

Reading, Language Acquisition, and the “Din in the Head”: Involuntary Mental Rehearsal in the First Language

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Abstract

The phenomenon of involuntary mental rehearsal or “Din in the head,” has been associated by researchers with second language (L2) acquisition, primarily with beginning learners. This study provides new evidence for Din in association with the acquisition of new linguistic elements from a different population of language acquirers, advanced first language readers. The results lend support to the claims made by Krashen concerning the nature of L1 and L2 acquisition, and indicate a connection between acquisition and the perceived pleasure of the Din phenomenon. Possible implications for the selection of L1 and L2 classroom activities are discussed.

BARBIER (1980) first described the phenomenon of involuntary mental rehearsal, termed “the Din in the head,” in the context of second language (L2) acquisition. KRASHEN (1983) has hypothesized that the Din is a result of L2 acquisition taking place, and has also speculated (1993a) that it may occur upon the internalization of any new linguistic information. Later researchers (BEDFORD, 1985; PARR and

KRASHEN, 1986; DE GUERRERO, 1987; SEVILLE, 1993, as reported in KRASHEN, 1993a; and MCQUILLAN & RODRIGO, 1995) confirmed that the Din is commonplace among beginning and intermediate L2 learners after both listening and reading, but did not seem to be present among advanced learners. This study provides new evidence for the Din in two areas: in first language (L1) acquisition and among highly literate adult readers. Questions concerning specific characteristics of the Din will be addressed, including whether it is similar to the reported L2 Din, under what circumstances it is "triggered," and how long it lasts. In addition, I will examine the relationship of the L1 Din to Krashen's Input Hypothesis and the more recent Pleasure Hypothesis of language acquisition, and its possible importance in evaluating L1 and L2 reading programs in our schools.

Literature Review

The first description in the literature of the Din was BARBER'S (1980), who noted that an involuntary "mental rehearsal" of languages she was not very fluent in began to take place shortly after arriving in Russia. After a few days of exposure to Russian, Barber reports hearing "a rising Din...in my head; words, sounds, intonations, phrases, all swimming about in the voices of the people I talked with." She comments that the "sounds in my head became so intense that I found myself chewing on them, like so much linguistic cud...I had no control over what my subconscious fed into my chewer each day" (p. 29-30). KRASHEN (1983) provided further descriptive evidence of the phenomenon. A self-described intermediate acquirer of German, Krashen recalls attending several academic presentations in German during a weekend conference. The following day, he "felt the (German) Din rattling in my brain. The Din lasted only for a little while after (the) weekend. After a few days back home in Los Angeles...it began to wear off" (p. 42). BEDFORD (1985) later described the experience as a "noticeable din or jumble of words, phrases, or even

characteristic melody patterns" which "pop into the head at nearly any time or place" and are "quite involuntary" (p. 286).

KRASHEN (1983), commenting on Barber's observations, put forth the hypothesis that the Din was a result of stimulation of the Language Acquisition Device (LAD), a sign that the learner was acquiring language. According to Krashen, language is acquired when learners receive "comprehensible input" (CI), or messages that they can understand. These messages must contain some linguistic information that has not yet been acquired, referred to by Krashen as "i + 1", where "i" is the current level of acquisition. The Din will occur, then, when the learner is receiving CI that contains i + 1.

This definition of what "triggers" the Din was generalized by KRASHEN (1993a) in light of evidence on related musical, kinesthetic, visual, and intellectual Dins cited in BEDFORD (1985) and MURPHEY (1990). A Din can occur whenever "we are experiencing something new and attempting to integrate it, that is, when we are learning something ('learning' in the general sense, that is)...Once the tune is familiar, once the movement is mastered, or the problem solved, the Din or 'infatuation' disappears" (p. 2). Any time the brain deals with an i + 1 situation, Krashen suggests, a related Din may take place. Quantitative studies confirmed that most L2 learners experience the Din in a variety of circumstances. Table 1, an expanded version of what appears in MURPHEY (1990) and KRASHEN (1993a), summarizes the research from the data available. When necessary, data were reanalyzed from the information provided in the original publications so as to indicate percentages under each category listed.

Table 1
Results of Five Studies of the Din Experience

| Study: • Type of Input | Number of subjects FL = Foreign Language SL = Second Language | Responses | % Frequency & Mean on 1-5 Scale* |
|-------------------------------|---|-------------------------------------|--|
| Bedford (1985) | 160 (university) | "sometimes" to "very frequently" | |
| • all | FL & SL | 68.1 | 2.71 |
| • listening | | 68.1 | 2.84 |
| • reading | | 51.2 | 2.44 |
| Parr & Krashen (1986) | 150 (high school) | Yes | |
| • all | FL | 78.1 | -- |
| • listening | | -- | -- |
| • reading | | -- | -- |
| • all | 216 (university) | Yes | |
| • listening | FL | -- | -- |
| • reading | | 69.2 | -- |
| de Guerrero (1987) | 55 (university) | "sometimes" to "very frequently" | |
| • all | FL | 78.9 | 3.13 |
| • listening | | -- | 3.29 |
| • reading | | -- | -- |
| Seville (forthcoming) | 40 (elementary) | Yes | |
| • all | SL | 57.5 | -- |
| • listening | | -- | -- |
| • reading | | -- | -- |
| McQuillan & Rodrigo (1995) | 24 (university) | "sometimes" to "very frequently" | |
| • all | FL | 75 | 2.92 |
| • listening | | 71 | 3.21 |
| • reading | | 54 | 2.75 |

* = Bedford and McQuillan and Rodrigo used a five point scale, 1 = never experienced the Din, 5 = very frequently/always. The mean score is shown. de Guerrero used a 0-4 scale, so her scores were adjusted to be comparable to the others. Parr and Krashen and Seville reported only percentages, so no mean scores are given.

Table 1 shows that the L2 Din is found among all groups, from young children to adults, and in both foreign (FL) and second language (SL) settings. It occurs in both listening and reading, although more prominently in the former. This finding should not be surprising, since KRASHEN (1993a) states that few FL or SL students read much in traditional programs. HUBER (1993), reporting on the Modern Language Association's survey of FL curriculum in the United States, confirms that lower and intermediate FL classes spend very little time on reading. An important finding of Bedford and de Guerrero was that the Din occurred more after meaningful, comprehensible reception of the L2 than with traditional, form-focussed instruction (e.g. grammar drills). The implication is that activities that included CI are more strongly associated with triggering the Din, supporting the link between acquisition and the Din.

KRASHEN has claimed (1983, 1993a) that advanced L2 learners should not get the Din, because they encounter less and less comprehensible input at the $i + 1$ level. BEDFORD (1985) was unable to sustain this claim, finding no correlation between the incidence of the Din and language proficiency, although he doubts that very many of his learners were truly advanced. DE GUERRERO (1987) similarly found no significant relationship between proficiency and the Din. Her advanced students were so categorized based upon their placement into an English communication course. PARR and KRASHEN (1986), however, comparing beginning and intermediate students with FL graduate students and professors, found that 90% of the 28 subjects surveyed no longer experienced a Din. KRASHEN (1993a) argues that de Guerrero's subjects, like Bedford's, were probably not very advanced, and so should not be considered counter-evidence to the hypothesis.

While this explanation of the data is plausible, there are other possibilities that are equally consistent with Krashen's theory. While it follows that more advanced learners receive less new input to set off the Din, particularly when listening to the L2, those that continue to read increasingly more complex texts may be expected to experience

some input at i + 1, if not in terms of vocabulary and grammatical structure, then at least in terms of literary style. The questionnaire used by PARR and KRASHEN contained a lengthy quote (see Appendix A) from BARBER (1980), where the Din is clearly described as a phenomenon present at the beginning and intermediate stages of L2 acquisition, triggered by aural input. Bedford and de Guerrero used a much shorter, more general description of the Din (see Appendix B) which, free of any context, does not imply the Din is linked to proficiency. Parr and Krashen's advanced subjects, then, with only Barber's description to make a judgment, may not have seen the Din in the larger context of form and style in reading.

It should be expected that advanced L2 acquirers may still get the Din in certain cases such as reading, where they encounter more complex texts which contain new rhetorical or stylistic elements. We should also expect a Din in the L1 under such circumstances. Both claims are examined in the present study.

The Study Methodology

Four subjects considered likely to experience an L1 reading Din were chosen. The criteria for selection was that the subject be a heavy pleasure reader who frequently reads literature in his/her native language considered difficult or above a "popular" level. I discussed the L2 Din with each subject individually on an informal basis. All four immediately responded that they, too, experienced such a Din under certain circumstances in their native language. I then asked each to describe briefly in writing the nature of their reading Din, what activates it, and how long it lasts. None of the subjects had read the Din research, nor were they familiar with the details of the L2 descriptions other than the short explanation given (roughly similar to that of Bedford's description in Appendix B).

Description of Subjects

(1) Paul is a 31 year-old chemist who lives in a large Midwestern city. While he has yet to complete his bachelor's degree, he reads extensively for pleasure in a number of areas, including philosophy, theology, science fiction, poetry, and history. He was a National Merit Scholar in high school, and is a member of the high I.Q. group, Mensa.

(2) Ann is a 43 year-old reading specialist and English teacher in an large, inner-city high school in the Midwest. She reads daily for pleasure a wide variety of fiction, and is frequently invited to give workshops in area schools on issues relating to literacy and learning styles. She is a member of a "literature group" that meets periodically to discuss a common book read.

(3) Monica is a 30 year-old professor of Spanish at a public university in the Southwest. She is a native speaker of French, is proficient in Spanish and English, and has an advanced reading knowledge of Latin. A graduate of the Sorbonne in Spanish literature and linguistics, she reports reading for pleasure extensively in four languages, particularly novels and poetry.

(4) Sandra is a 24 year-old graduate student in education at a large, private university in the Southwest. Although her first language is Cantonese, she has resided in the United States continuously since she was eight, and has complete, native fluency in English. She reads novels for pleasure, and also participates in a literature discussion group on a regular basis.

Results

Description of the L1 Din

All four subjects described the Din in very similar terms. Ann wrote:
When I immerse myself in a particular author's work, I find that their words and phrases reappear without my will or thought and even in my speech....phrases that have a lot of 'sensory input' associated with them.

Monica noted that the feeling is physical. I experience the Din in different situations...I hear a voice almost constantly, most of the time when alone. That voice expresses something not identifiable nor describable. It is just a set of linguistic elements disorganized: words, clauses, sentences. The flow is constant, overpowering at times...There is something of a bulimic behavior there.

Paul stated that his Din is an unconscious mental repetition of sounds and phrases in the poems that I read or heard, and also a mental rehearsal of the rhythms of the poetry...not necessarily accompanied by any sounds or words...(It) is unconscious and automatic; it just happens, it isn't something I consciously do. (emphasis in the original)

Sandra described her experience of the Din as occurring in a more organized way, with one particular phrase reappearing suddenly from a previously read work. All four subjects coincided in their descriptions of the Din as being at times unidentifiable in its discrete linguistic elements, but nevertheless a distinct involuntary mental experience.

What Triggers the Din

Again, there is a strong similarity among the subjects as to what sort of reading "sets off" the Din. All four mentioned poetry and prose written in a "poetic" style as initiators of the Din. Sandra's case was typical. She reported getting a Din after reading authors with "particular writing styles." She stated:

I recently read Maya Angelou's *Wouldn't Take Nothing For My Journey Now*, a collection of essays about life, love, and spirituality, etc. She included a poem in one essay...I read it about three times (it's short), reflected briefly on it, and moved on to the rest of the book...(A)bout two days afterwards, I had the final verse pop into my head from time to time.

Paul noted that he gets the Din exclusively after reading poetry or listening to a reading of poetry. Ann wrote that she gets a Din from reading Ferlenghetti and e.e. cummings "which will resurface from

the depths of my subconscious and 'play' repeatedly...like a broken record." She added, however, that prose written in a poetic style can also trigger a Din. She reported getting a Din when reading an exceptionally well-written phrase. Marjorie Rawlings' writing will call it up, for example...Last year I experienced the writing of Zora Neale Hurston, which has a lot of dialectic influence. This led to a frequent repetition of words, phrases, and sounds which her writing induced.

None of the subjects reported hearing a Din from routine reading done for work or school, or from very familiar prose texts such as newspapers, magazines.

When the Din Occurs

All four subjects said they get the Din when they are otherwise unengaged mentally in a task, although its duration seems to vary. Paul wrote that he experiences the Din in odd moments when I am doing something that does not take much concentration, like washing glassware or other repetitive, mindless tasks at work, or driving a car, or when I am not doing anything in particular. I don't think I experience the Din while I am watching T.V., though...After going to a poetry reading, I might experience the Din frequently that evening and the next morning, and gradually less over the next couple days, until it stops altogether.

Ann also stated that she gets the Din while "driving home," "in a latent landscape," "before bed," or "when I'm half asleep." The Din can endure, however, a longer time, or can be triggered much later.

According to Ann, there are still phrases...which will come to my mind 6-8 months after I read them. It can "kick in" immediately, or up to twenty years later.

Monica also reported experiencing the Din when she is driving home, and that the Din from particular authors decreased upon more extensive reading of their works:

The Din effect stops after a while, as in sort of an overdose...It

may also stop because I started engaging in another activity

which acts as its replacement...I also have noticed that I lose interest in an author after reading 2 or 3 of his works, perhaps because I am so familiar with his style that it fails to stimulate me anymore.

Additional Comments

Subjects also included other comments concerning their reading Din. Monica noted that the Din experience is very pleasurable. "I feel satiated in a way." This feeling of pleasure disappears when the Din goes away. Paul also found the Din pleasurable and "cognitively intense."

Ann speculated that "Shakespeare is renowned world-wide because his writings produce so much Din...I've had students quote Shakespeare (a line or a phrase) after reading it only one time." She also commented on a "writer's Din" which she experiences when working on a piece for a workshop or presentation, "especially by the turn of a phrase I feel special delight in." Sandra remarked that she finds it easier to write in a certain style (e.g. academic papers) after reading that style, and that there may be a Din associated with that process.

Discussion

The similarity of the L2 accounts and the L1 reading Din are striking on many points. The description of the Din provided by the subjects as an involuntary mental rehearsal closely matches those of Barber and Bedford. The "trigger" for the Din is, as in the L2 studies, linguistic information that is in some sense "unacquired" by the subject--the unusual rhythms, phrases, patterns of poetry and stylized prose. Styles, it seems, can also be acquired with enough input, as noted by Sandra and by Monica. All of these unusual and unfamiliar textual elements constitute input above the current level of the reader (i + 1), the reception of which is associated with a Din. Once the readers become accustomed to or acquire the element, the Din stops. It is important to note, for example, that the Din does not appear after reading routine texts, since these presumably contain forms and styles

already acquired by an advanced reader. Monica's statement that the Din dies out after repeated exposure to a given author is consistant with this explanation. The association of the Din with new L1 input--and its absence when readers encounter familiar forms--strengthens the notion that involuntary mental rehearsal is an indication of language acquisition, similar to the L2 evidence commented on above by BIEDFORD and DE GUERRERO that comprehensible input activates produce a Din among beginning learners.

The time that the L1 reading Din occurs and its duration also closely match accounts provided by the L2 research. Both Bedford and KRASHEN (1983) stated that the Din usually takes place when learners are not concentrated heavily on a task, which was the case reported by the subjects. Krashen, like our informant Paul, reported the Din dying out over the period of a day or two, while one of de Guerrero's subjects found, like Ann, that the Din can last longer.

Both Bedford and de Guerrero's subjects as well as Krashen found the Din to be a pleasurable experience, as did Paul and Ann. Indeed, Ann's comment on the relationship between the Din and the popularity of certain forms of literature points to an important linking of pleasure, the Din, and language acquisition. Krashen (1994) proposed a "Pleasure Hypothesis," which states that language acquisition is more readily fostered by activities that are pleasurable. He reviews the evidence on what acquirers perceive as pleasurable in L1 reading and writing instruction and finds that they are precisely those things that contain meaningful, comprehensible input in an interesting environment. A smaller study (MCQUILLAN, 1994) of L2 (Spanish and ESL) learner perceptions as to the pleasure produced by classroom activities gave similar results. Learners preferred extensive and self-selected reading-rich sources of comprehensible input--to more traditional grammar and skills instruction.

Activities which promote acquisition through the reception of comprehensible input may in fact be pleasurable because of the Din associated with them. The reading Din may very well be part of the thrill of literature, a linguistic "high" which, to be sustained, re-

quires us to continue reading more and better texts that contain unacquired elements (in the broadest sense) of the language.

Conclusions and Implications

The findings on the L1 reading Din lend support to Krashen's hypothesis that the Din is a result of stimulation of the LAD by comprehensible input at the i + 1 level. Like the L2 Din and similar Dins in other fields (see MURPHY, 1990, for a review), the reading Din can occur anytime readers come in contact with unacquired information, in this case styles, or forms of writing, even if they have otherwise advanced proficiency in the language. The cases presented here also provide evidence for the acquisition of style through reading, a notion also proposed by KRASHEN (1991).

The findings further suggest that the Din may be an integral part of the pleasure of both L1 and L2 reading, a pleasure which, to be sustained, must come from the reader encountering more complex texts. This may also be the key to discovering whether the instruction we provide is furthering acquisition or not. If there's no Din and no pleasure, there's probably no acquisition. In light of these conclusions, it is not surprising that language arts programs in which students report pleasurable experiences in reading, such as free voluntary reading, also prove to be more effective in language acquisition than less enjoyable, skills-based instruction (KRASHEN, 1993b). L1 and L2 instructors have a legitimate reason to favor the selection of texts and materials which students enjoy, since what they like to read is likely to further their language acquisition while providing a pleasurable Din in the head.

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Appendix A

Description of the Din in the Head from Barber (1980)

I spent last fall traveling in a dozen countries, mostly in Eastern Europe. Since I was working rather than touring, I had to communicate in any language I could. I had studied Russian 10 years ago and had read it some since, but I had never spoken it much; I had learned Modern Greek by traveling one summer in the backwoods of Greece, with some help from my classical Greek, but I had never read it and had not used it at all in the intervening 17 years. French, which I had learned in a French schoolyard at age 12 and had studied in high school, and German, which I had studied one summer by correspondence, were more immediately serviceable: I had read and spoken them both from time to time.

It turned out that the curators I was working with at the Hermitage in Leningrad spoke nothing but Russian. The first day I was tongue-tied, but by the third I was getting along well enough. That is, we were managing to get the information back and forth and to enjoy each other's acquaintance, even though I was acutely aware that I was making grammatical errors everywhere. But it was either that or hopelessly stall the conversation and the work. Any self-respecting adjective in Russian gives you on the order of 40 possible categories of forms to choose from, according to case, number, gender, and animacy, not to mention long and short forms and declension classes. If you have to dive into this labyrinth to select a form consciously, you find when you surface proudly with your hard-won morpheme that the conversation is 10 miles down the road. Either that, or your interlocutor is sound asleep. Social pacing turns out to be more important than grammatical correctness, even in a scientific conversation.

By the third day also, the linguist in me was noticing a rising Din of Russian in my head. words, sounds, intonations, phrases, all swimming about in the voices of the people I talked with. This Din blocked out all my other languages to a degree inversely proportional to how well I knew them. Many times on the trip, after a few days of a given language, my social signals always came out in that language, regardless of what I was trying to talk at the moment, except English, of course and interestingly, French. I had learned my basic French as a child, by child's methods, and I have always retained the ability to switch in and out of it cleanly at a moment's notice. And

whereas German was difficult to switch to, Spanish, my most recent language, was hopeless...

The sounds in my head became so intense after 5 days that I found myself chewing on them, like so much linguistic cud, to the rhythm of my own footsteps as I walked the streets and museums. Whenever I noticed this Din, the linguist in me would demand to know what I was saying. Half the time I had to look what I was saying up, or somehow reconstruct what it meant from the context in which I had heard it hours or days earlier. The constant rehearsal of these phrases of course was making it easier and easier to speak things quickly; things popped out as prefabricated chunks. But I had no control over what my subconscious fed into my "chewer" each day. It fed me what it considered to be memorable--not what I considered maximally useful. Nonetheless, my overall command of Russian improved more in a single week than it would have in a month or two or intensive reading.

Appendix B

Description of the Din in the Head from Bedford (1985)

You have the Din if you sometimes "hear" a clearly noticeable jumble of Spanish words, sounds, phrases, or even characteristic melody patterns in your head. (This is very normal!) These words and phrases are usually things you have been hearing or reading recently (in class or on Spanish tapes, etc.). Often you "hear" the words and phrases in the voice qualities of your teacher or of the people who made the language lab tapes, or maybe even in your own voice. These random "snatches" of Spanish just pop into the head at nearly any time or place, and it's all usually quite involuntary. At times it may be active enough to be described as a "constant rehearsal in the head." There it is. If you have ever had the Din, it was an unmistakable phenomenon that you will readily recognize from the description. If the above paragraph doesn't "ring a bell" or is unclear, you should take it that you have not had the Din. No matter, your answers to the questionnaire are still just as important.