6] However, both SLS and SLT may be useful for scriptacy as long as the script is meaningful for the viewing neo-semi-scriptates (literates). Several cousins for the concept of SLS already exist

5. Relapse is a reversion into nonliteracy. Skill erosion refers to the loss of skills that may or may not lead to relapse.
6. Recently, MTV India and Channel V have been showing karaoke-style Hindi film song programs subtitled in Hindi language, but transliterated in the Roman script, catering to the passion for lyrics among English-reading urban viewers.

in literature and popular discourse, each rooted in a context of practice. When transported to the Indian context, the implications for practice blur the focus toward which SLS has been primarily directed: to promote scriptacy skill improvement in the first language among early scriptates.

Japan has given us *karaoke,* which translates as "empty orchestra"—the music is present but the voice is missing or subdued on the audio track (to be filled up by the viewers/listeners as they sing along with the subtitles). Around the world, karaoke has evolved as a technology for singing entertainment (Mitsui & Hosokawa, 1998), with good scriptacy skills being a requirement for participation. While there is emphasis on verbatim and synchronous subtitling, karaoke can be of the SLS or SLT variety. Holobow et al. (1984), Lambert (1986), and Danan (1992) use "bimodal input" for the idea of SLS, an expression rooted in foreign language learning and perhaps not very intuitive in popular discourse. More intuitive but less common is Udo Jung's use of "intralingual subtitling" cited in Borrás & Lafayette (1994) or Vanderplank's (1990) mention of "uni-lingual" subtitling. While these are close semantic approximations of SLS, their academic flavor is a compromise on simplicity of expression, which may be useful for wider understanding and acceptance of the idea. The term that finds widest usage in North America and the United Kingdom, but no less counterintuitive, is closed-captioning (CC).

In North America, closed-captioning is the most common form of subtitling, originally developed to improve access to television and video programming among the hearing disadvantaged (Boyd & Vader, 1972). CC does not have a binding relation between the audio track and the language of subtitling. Rather, the relationship of the CC language is with the language that a hearing-disadvantaged viewer is expected to read and understand, which in the United States mostly happens to be English, and to a considerable extent, Spanish. The term CC takes its name from the technological solution that was found. In 1990 it was mandated by the Federal Communications Commission (FCC) that all TV sets 13 inches or larger that were sold or manufactured in the United States after July 1, 1993 had to have a built-in CC decoder, giving viewers the option of revealing or hiding the otherwise "closed" captions. Technologically, it is now possible to offer a menu of several scripts/languages (e.g., CC1–CC4); however, most television programming carries at best only one CC and exceptions such as CBS's "60 Minutes" carry CC1 in English and CC2 in Spanish (for further information on CC, see Robson, 2001). Because TV sets in India do not carry this option at present, all subtitling, including SLS, can only be open subtitling. Thus, subtitling solutions in India, unlike in the United States, have to appeal to a broad viewer base to survive, even thrive, under the dynamics of commercial television. CC in North America can afford to usurp screen space by simply cutting the image with a black band on which white text is displayed. Hearing-disadvantaged people's gain offsets any loss of image space and the hearing can leave the CC switched off. In CC the speaker is often identified by careful screen placement of the captions. Certain sounds are rendered in captions, such as "knock on door" or "telephone rings." CC assumes scriptate viewers and can be satisfied with flat subtitling, i.e., without the need to highlight words individually in time with the audio. Keeping in mind average reading speeds, CC sometimes resorts to paraphrasing and not verbatim captioning, although as Jensema et al. (1996) point out for different types of programming, most CC is near-verbatim.

Literature on Subtitling

Four factors mark the literature on motion media subtitling that is in the same language and script as the audio.[7] The bulk of this literature: (a) is based on research in North America or Europe; (b) refers to subtitling in languages that use the Roman script; (c) discusses the use of CC for making motion media more accessible to the deaf and hearing impaired, including the educational contribution it can make to this constituency; and (d) explores the language learning potential of closed-captioning and subtitling among high-scriptate and hearing learners, mostly in a second language, and to a limited extent, in their first language. Although there are occasional references to scriptacy gain from subtitling (e.g., Rogner, 1992), these are inevitably in the context of second-language scriptacy among people

7. Motion media refers to video, television, film, and multimedia software that has video. Translation subtitling is not reviewed presently.

who are already scriptate. Studies on the use of subtitling in the same language for first-language scriptacy among the hearing, if they do exist, are rare.[8]

Since 1980, CC has been implemented in the United States for the hearing-disadvantaged. Although considerable attention has been devoted to the implications of CC among this group, only a selection of the literature is reviewed here because our primary focus is on early scriptates with no hearing disability. Benefits to the hearing-disadvantaged will no doubt occur in India from SLS along the lines experienced in the United States. Soon after the implementation of CC on U.S. television, Murphy-Berman & Whobrey (1983) found that CC enhanced the hearing-disadvantaged children's ability to grasp the emotional content of a children's television program. Teenage students with reading levels ranging from 1st to 3rd grade benefited from CC when it was integrated with formal instruction in terms of sight vocabulary retention, motivation, and reading instruction (Koskinen et al., 1986).

Peters (1979) cites studies from as far back as the early 1960s suggesting that the text in commercials contributes to the reading ability of many pre-school children. The earliest systematic study of the contribution of subtitling to language learning that we could find was by Holobow et al. (1984). Subtitling in this study refers to reading text along with audio (and not as a part of video). Conducted among English speaking (L1) elementary school children at advanced levels of training in French (L2), they found that "reversed subtitling" (audio in L1 and subtitling in L2) was the most beneficial, although "bimodal L2 input" (audio and subtitling in L2) also resulted in positive gains in terms of vocabulary and comprehension of verbal information in L2. Standard subtitling (audio in L2 and subtitling in L1) was by far the least beneficial condition. Several other studies confirm the value of bimodal L2 input for intermediate-advanced levels of L2 learners (Lambert, 1986; Danan, 1992; and d'Ydewalle & Pavakanun, 1997).

Reversed subtitling promotes comprehension skills in L2 because the L1 audio is quickly processed and understood, leaving more time for L2 processing of text. Standard subtitling promotes dependence on L1 text, leaving less time for engagement with L2 audio. While agreeing with the outcome, d'Ydewalle & Pavakanun (1997) offer a different explanation. According to them, the processing of subtitling is the major activity as compared to the processing of the audio. Reversed and bimodal subtitling are more effective for second-language learning than standard subtitling because they require the major processing (subtitles) to be in L2. Bimodal input is overwhelming for the beginning L2 learner because of low familiarity with audio and text. The problem of low scriptacy levels in India is better informed by the experiments with advanced L2 learners because early scriptates are generally highly advanced L1 speakers. Thus, the audio part of the bimodal L1 input is easily and rapidly comprehended, and in songs even anticipated, freeing up more time for L1 text processing.

Some of the early experiences of television or video subtitling in the same language were for: (a) teaching reading in English to hearing students with reading difficulties by using CC on TV (Koskinen et al., 1985; Goldman & Goldman, 1988) and (b) ESL learning with the help of video recordings of TV programs with Ceefax subtitles (Vanderplank, 1988, 1990). Subtitles for the hearing disadvantaged also make television programs accessible to the hard-of-listening, i.e., people with comprehension difficulties in English (Vanderplank, 1990). To maximize learning, Vanderplank suggests some form of "instrumental motivation" (motivation with a specific goal in mind) so that viewers actively attend to the subtitles and "take out words and phrases." Drawing on Krashen's (1982, 1985) theoretical work in second language learning, Vanderplank argues that television programs with unilingual subtitling recreate at least some of the necessary conditions for language acquisition, "low anxiety and large amounts of comprehensible input just above the learner's level of linguistic competence."

While instrumental motivation may promote more conscious engagement with the subtitles, its

8. TV5, France's televisual effort to reach an international and diverse francophone viewership, uses SLS on much of its programming to promote French language learning and access to content/audio/accents. While not intended specifically for first-language literacy, TV5 probably contributes to reading improvement among early readers with access; however, confirmation in (English) literature coud not be found. (Thanks to a reviewer for bringing TV5 into the discussion.)

absence is not disastrous, as d'Ydewalle et al. (1991) argue. The simple but powerful conclusion they arrived at by using the pupil-center corneal reflection method,[9] is that reading subtitles is automatic and this automatic reading does not require prior experience or habit formation with subtitles. In their experiment, subtitles were shown in the same language as the audio. If the subtitles are there, they will be read and simultaneously processed with the audio in a complementary manner (see d'Ydewalle & Gielen, 1992 for a review). More recently, Jensema, Sharkaw et al. (2000) used similar eye-tracking methods with three deaf and three hearing adults, essentially confirming d'Ydewalle's important conclusion, if stated somewhat differently, that the addition of CC turns television engagement from a dominantly picture-viewing activity to a dominantly reading activity. The eye-movement and fixation patterns of the deaf and the hearing are marked by great similarity in response to both regular and CC programming. Interestingly, it was found that the deaf participant in the experiment, whose first language was not English, spent more time than others on the captions. Furthermore, at higher caption speeds, all the subjects spent more time on the captions. In a subsequent study with 23 deaf adults, Jensema, Danturthi et al. (2000) discovered that the subjects looked at the captions 84% of the time and only 14% at the video picture, 2% being outside the viewing area. Since an average American watches around 30 hours of television per week, Jensema, Danturthi, et al. (2000) comment that CC can turn this into a weekly 25 hours of gazing at print with positive implications for reading abilities. However, neither Jensema, Danturthi et al.'s, nor d'Ydewalle et al.'s extensive experiments were conducted among non- or early-scriptates. The contribution of SLS to literacy or language acquisition among early-scriptate adults or children remains unexplored.

As already pointed out, many explorations of subtitling are for foreign or second-language learning, in which case, the experiments tend to focus on subtitles and audio in different languages. However, the availability of CC for the deaf in North America has spawned a number of studies that employ readily available English programming with English subtitles in ESL instruction. CC can promote the development of sight vocabulary among adults with reading difficulties while sustaining their motivation for learning (Bean & Wilson, 1989). Garza (1991) found CC to be useful for bridging the gap between an English language learner's competence in reading (which tends to be better) and listening comprehension. Similarly, Huang & Eskey (1999) confirmed vocabulary acquisition and improvement in general and listening comprehension from CC on TV (CCTV). Markham (1999) provides support for improvement in second-language listening word recognition from videos with audio and subtitles in the second language. Remarking that most previous studies had investigated the effects of subtitling on comprehension in reading and listening, Borrás & Lafayette (1994) concluded that subtitling in the same (foreign) language might also contribute to speaking ability.

Neuman & Koskinen (1992) argued for the power of CC for incidental ESL learning. Their study found that watching CC television programs with the purpose of developing science concepts resulted in significant vocabulary gains among minority students, as compared with watching the same programs without CC or reading along with an audio recording of the text. Klinger (1993) critiques the generalizability of the findings to all ESL students, rather than only advanced ESL students while taking umbrage at certain methodological issues. Neuman & Koskinen's (1993) response—and we tend to agree—is that Klinger misses the essential finding that without formal instruction, through a process of incidental learning, bilingual students acquired word knowledge simply by watching CCTV. Even without one's conscious orientation for language learning from CCTV, it can be a "cognitively active experience."

From the literature on implicit learning, Saffran et al. (1997) cite two issues that impinge on incidental language acquisition: (1) people are able to subconsciously induce certain aspects of patterned stimuli and (2) the frequency of stimuli in the environment is coded in subconscious memory and becomes an important determinant of the process of pattern induction. Their ingenious method then explores incidental learning of an artificial language

9. The pupil-center corneal reflection method precisely determines eye movement and fixation on the screen (see Jensema et al., *2000 for a description).*

among adults and children. They conclude that passive exposure to linguistic phenomena leads equally well to the induction of at least some types of linguistic structures among adults and children. This process is "so natural that it can proceed in the absence of any instructions or external motivation to learn." By the same token, can regular exposure to SLS on TV—a form of auralized print exposure—induce incidental acquisition of scriptacy skills, not just among the early scriptate, but also nonscriptate children and adults? Possibly, and from a number of perspectives, song-based programming already existing on television is arguably the best genre for the infusion of reading into everyday life in India.

Why Same-Language Subtitling of Songs?

In landmark studies, Bradley & Bryant showed that children with reading difficulties were "strikingly insensitive to rhyme and alliteration" (Bradley & Bryant, 1978, 1983). The rhyme hypothesis states that "children with good rhyming skills may be better equipped for learning to read" (Goswami, 1999). Rhyming skills constitute a crucial aspect of the more robust concept of phonemic awareness, that is, a conscious awareness that words and speech are made up of phonemes or sounds (for literature reviews of the concept and how it can be developed, see Lewkowicz, 1980; Snider, 1995; Stahl et al., 1998). There is remarkable consensus on the following conclusion: phonemic awareness in children is reciprocally linked to reading and writing development. It can be developed at a pre-reading stage, usually with explicit instruction in sound-based or text-sound correspondence activities. The rhyme hypothesis suggests that songs that are rich in rhymes may well contribute to phonemic awareness. Although a range of instructional activities to enhance phonemic awareness have been discussed in the stated reviews, the incidental contribution of songs for reading preparedness among pre-reading children or adults has surprisingly not been explored in-depth, although Snider (1995) makes a brief mention of nursery rhymes.

Yopp & Yopp (2000) suggest several classroom activities for the development of phonemic awareness. Song-based activities are included, but only with explicit instructions that focus on rhyme generation and syllable manipulation. Similarly, there are a number of articles on the practice of using songs in reading skill development (Harp, 1988; Barclay & Walwer, 1992; Kolb, 1996; Jalongo & Ribblett, 1997; Towell, 1999/2000), and specifically, phonemic awareness (Yopp, 1992; Smith, 2000). However, few studies have systematically explored the incidental learning relationship between songs and phonemic awareness without explicit instruction in sound manipulation, especially in the pre-reading and preschool phases. Bryant et al. (1989) posit that the memorization of nursery rhymes can promote consciousness of the phonological basis of speech. Since many pre-reading strategies to develop phonemic awareness encourage sound perspicuity and the strengthening of sound-text associations, SLS of songs rich in rhyme and alliteration and highlighting techniques that create clear sound-text associations may incidentally lead to greater phonemic awareness among viewers.

Indian television viewing conditions are more often marked by: (a) group/family viewing, (b) on small black-and-white TV sets, (c) with not very rich audio output, (d) in an ambience with a fair amount of background noise. In these conditions, Vanderplank's earlier-mentioned observations buttress the rationale for scriptacy skill practice through SLS of song-based television programming. Ambient noise and low-quality audio output conspire to make many hearing television viewers "hard of listening." The passion for film songs and the enormous interest in knowing, confirming, clarifying, and memorizing song lyrics provide a powerful instrumental motivation from within. In other words, SLS of songs enables viewers to "take out" song lyrics.

Songs come in a variety of speeds. Jensema et al. (1996) analyzed the verbatim captioning speed of lyrics in 22 English music videos, finding that it ranged from 60 to 311 words per minute. The speed of lyrics in Indian film songs tends to be significantly slower. The audio part of these videos can generally be considered to be comprehensible input, assuming it is in a known language. The subtitling aspect constitutes comprehensible input at varying levels of scriptacy competence, depending on the viewer's reading ability. Thus, the process of "taking out" lyrics poses different challenges for people with different levels of scriptacy competence. When the comprehensible input is just above the learner's level of scriptacy competence, it may be expected to contribute most to skill improvement and at the same level or below, there is reinforcement through drill-and-practice. Reading skill is further

aided by the inherently repetitive nature of songs and practice sustained through enhanced entertainment. Even for the scriptate, comprehensible SLS input below their level of scriptacy competence is at least entertaining if not educational because it enables them to sing along and know the song lyrics. As long as attention is paid to the text and it is at least periodically or partially comprehensible (e.g., one is able to read only the refrain or one or two words from a single song-phrase), gains in reading competence are possible.

The lyrics of popular songs are widely known, at least partially. The ability to anticipate song lyrics, thus, provides even the very early scriptate with a memory aid to read the subtitles and confirm what is read, besides freeing up more time for mental processes to concentrate on the text. Finally, reading practice with SLS can occur in an extremely low-anxiety context with immediate feedback. Low anxiety can stem from the fact that the confirmation of what has been read—or not read—occurs concurrently, in a manner that is entertaining, integrated with everyday life, taking place in the home environment, and with a minimal notion of performance evaluation.

Same-Language Subtitling: Potential to Practice

As we have seen, there is ample literature, albeit in North American and European contexts of second-language learning and media access among the deaf, to converge on the potential of SLS for scriptacy in India. An exploration of the link between SLS and first-language scriptacy is new scientific territory (whether in North America, Europe, or elsewhere). Suggestions of this link and the underlying rationale for the implementation of SLS in film and nonfilm songs have been discussed elsewhere (Kothari, 2000, 1999, 1998), but without concrete evidence on its possible contribution to scriptacy skill improvement. Still, early field tests that gathered viewers' opinions in eight sites covering urban slums, villages, a railway station, and a school for the deaf, found that SLS of film songs is popular with scriptate and early scriptate viewers alike (Kothari, 1998). Acceptance among viewers possessing a range of scriptacy ability is a crucial finding if the idea is to succeed on television. SLS is popular among the scriptate because the concept allows them to sing along, know the song lyrics, and even "hear" the songs better. Early scriptate viewers voiced the same reasons, and in addition, make references to the challenges and advantages that SLS provides in terms of reading skill affirmation. Despite general acceptance of SLS as an enhancer of entertainment, the first evidence that it could also contribute to decoding skill improvement came from a controlled experiment with primary school children from disadvantaged backgrounds (Kothari et al., 2002). The experimental group that saw songs with SLS evinced greater improvement in decoding ability than the group that saw the same songs without subtitles or the control group that saw no songs at all. The improvement, as expected, was incremental, but more importantly, consistent in the experimental group.

Same-Language Subtitling of Songs on TV in Gujarat

Building on earlier research, the present study differs from it in two important respects. It explores the impact of SLS (1) on the reading skills of adult early scriptates and (2) in a natural setting. Because of the natural setting, we yielded some degree of control over exposure. However, one gains an understanding of the SLS effect on reading skills without resorting to forcible exposure. We approach an analysis of the relationship of SLS to reading from the perspective of decoding skill improvement resulting from exposure and a qualitative feel for people's expressions regarding this relationship.

Methodology

From June 1999 to April 2000, SLS was added to an existing weekly 30-minute program of Gujarati film songs—*Chitragee*—telecast all over Gujarat state in prime time, by Doordarshan Kendra (DDK), Ahmedabad. The color of the Gujarati subtitles were designed to change in perfect timing with the songs to facilitate even a nonscriptate's identification of the individual words being sung. Gujarat, thereby, became the first Indian state where SLS was implemented expressly for the purpose of scriptacy.

A two-group experimental design was used, with pre- and post-test. The experimental group (EG) consisting of those early scriptates who claimed to see *Chitrageet* regularly and the control group (CG) of those early literates who claimed otherwise. The experimental period of exposure to SLS was 6 months, June–December 1999, during which 25 ep-

isodes of *Chitrageet* were telecast. At 20 minutes of SLS per 30-minute episode time, the maximum possible exposure to SLS during the study period was roughly 8 hours. A pretest of decoding skill was conducted in May 1999 for EG and a post-test in January 2000. For the CG, the pretest was conducted in June 1999 and post-test in February 2000. A version of the reading test used in Kothari et al. (2002) and described in Kothari & Joshi (2002) was used for both pre- and post-tests without modification.

The test consisted of three blocks of reading matter. The first text block (Exercise 1 or Ex. 1) had 40 single syllables covering all the common syllables used in Gujarati.[10] The second text block (Ex. 2) had 20 two-syllable words, covering the range of syllables and syllable-vowel combinations. The third block (Ex. 3) comprised 20 three-syllable words. If a participant was unable to read any whole word, he/she was asked to read individual syllables in that word and partial credit was given for the syllables read correctly. The test was designed to measure small changes in decoding skill, besides being quick and simple to administer. The reading of every text block was timed.

The sample for the study was drawn from four villages each in Ahmedabad and Surendranagar Districts of Gujarat State[11] and two slums in Ahmedabad city. The conditions laid out for inclusion in the EG were:

- Out of the 40 syllables in Ex. 1, those able to read 35 or less,
- Not attending or expected to attend formal or nonformal schooling during the duration of the experiment (i.e., June–December, 1999),
- Moderate to high viewing of the *Chitrageet* program, with the assumption that regular *Chitrageet* viewers were likely to repeat this pattern during the duration of the experiment.

The number of people tested from the villages and slums mentioned was 1,500. Of these, 521 people were found to have met the three criteria at the time of the pre-test and, thus, comprised the EG. During the post-test, 358 of the 521 people in the EG were reachable. Those in the EG kept a record of three weekly song programs that they might have seen, including *Chitrageet.* To ensure the reliability of this information, field researchers gave participants monthly forms with biweekly follow-ups.

The CG was selected from Nepalpura village, Thasra Block, Kheda District. The penetration of cable television (satellite channels) is high in Nepalpura; therefore, the viewership of Doordarshan's *Chitrageet* and other programs is low. The entire aged 7+ population of the village (2,148 people) was tested. People were included in the CG based on the first two conditions for the EG but replacing the third condition by those who report very low or practically no viewing of the *Chitrageet* program. Of the 260 qualifying individuals in the CG at the time of the pre-test, 121 were reachable for the post-test conducted during February 2000. The final EG was found to have a mean school grade level of 3.6 as compared to 5.3 for the CG. On other factors, such as representation by caste, sex, age, and TV ownership, the groups were comparable.

Pre-test Results

In the EG, the average score for Ex. 1 was 25.1 for males and 23.1 for females. In the CG the same scores were 31.5 for males and 29.6 for females. Scheduled caste and scheduled tribe (SC/ST) subjects in the EG scored 23.3 (Ex. 1), compared with 25.5 for the general caste groups. SC/ST and general caste subjects in the CG scored 30.6 and 30.5, respectively. Importantly, pre-test scores revealed that the CG did better than the EG on all the exercises (Table 1).

On average, in Ex. 1 of 40 monosyllables, the EG read 24.1 syllables correctly as compared with 30.6 in the CG. A similar pattern was observed in the other exercises of two- and three-syllable words. For example, in Ex. 2 of 20 two-syllable words, on average 10.1 words were read correctly by the EG, compared with 14.7 by the CG. The CG's better performance in the pre-test is also reflected in the time taken for each of the exercises. These differences can be explained by the fact that the average formal education, indicated by the level of school grades of the CG, was higher.

Improvement

To understand the possible contribution of SLS to decoding skills, the average improvement (post-test

10. Gujarati, like other Indian languages, is better characterized as having a syllabary.

11. A state is divided into administrative districts and these in turn are divided into administrative blocks, panchayats, *and villages.*

Table 1. Pre-test Scores

		Exercise 1		Exercise 2			Exercise 3		
Group	**Number**	**S/40**	**Time**	**S/40**	**W/20**	**Time**	**S/60**	**W/20**	**Time**
EG	358	24.1 (7.9)	94 (52)	26.8 (10.1)	10.1 (6.7)	77 (48.7)	42.6 (14.0)	9.6 (6.7)	93.3 (58.9)
CG	121	30.6 (5.7)	51 (31.0)	33.1 (8.8)	14.7 (5.5)	36 (26.7)	50.1 (15.0)	14.2 (6.0)	42.2 (34.9)

Note: Time is given in seconds. S/No. = syllables read correctly out of numbers; W/No. = Words read correctly out of number. Values in parentheses are SDs.

Table 2. Post-test Minus Pretest Scores for Experimental and Control Groups

		Exercise 1		Exercise 2			Exercise 3		
Group	***N***	**d_S**	**d_Time**	**d_S**	**d_W**	**d_Time**	**d_S**	**d_W**	**d_Time**
EG	358	4.4	−5.1	3.5	2.4	−2.8	4.1	2.6	0.1
CG	121	0.4	7.2	0.9	0.5	4.6	2.9	0.9	9.5
t value		8.112	−3.107	4.454	5.386	−2.127	1.091	3.886	−1.558
p <		0.00*	0.00*	0.00*	0.00*	0.03*	0.27	0.00*	0.12

Note: d = difference at Syllable (S) and Word (W) level and Time (T) taken.
** Significant differences between groups ($p < 0.05$).*

Table 3. Correlations (Both Groups Combined)

		Correlation Between Improvement and Pre-test Scores	Correlation Between Improvement and School Grade
Exercise 1	Syllable	−0.216 (p = 0.000)	−0.017 (p = 0.707)
	Time	−0.396 (p = 0.000)	−0.027 (p = 0.555)
Exercise 2	Syllable	−0.366 (p = 0.000)	−0.075 (p = 0.101)
	Time	−0.253 (p = 0.000)	−0.060 (p = 0.192)
	Word	−0.274 (p = 0.000)	−0.029 (p = 0.527)
Exercise 3	Syllable	−0.361 (p = 0.000)	−0.023 (p = 0.619)
	Time	−0.181 (p = 0.000)	−0.040 (p = 0.377)
	Word	−0.253 (p = 0.000)	−0.005 (p = 0.912)

minus pre-test scores) in the EG was compared with that in the CG for all the three exercises (Table 2).

A *t*-test shows that the average improvement in scores in the EG, when compared with the CG, is greater for all the syllable-, word-, and time-level indicators. Most of the group differences are also statistically significant ($p<0.05$), except for Ex. 3 at the syllable level and time taken. As noted, the groups were not entirely comparable in terms of pre-test scores and school grade level, thus requiring an analysis of covariance (ANCOVA). The correlations in Table 3 indicate the extent to which the covariants —pre-test scores and school grade level—explain the variance in the improvement scores. Table 4 presents the F-values.

Pre-test scores were found to correlate with improvement for all exercises. However, these correlations are not strong enough to explain group differences in improvement emerging from exposure to SLS. As the F-values of Table 4 show, statistical significance can be attributed to the greater improvement in EG for Exercise 1 (syllable level), Exercise 2 (syllable and word levels), and Exercise 3 (word level).

Table 4. ANCOVA: F-values

Improvement scores		School Grade	Pretest Score	Group Difference
Exercise 1	Syllable	9.814 ($p = 0.002$)	10.862 ($p = 0.001$)	52.992 ($p = 0.001$)*
	Time	11.195 ($p = 0.001$)	95.128 ($p = 0.000$)	0.062 ($p = 0.803$)
Exercise 2	Syllable	6.086 ($p = 0.014$)	65.228 ($p = 0.000$)	8.697 ($p = 0.003$)*
	Time	3.940 ($p = 0.048$)	23.041 ($p = 0.000$)	18.274 ($p = 0.000$)*
	Word	13.904 ($p = 0.000$)	49.173 ($p = 0.000$)	0.002 ($p = 0.969$)
Exercise 3	Syllable	9.397 ($p = 0.002$)	79.648 ($p = 0.000$)	0.097 ($p = 0.755$)
	Time	12.391 ($p = 0.000$)	17.040 ($p = 0.000$)	12.358 ($p = 0.000$)*
	Word	8.854 ($p = 0.003$)	39.253 ($p = 0.000$)	0.034 ($p = 0.854$)

*Note: * Significant differences between groups ($p < 0.05$).*

In both the EG and CG, improvement in reading was not linked to sex, caste, or age. However, there seems to be a link between formal school grade and improvement in the EG. Generally, people who had formal education between grades II-VIII, demonstrated an average improvement of 4.7 on Ex. 1, compared with an average of 3.4 for those who had no education or education only up to grade I. People with a range of early scriptacy skills seem to benefit from SLS. The higher up they are on the early decoding skill ladder, the more pronounced their improvement. Another factor that one would expect to impact improvement in decoding ability is exposure to SLS. Of the 25 subtitled *Chitrageet* programs shown during the study period, the average number of *Chitrageet* programs seen in the EG was 13. However, the variation in exposure within the EG was generally too small to expect any definitive conclusions.

Same Language Subtitling in Viewers' Words

The 25 episodes of *Chitrageet* generated 2,570 postcards from viewers.[12] As offered on the program, every letter sent to the program was reciprocated with a printed copy of the song lyrics of the most recent episode. A fresh letter was required for the lyrics of any subsequent episode, with no restriction on the number of such letters. This approach generated rich qualitative data since many of the letter-writing viewers shared their opinions on the program along with their request for lyrics. Additionally, a database of viewer addresses was generated and used for sending *Chitrageet Na Bol* (or *Chitrageet's Lyrics*), a booklet containing all of the 65 songs from the first 13 episodes. We discuss the qualitative data generated by the postcards, to the extent possible, in people's own words.

A total of 2,060 postcards were analyzed, of the 2,570 received.[13] Only one-fifth of the postcards were received from urban areas. Most postcards came from males in rural areas. Female writers constituted 13% from rural and 15.4% from urban areas (13.4% overall). Postcards to *Chitrageet* most frequently made a request for the lyrics of songs (37.2% of responses, or 74.7% of respondents; see Table 5). Next in frequency were comments that expressed liking for *Chitrageet* (30.4% of responses; around 60% respondents). Direct appreciation for subtitling was made by 16.9% responses and 34.0% respondents. Indirectly, however, a total of 15.4% responses, or around one-third of respondents, appreciated the change from an educational perspective, without specifically mentioning subtitling. Indirect expressions of support are listed in Table 5 in descending order of frequency. The top four indirect types of comments on subtitling clearly link the addition of subtitling to literacy and the literacy campaign, despite the fact that this was not overtly stated on the program. SLS being good for school-going children also received more than an occasional mention. So does writing, even though reading is mentioned twice as often. That people saw SLS as helping with pronunciation came as a surprise. Overall, around two-thirds of the postcards

12. A postcard is the cheapest and most common form of correspondence in India, especially in rural areas.
13. The last 510 postcards were not coded and, thus, not included in the analysis. The overall picture, however, is not expected to change.

Table 5. Postcard Comments

Comments	Count	Responses (%)	Respondents (%)
Direct Comment on Subtitling			
We like the subtitles	701	16.9	34.0
Did not like the subtitles	3	0.0	0.1
Indirect Comments On Subtitling's Contribution to Learning			
Good for literacy or literacy campaign	139	3.3	6.7
Improves reading ability	131	3.2	6.4
Good for early literates and adults	93	2.3	4.5
Would like effort to continue	72	1.7	3.5
Good for school-going children	67	1.6	3.3
It is an innovative idea/experiment	61	1.5	3.0
Improves writing ability	52	1.3	2.5
Improves pronunciation	20	0.5	1.0
Request for Lyrics			
Would like *Chitrageet Na Bol* (lyrics)	1,434	34.6	69.6
No comment, only address given for getting lyrics	106	2.6	5.1
Other social benefit			
Good for hard of hearing and deaf	7	0.1	0.3
General Comments			
We see and like *Chitrageet*	1,115	26.9	54.1
Request for showing new songs	149	3.5	7.2
Total responses	4,148	100.0	201.3

Note: n = 2,060 postcards.

appreciated the addition of SLS, directly or indirectly. In contrast, only 3 postcards expressed dislike of the subtitles. In percentage of responses or respondents, this is negligible and a comment on the overwhelming acceptance of SLS among scriptate and early scriptate viewers.

An analysis of the written comments was made manageable by selecting the first 15 postcards from every district in the state that were seen to enrich differently our understanding of the relationship between the program and its viewers. Of course, in the case of some districts, this number proved to be elusive, either because there were not many postcards to begin with or the similarity in content made the search for differences more difficult.

Early Scriptate Writers

Writing quality, especially handwriting, is the strongest indicator available that the program did in fact reach a good number of early scriptate people. To illustrate, a viewer writes in support of the subtitles saying, "It is very important to show the songs in numbers," making no distinction between numbers and words. A woman copied diagonally on the postcard some lines from a song, followed by a question, "Please let me know if it is OK to write words in any direction." Curiously, several people had filled out the boxes for the pin code (zip code) text such as *dal bhaat khaajo* (do eat lentils and rice). Inconsistent handwriting, spelling mistakes, and uneven and unexpected flow of characters were observed in several instances. This led a native Gujarati language expert, who coded all the postcards, to conclude that roughly one-third of the letters were written by early scriptates and two-thirds by comfortably scriptate people.

Group Viewing and Reading

The language in a good number of postcards is reflective of group viewing. Preferences for songs and requests for song lyrics often come from a group, family, and even the neighborhood. Thus, responding to one person's requests, such as sending lyrics, often directly reaches out to a group. Subti-

tling adds to the group TV viewing tendency by enabling the group to sing or read along. Says Linanbai from the village of Kutch,[14] "We watch the program together and really enjoy reading the words that you show on TV." Mohanlal Pandya from Sabarkantha makes a reference to group reading, "Five of us especially enjoy getting together and reading *Chitrageet Na Bol.*" Similarly Bhimji Parmar comments, "Everyone at home gathers to see *Chitrageet* and we enjoy reading the words that you show along with the songs." A boy from Kheda explains how the program impacts his family, "Everyone at home loves to read and listen to songs, especially my mother. My brother has learned to read from *Chitrageet.* Because he is now able to read the words, understand the meaning, he is able to learn new words." Several others claim that they themselves or others in their family had learned to read by watching *Chitrageet.* While one cannot infer from this that nonscriptate people become scriptate simply by watching *Chitrageet* over a 6-month period, one cannot but be buoyed by people's perceptions that SLS helps them transition from nonscriptacy to scriptacy. More likely, these people had some rudimentary skills to begin with, which SLS helped to reactivate and consolidate.

Integration of Education and Entertainment

Film songs occupy a sizable chunk of popular entertainment. The interest in film song lyrics is apparent from the great number of postcards, not only requesting lyrics but also appreciating their availability on screen and later in print. "The difficulty faced earlier in singing *Chitrageet* songs is now eliminated," wrote Dipakkumar Hirvaniya from Banaskantha, a district with the lowest literacy rate in Gujarat. From the same district, Bhavesh Joshi commented, "We enjoy *Chitrageet* very much, now that you show the lyrics of songs through visual and audio media. We are able to grasp the songs clearly. My son watches the program intently and with excitement because he is able to read the songs." Manhar Makwana, a folk singer from Amreli, points out the importance of marrying songs and reading, "Many in the villages are still illiterate so while singing these songs they attempt to read and are able to read easily." Folk songs, especially of the *Raas Garba* variety of song and dance celebrating the love between Radha and Krishna, have a firm place in Gujarati culture and cinema, with a strong following in rural Gujarat. Says Sevantiben Gamit from Surat, "We enjoy *Raas Garba.* We also join you in singing and dancing. Also along with it we write down the *Raas Garba* shown on the program."

The addition of subtitles to film songs seems to create a context for interactive singing while encouraging some people to write down the lyrics as they appear on screen. Because television viewing occurs in groups already, the scriptacy transactions that subtitling creates at an individual level are further strengthened by group influence. Kanabhai Adedra sends this comment from Porbandar, "We not only enjoy watching *Chitrageet* but also enjoy reading it. We also like this scheme of sending the lyrics. Many women in our village are illiterate and we are training them to read and write. These women really like *Bhajans* and *Garbas.*" While some have incorporated subtitling and lyrics into their nonformal literacy programs, others hint at using this resource in cultural festivals. For example, Premji Barot from Kutch writes, "I have studied till Class II. Please continue to send me the lyrics. I will sing the songs during *Navratri* and *Dandiya* programs." An indication that subtitling makes reading inseparable from entertainment is offered by an anonymous letter to Doordarshan, "Many want to participate in Gujarati music but don't have a collection of songs. These people can now copy the songs, practice them and prepare for music competitions."

The *Chitrageet Na Bol* booklet of songs sent to letter writers left a lasting impression on viewers. Bhavnagar's Babubhai Bheda requested more copies for himself, adding, "Will you send the booklet to all the students in our school?" Mukeshbhai Mochi, also from Bhavnagar wrote, "We don't want one book. We want five since we are selling the book in our village." The demand for the book is not surprising, given its association with the world of glamour and movies. Its longevity is assured by the inclusion of "ever-green" songs. Barad Rakhman, clearly an early-scriptate viewer from Junagadh, as judged from the handwriting, wrote, "We like to read the lyrics more than seeing the program. It encourages the illiterate to study." He goes on to give the address of a nonscriptate woman, requesting

14. Place references are to the district from where the postcard was sent, unless otherwise stated.

that a booklet of songs be sent to her. The booklet's importance for viewers can also be gauged by the fact that a cable operator in Rajkot publicized the *Chitrageet* program locally by putting on cable his own spot, mentioning that a booklet is sent if one writes to the program. According to his letter, "Because of *Chitrageet Na Bol,* the popularity of *Chitrageet* has increased and it has increased more recently because of my ad." Some people admit that letter writing to TV programs is a foreign activity for them. But the temptation of getting the booklet has drawn them to it.

Several postcards expressed an interest in extending the *Chitrageet* program into pedagogic spheres. A letter reads, "I, Keshava, village Vadod, district Surendranagar, taluka Vadhvan am working to impart literacy to 10–12 illiterate people. I have found your program to be extremely useful. I have passed Class X and am working in my family business." Not fully satisfied with reading skill improvement, Thakersibhai from Bhavnagar asks, "Please inform us how one can teach people outside school. Many have learned to read from TV but what can we do to understand and learn more? I intend to work for adult education in my village. Whom should I contact for information so that I can contribute to the literacy mission?"

Films and People

The deep influence of films on people's lives is apparent from many of the postcards. Interestingly, the language when communicating about films changes in some cases from Gujarati to Hindi, albeit in the Gujarati script. This is quite likely the effect of the dominance of Hindi cinema in India, and by consequence, Hindi's acceptance in Gujarat as the *lingua franca* when talking talkies. From postcards requesting songs with the power to reunite estranged couples to questions directed at film stars, the *Chitrageet* program received many postcards steeped in people's passion for films. Some even go as far as offering to share their own songs and stories, hoping that these could be immortalized on screen. Others seek guidance on becoming actors, directors, and so on to catapult them to instant fame.

Children and Same-Language Subtitling

SLS on *Chitrageet* resonated well with children. Like adults, they too made the link with learning, even though the program was not overtly branded as educational. A joint letter from students in Class II, IV, and VI states, "We love to read and learn the words we don't know. The program is like a Gujarati class. We also love to memorize the songs." Patan's Dipeshkumar Parmar, studying in Class V, comments, "Because the lyrics are written, it helps me tremendously in Gujarati." In a similar vain, Vimal Shikotra from Kutch writes, "Many in our Dhodka primary school have learned to read better by watching *Chitrageet* on TV." Group communication among children is very strong, mainly due to the school network. If one student receives the booklet of songs, others in the school come to know about it very quickly, as can be surmised from the request of Dharmendrasingh Solanki. "Many children in my village have received the songbook. I have read it and like it so please send me a copy too." Group activities linked to the songbook are also reported, such as by this child from Vadodara, who writes, "I use the songbook to lead song groups in the school and in the playground."

Because subtitled *Chitrageet* is viewed in a home environment, it encourages and complements learning processes within the family. Ritesh Bhabala sends this from Rajkot, "I am a Class X student. My sister was illiterate but gradually she has learned to identify words. I am confident that with your *Chitrageet* and my efforts, I will be able to teach her to read and write." From Bharuch, Sanjikumar Patel writes, "My younger brother and sister are learning to read. If you send *Chitrageet Na Bol,* they would really enjoy reading it," reiterating the complementary force of SLS.

Parents and Same-Language Subtitling

Several parents send their personal observations regarding their children's interaction with subtitled *Chitrageet.* Nitaben Mehta writes from Sabarkantha, "I don't know about others but my two children, one of whom is in KG and the other in Class II, identify the letters from the strip you release with *Chitrageet* on TV." Her observation points to the potential of SLS for reading preparedness among prereading children and for parallel skill reinforcement among beginning students. A hint of how SLS can integrate scriptacy transactions in everyday life, even during the holidays and without external exhortations by parents and teachers, can be found in the words of Mayurkumar Samrath from Junagadh. "Our son Keval and daughter Chandni and the chil-

dren from the neighborhood have developed a habit of watching the program and reading. The program was a blessing, especially during the vacations." Parental approval of SLS, such as the following from Banaskantha's Jayaben Joshi and Anand Jashwant Chauhan, were common. They wrote, respectively, "Because the lyrics are written on the screen, it is easy for children to read and they also understand the meaning of songs," and "Our children, Rajesh Sangita, Sanjay, Harpal who are studying in primary school are learning to read and write from *Chitrageet.*" Parental observations are particularly pertinent because they live close to their children and are therefore experts on their children's development.

Direct observations of children by their own parents are supplemented by people's observations of other children in the village or community. "It was heartening to see young children from Class I and II working with their illiterate mother and father, uncle and aunt, trying to impart *akshar gyan* [knowledge of letters] by writing down the song lines on a slate or by singing from the book [*Chitrageet Na Bol* which was mailed]. The book has been adopted as syllabus material since it is natural and there is already a tradition of singing songs in all families," says Amrutlal Soni from Sabarkantha. Rameshbhai Rathwa joins in from Kheda, "Children from the neighborhood get together to see the program and the house is full." A master's student of English comments, "This will help young children read faster. The coming together of reading, writing, and hearing is very beneficial."

Teachers' Views on Subtitled Chitrageet

From the foregoing it is obvious that people bring their educational situation and interest to bear on what is otherwise purely an entertainment program. Several teachers came out in support of the idea. Mohanbhai Jadav, principal of Sari Primary School in Banaskantha had this to say, "This would help the semi-literate and primary school children in the age group of 6–14." Indumati Joshi, a teacher from Banaskantha wrote, "Because of the words written in *Chitrageet* it is easier for children to listen to the songs and understand the words." Rajkot's principal at the Sanskar Vidyalaya, H. N. Makwana, wants to build activities around the program. "Many children are singing these songs in the school after seeing them on TV. I believe that it will be good for their overall development if the children are made to write and sing some selected songs from these in class." "Often song lyrics are not clear and the titles clarify these. They help in adult education and give reading practice to primary school children," says Jagdishkumar Ramanlal Panchal, a primary teacher in Ahmedabad. From this selection of comments, it seems that local educators are responding positively to the sudden appearance of a literacy resource in people's homes and at least are thinking of using it in their own ways. Although this was not thought of in our project, to fully tap the potential of SLS, one could build synergies between TV entertainment with pedagogic events in schools or elsewhere. This is difficult to do with many film songs given their moral overtones, but patently possible with folk and other types of songs with deep cultural roots.

Chitrageet *and Nonformal Learning*

The use of *Chitrageet* in nonformal adult education is also reported. For example, an adult literacy center coordinator from Kheda sends the following, "Your effort is proving useful in the adult education classes in our village. We like the idea of writing at the bottom of the screen. We show the program in our adult education classes." Some people are motivated by themselves to use the new resource in their environment toward informal learning. Manoj Matang from Kutch says, "In my house all the elders wait eagerly for the program and read the lyrics. Now me and my friends are working to impart literacy skills to the illiterate. We distribute the songs that you have sent and people read them." Some others inspired to impart adult literacy are Amrutkumar Thakor and friends who declare, "We have put the *Chitrageet Na Bol* to good use. We call the children and elders from the neighborhood to show *Chitrageet* and also give them the *bol* to read."

Pre-school Children and Teacher Skill Upgrading

The perceived educational benefits of subtitling, by teachers, go beyond primary education and adult literacy. "Children from our *Aanganwadi* [crèche] . . . [long list of names provided] we all get together and read *Chitrageet Na Bol* with excitement. If you can give us a collection of *Chitrageet,* we can use it with children on a regular basis," requests Pravin Saraiya from Amreli. From the same district Anirudh Dave

writes, "I teach KG children. Please send me *bhajans* or songs at the earliest." Another teacher says, "I use the songs you sent to teach singing to children in the age group of 1–5 years." Jasvantibhai Sathvara from Gandhinagar finds some improvement in himself. "I work as a primary teacher in my village. By understanding the words and sentences in *Chitrageet* I have benefited a lot. By reading, my vocabulary and spellings have improved and this helps me with students in school." Language skill upgrading among teachers is an increasingly relevant issue in the Indian context given the entry of a large number of para-teachers with very basic education (e.g., as low as eighth standard in many cases), through the implementation of schemes such as the Education Guarantee Scheme.[15]

Mass Impact

The addition of SLS created a link between existing popular television programming and education that clearly did not exist earlier. Entertainment was not compromised but enhanced in the process. While most postcards convey a sense of the learning processes sparked by the presence of subtitles, there are a few who obviously make somewhat exaggerated claims, like the one by Asha Mistry from Patan, "Everyone in the village has learned to read by watching *Chitrageet.*" The reality of mass impact is, nevertheless, supported, for example, by the postcard from Rakeshkumar Prajapati of Patan, "You will be glad to know how much your *Chitrageet* has benefited us. Many illiterate and semi-literate in our village learned to read and write and we are very happy for this." Amreli's Labhubhai Hora writes, "Due to your *Chitrageet Na Bol,* by reading song lyrics there has been an increase in our learning and especially in literacy. We get together and watch the songs and read; many in our neighborhood have learned to read." "My mother and many other illiterate people have also learned to read with *Chitrageet,*" says Ganeshkumar Parmar of Navsari. Jayantibhai Dafda writes from Amreli, "Through the literacy mission and *Chitrageet* many people in our neighborhood have learned to read and now they can even sign for themselves, there is no need to use thumb impressions. *Chitrageet* teaches us to read and write." The implication of these comments is that there is not just mass impact on the early scriptate, but also on the nonscriptate. However, these comments on mass impact are not testimonies from individuals on how they benefited themselves.

Personal Testimonies of Improvement

Direct statements on how individuals may have benefited can be found in the following examples. From Dinesh Lakhmanbhai Balasara of Porbandar comes a short and laboriously written comment (as judged from the handwriting) that simply says, "I am able to read due to the program." Manjula Rathod from Ahmedabad writes, "I have learned to read a bit by watching your program. To learn to read better, me and my friend would like to get the lyrics. I have studied up to Class IV and am a daily wage earner." Five early-scriptate men sent a rather unusual letter from Jamnagar. Each wrote a few lines appreciative of the printed lyrics. In addition, one wrote that *Chitrageet* had helped him learn difficult words; another mentioned that it had improved his knowledge of "*hrasva-i, dirgha-ee*" [common spelling errors with the vowels, 'i' (as in 'bit') and 'ee' (as in 'beet')]. A third commented that they always showed up at their friend's place at 7:30 p.m. to watch *Chitrageet* together.

The complementarity of SLS with existing learning has already been implied in some of the comments shared. Surendranagar's Juvanbhai Jadav mentions this directly: "*Chitrageet* helps us a great deal in learning to read and I have learned to write letters in adult education." That the program can take someone beyond the point where formal education left off, is implied in Girirajsingh Natubha's remark from Jamnagar. "When it is *Chitrageet* time, we gather around the TV. We really like the words that come printed. I have not studied after Class II so now I am able to match the words and read easily."

Speed of reading or writing is an important criterion by which literacy ability is often judged in popular and classroom evaluations. That subtitled *Chitrageet* should be used by some people to improve their writing speed should not come, therefore, as a surprise. The emphasis on speed can be seen in Rajeshkumar Solanki's observation from Panchmahal. "Due to this program we are learning to read fast, the illiterate too are learning to read

15. See http://www.education.nic.in/htmlweb/edu_guarantee.htm for information on EGS. Checked February 24, 2004.

from this program. Now we are also practicing to speed write as the letters go by in *Chitrageet* while others read them aloud." Similarly, Kailasben Prajapati from Anand remarks, "*Chitrageet* has increased our writing speed."

Enhanced Entertainment for All, Media Access for the Deaf

Importantly, the infusion of an educational component simply by the addition of subtitles does not seem to detract from the entertainment value of the earlier unsubtitled *Chitrageet.* As R. Niranjan reminisces: "When we see the lyrics of the song on screen, it reminds us of our childhood. Just as we used to read advertisements on the walls as children, we slip into our childhood and with the same enthusiasm feel like reading *Chitrageet.* It not only attracts the illiterate, but it also has a magnetic charm for the literate." If adults claim to discover their childhood, the comments of Kutch's Manoj Matang seem to imply that the deaf, in a manner of speaking, discover their hearing. "I have a deaf sister. When you started *Chitrageet* I asked her to pay attention to the word strip. Since then she has started observing it carefully and remembers it. I take her test with a paper and pen. She used to be able to write a few words but now she can write half the song." If there is one group that is expected to immediately see the import of SLS, it is the hearing disadvantaged.

Conclusion

There is tremendous gratification for a beginning reader in being able to read. SLS of songs can make the reading experience effortless, enjoyable, and unjudged, and give instant feedback. One's ability to anticipate the lyrics along with the simultaneous nature of feedback through audio enables a steady stream of successful reading events. With incipient scriptacy skills as a point of departure, SLS can encourage an ever-growing literate identity, something that would be harder to achieve with pure print transactions. A positive attitude toward one's reading abilities may be easier to create with SLS because the experience of failed reading encounters is minimized. A nonscriptate person may also start noticing certain grapheme-phoneme associations through commonly known or frequently ocurring words. This may be useful in overcoming predispositions that could sometimes put reading and writing beyond one's grasp. SLS, thus, creates a nonthreatening reading environment in which to embark upon, confirm, practice, and enjoy one's developing reading skills.

As can be judged from viewers' comments, SLS promotes a culture of reading and writing. The direct beneficiaries of SLS are children enrolled in school who can get reading skill reinforcement at home, child and adult school drop-outs who have picked up rudimentary skills but are not able to sustain or improve upon them due to the near absence of print sources in their lives, and adults who have attended or are attending nonformal education classes. To what extent SLS pulls nonscriptates into a world of scriptacy is an as-yet unexplored question. But research on print exposure suggests that SLS's marriage with entertainment may not just motivate nonscriptates for literacy but also begin an untutored process that continues to contribute to skill development throughout life. Nonscriptates may see in the acquisition of scriptacy skills the possibility of enhanced entertainment such as being able to sing along and know song lyrics. These very reasons are responsible for the widespread popularity of SLS, including scriptate viewers.

Earlier, in a controlled experiment with school children we found that exposure to SLS'ed songs improves decoding ability (Kothari et al., 2002). The present study provides the first evidence of the contribution of SLS to the decoding skills of adults. The outcomes are all the more meaningful given that SLS was implemented on television. The findings of both these studies are consistent in pointing out that viewing film songs with SLS leads to improvement in decoding ability. Improvement occurred in a short span of 6 months or less, in both studies, despite the fact that the frequency of exposure to SLS was low. Within the limitations of a short-term study, the improvement can only be seen as incremental, quantifiable improvements in relation to a specific reading test. For more meaningful forms of improvement to become apparent, such as a person moving from being able to read part of the syllabary to being able to read a newspaper, SLS would need greater integration with popular entertainment over a sustained period. Still, indications of SLS's ability to provide print exposure in people's lives is discernible from people's testimonies.

From a cost perspective, SLS on television is attractive. For instance, a national television program

like *Chitrahaar* in Hindi, which is mainly watched in rural areas, has a viewership of around 150 million people. Of this number, 75%, or 112.5 million, could directly or motivationally benefit from SLS. The annual cost of adding SLS to *Chitrahaar* is around $25,000, resulting in an annual per-person cost of $0.00022 to give 30 minutes of weekly reading practice and/or print exposure. In contrast, national literacy programs for early scriptates have typically budgeted at least $3 per person per year, achieved no more than 5% participation of early scriptates, and struggled to identify approaches that could sustain interest.

SLS was originally conceptualized for the hearing early scriptate, to make reading practice a by-product of enhanced entertainment. However, the use of SLS for the hearing disadvantaged is obvious. Strategically, an idea that serves the purposes of two important constituencies—the early-non-scriptate and the hearing disadvantaged—while also appealing to another constituency (the hearing literate), has the potential of wider acceptance and greater sustainability. By extension, we suggest that CC efforts for the hearing disadvantaged in North America and Europe would make greater inroads into media if they catered simultaneously to the hearing, at least in some programming spaces (e.g., music videos). Of course, this would imply a complete redesign of the look and feel of CC for wider appeal, including for the entertainment enhancement of the hearing disadvantaged.

However simple, effective, and inexpensive as the idea may sound, proponents of SLS have been knocking on the door of national and state policy makers since early 1997. Gujarat is the first state where SLS was implemented on TV. Despite active lobbying at the highest state educational policy level, Gujarat has not committed to implement SLS all across the state. In the early phases of its development, SLS languished as a concept that needed to be proven through research. Scientific evidence, both in quantitative and qualitative terms, now exists from two separate studies: SLS can serve as a steady, incremental, lifelong approach to sustain and improve scriptacy levels. The Gujarat experience reconfirms earlier assessments that SLS would be generally popular among most viewers. If every film song or music video that is shown on television in India or on the state broadcasting station were to be subtitled in the same language, one could expect a substantial contribution to the national literacy rate and scriptacy levels. In any state, the resources required would be less than 1% of the present allocation for continuing education (earlier known as postliteracy) programs. Thus, it is not lack of resources that prevents a bold long-term national experiment with SLS. Implementation of SLS in all states and languages hinges, ultimately, on the political decision to do so, combined with a minimal allocation of funds. The rest can be left to the Indian people's unbridled passion for film songs. ■

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