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THESIS APPROVAL

The abstract and thesis of Nathaniel George Halloran for the Master of Arts in Teaching English to Speakers of Other Languages were presented August 12, 2003, and accepted by the thesis committee and the department.

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ABSTRACT

An abstract of the thesis of Nathaniel George Halloran for the Master of Arts in Teaching English to Speakers of Other Languages presented August 12, 2003.

Title: The Acquisition of a Stage Dialect

This study reports on the effectiveness of (theatrical) stage dialect learning techniques in bringing about linguistically authentic change. Actors use several techniques, some rather esoteric in nature and others more closely tied to linguistic fact such as the use of the International Phonetic Alphabet. The purpose of this study is to examine some of these techniques as to their ability to bring about linguistic authenticity, as well as to attempt a comparison of stage dialect acquisition and naturalistic dialect acquisition.

Data were collected by interviewing a convenience sample of twelve student actors. Six of these (three males, three females) were trained in stage dialect techniques and six (three males, three females) were not. A list of sentences was generated to examine phonological features of Irish and British dialects. These were read by the participants first in natural speech and then in stage dialect. They were also asked questions about their stage dialect experience, and about how they felt about their performance on the sentences. The elicitation and interview were recorded and analyzed for phonological accuracy by the investigator.

The study found that stage dialect techniques bring about more phonological accuracy as well as more impressionistic likeness to the target dialect than without

their use. It was also found that these participants' stage dialect acquisition was similar to very early stages of naturalistic dialect acquisition with regard to performance variability, but also exhibited behavior not reported in naturalistic dialect acquisition studies. The data suggest that while stage dialect learning may eventually lead to native-like pronunciation of novel sentences given to an actor who has mastered the dialect, the stages between ignorance and mastery may look very different than the stages observed in naturalistic dialect acquisition. Lastly, it was found that psycholinguistically, early fossilzation of an incompletely learned stage dialect may occur due to lack of reliable source material such as native speakers of the dialect. However, all of these speculations are only tentative as the participants were picked for convenience (and therefore were quite heterogeneous in several ways) and do not represent the acting community in general.

THE ACQUISITION OF A STAGE DIALECT

by

NATHANIEL GEORGE HALLORAN

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Chapter 1: Introduction

The Australian lyrebird is considered the world's best mimic. Not only is it capable of imitating other birds' songs (twelve is the highest reported total), it can also flawlessly imitate the sound of a camera with an automatic winder and the roar of a revving chainsaw (Davies 2001). In the theater, actors who use stage dialects might seem like nothing more than lyrebirds who woo us into believing, if only for a moment, that we are in the presence of an actual speaker of whatever dialect they are imitating. Whether discussing dialects or stage dialects, the definition of dialect used here is that of Trudgill: "[those] varieties of [a] language which are mutually intelligible at least to some degree" (1986:1).

This deception of the audience begins with an actor assuming the speech patterns of an individual in order to create a more convincing or authentic character. These speech patterns are not just an eccentric idiolect, but are broad attempts at reproducing a particular dialect within the actor's native language. The resultant dialect the actor uses may be a regional one within the English-speaking world (e.g. Northern Irish), or the dialect of a non-native English speaker (e.g. Russian-accented English). In either case, the performer is required to use an accent or dialect other than his or her own to create a stage persona.

Mastering this skill presents a considerable challenge. Dialect learning involves the recognition and drilling of phonetic/phonological properties at both the segmental and suprasegmental levels; these features can be similar to the performer's

native dialect to a greater or lesser degree, depending how linguistically or geographically close to the native dialect and the stage dialect are to each other. Furthermore, because learning a stage dialect (hereafter "SD") requires learning phonetic/phonological properties, it could be argued that it is similar to the phonological aspects of learning a second language. A surface-level similarity exists between the two processes: learning an SD can produce results that are just as varied as in second language learning. On this subject, a well-known contemporary American dialect coach, says:

> Perhaps as few as twenty per cent of actors have the 'good ear' that leads to skillful imitation of speech patterns. Other actors must use a systematic approach in order to create authentic-sounding dialects and accents. (Stern 1979: 6:3)

It is these systematic approaches that I propose to examine in this study.

Having a background in theater and performance as well as at least one stage production involving an SD (Irish), I came to this study through conversations with linguistics professors. Through these discussions, and my own anecdotal experiences, the phenomena of SDs yielded a good deal of interesting subject matter for a linguist.

Now, it could be argued that SD usage is purely for entertainment purposes and there is no sense studying either its techniques or effects on actors' pronunciation. After all, actors using SD are not concerned with the technical minutiae with which linguists tend to study such subjects as dialectology, sound patterning, psycholinguistic modeling, and the language acquisition process. They are primarily concerned with portraying a believable character, and then probably only with concealing their own native dialect ("D1"). That does not diminish the value in

studying SD learning and usage; regardless of actors' own aspirations with SD, the process is fundamentally psycholinguistic in nature (for both actor and audience) and could have applications beyond the world of theater.

Before discussing these possible applications, it is helpful to discuss a few examples of SD usage. Actors learning SDs exhibit great variability in their level of success; even with the systematic approaches to SD learning, some actors are better imitators than others. For example, Kevin Costner, whose native dialect is unmistakably American, attempted to render a dialect in the movie "Robin Hood", that many have agreed (lay-people, actors and linguists alike) is a horrific attempt at an SD. On the other hand, there are several actors who are considered masters of dialects: John Voight, Minnie Driver, and Meryl Streep. In fact, Meryl Streep's excellent use of dialect in the film "Out of Africa" made Robert Redford sound intolerably American. Other examples are several Australian actors who hide their accents quite well and do rather convincing American ones: Russell Crowe, Toni Collette, Guy Pearce, and Rachel Griffiths.

In all of these cases, the performers are adults learning a second dialect ("D2") distinctly different from their D1. This is important to the study of language since it is accepted that adults (those language learners who have passed the "critical period", roughly speaking, puberty (Lennenberg 1967)) learning a second language will never fully acquire native-like proficiency in that language. The study of SD learning techniques could contribute to the understanding of adult L2 phonological acquisition.

There is a difference, however, between acquiring proficiency in the syntax of an L2 and acquiring proficiency in the phonology of an L2. Learning the syntax is a matter of learning rules governing word order, while learning the phonology of an L2 is dependent on correctly perceiving and producing phones in their environments (Flege 1995). The literature has reflected this distinction. The Contrastive Analysis Hypothesis (CAH), strongly stated, hypothesizes that areas of difficulty in L2 learning can be predicted based on a comparison of L1 grammatical and phonological systems to their L2 counterparts (Lado 1957). In SLA research, however, the CAH for the learning of syntactic structures has largely been refuted. Nevertheless, this division of skill areas seems to make sense, as adults seem to be at more of a disadvantage for acquiring phonology than for acquiring syntax (Hatch 1983; Mclaughlin 1984). From this perspective, a contrastive analysis of L1 and L2 phonological systems follows the claim that foreign accent in an L2 is a function of perception of L2 phonology (Flege 1995).

Following Lennenberg 1967, Neufeld 1980 makes a more specific claim related to this study: the acquisition of phonology in the L2 will be less successful once the learner passes puberty. Flege 1995 claims that in the ears of the native speakers of the L2 a foreign accent will be more evident as the age of learning L2 increases. Since, as has been established, learning an SD involves learning phonology at some level, and some performers can do so quite convincingly, the question is: What is it that actors are actually doing? Are they fully learning the phonology of a second dialect, or is it some partial learning sufficient to convince the ears of a

linguistically unsophisticated audience? For these reasons, the study of the use of SDs stands to learn from the fields of dialectology, phonetic imitation (itself a subfield of psycholinguistics) and L2 acquisition.

However, before discussing linguistic research related to SD learning, it is important to identify some crucial differences between normal adults learning a second language and actors learning a dialect for the stage.

There are linguistic differences between the two situations: actors are memorizing a specific text. From the actor's perspective, learning the lexical differences in a D2, identified as an integral part of naturalistic dialect acquisition by Chambers 1992, is usually accomplished by memorizing a part. Lexical differences (such as the British *aubergine* for American *eggplant*) between the D1 and the dialect of the text should not interfere. As long as the actor is faithfully memorizing the part, (presumably) no intermediate stages will be present where the actor will alternate between the parallel terms, as Chambers 1992 observes happening with naturalistic D2 acquisition.

Since lexical differences presumably do not present a problem, it is necessary to establish those features of the dialect the actor is instructed to attend to. On the basis of a preliminary survey of dialect teachers and a review of the literature, the following features are the most important from their perspective, starting with the most important:

(1) Intonation/Rhythm (referred to as "lilt" by certain texts and teachers)

(2) Vowels[1]

(A) Using those vowels which are present in the D2 that are not present in the actor's (and possibly the audience's) D1.

(B) Omitting those vowels which are in D2 but absent from D1.

(3) Consonants

(A) Using consonants that are present in the D2 but absent from the D2.

(B) Omitting consonants present in the D1 that are absent in D2.

(4) Word-level stress.

This raises the question of what the actor's D2 goal with regards to authenticity should be. Defining this goal is somewhat problematic. Dialect coaches sometimes do not want a dialect learned too well. While they often expect learners to listen to native speakers of that dialect, the coaches do not always expect that the actors will sound 100% authentic or "native" in their pronunciation of the dialect, as this may sacrifice audience intelligibility (Machlin 1975; Herman & Herman 1943; Stern 1979). Blunt, a dialect coach with a popular book on the subject, says of this problem: "A stage dialect is a normal dialect altered as needed to fit the requirements of theatrical clarity and dramatic interpretation" (1967: 1). Blunt's phrase "dramatic interpretation" could be interpreted as giving the director and actor some amount of freedom when using the SD. It could also mean, as stated above, that an SD is only one part of the larger task of creating a believable character.

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[1] Vowels seem to be given more attention at the early stages of learning a dialect for the stage. Therefore, they receive separate treatment from consonants.

Moreover, the goal for an SD, while sometimes a very specific dialect, much more often is a "[stage] standard which represents the variations" (Blunt, 1967: 2). This is not unlike "koinéization" in linguistic dialectology, which "covers the processes of mixing, leveling, and simplification" of dialects (Trudgill 1986: 127). Blunt's description of the stage "standard" could be considered both leveling and simplification.

A stage standard could theoretically be noticed by a lay-audience made up of native speakers of the dialect being imitated. I had confirmation of this point recently when discussing the film "A Cry in the Dark" with an Australian. In the movie, Meryl Streep portrays a woman from Northern Australia wrongly accused of killing her baby. The Australian stated quite plainly,

> That wasn't Lindy Chamberlain's accent that Meryl Streep used; it was a good version of a broad Australian accent you might *hear* in the Northern Territory [where Lindy Chamberlain is from], but it wasn't Lindy Chamberlain's.

Even though this is an anecdotal account from a linguistically untrained lay person, it supports the idea of Blunt's "stage standard". Furthermore, Blunt calls the actor's work more "interpretive rather than scientific" (1967: 2).

This somewhat movable goal (both for reasons of intelligibility and for ease of learning, i.e., omitting some details) is in stark contrast to the example presented to most L2 learners. Among other practices, L2 learners are often shown movies that depict native speakers of the language they are learning. They are also (usually

tacitly) expected to strive for native-like pronunciation, as the example presented to them is either a native-speaking teacher, or teachers highly proficient in L2. Pennington says of this: "[L2 learners] need a great deal of exposure to authentic models of the phonology of an L2 to develop native-like perceptual targets for L2 speech" (1994: 100).

To clarify this notion of an actor's goal in learning an SD, one must consider the audience, who are typically relatively unsophisticated in identifying dialects (assuming the audience does not contain Australians analyzing Meryl Streep's Australian accent). There is thus no need for the actors to use the most authentic version of a dialect, further emphasizing the practicality of Blunt's stage standard.

A hypothetical example might be this: an American audience in Portland, OR goes to see a production of "Translations", an Irish play by (the Irishman) Brian Friel. Presumably, the audience has heard an Irish dialect, either from a native speaker, from a Lucky Charms or Irish Spring commercial (or other forms of Irish stereotyping by the media), or from movies taking place in Ireland. The actors, in attempting to achieve relative authenticity with their stage Irish, succeed in suspending the audience's disbelief for the duration of the play. Moreover, some theater-goers leave convinced that the actors sounded truly Irish. Even if the audience is unconvinced, they might still say "I could tell she was trying to sound Irish, but it was not off enough to be distracting". In cases where the audience believes the actors sound truly Irish, how do the actors achieve their authenticity? After all, their goal was

believability and understandability, and not authenticity. In the second case, what made that person say that the dialect reminded them of Irish dialect at all?

This possible shortcut to learning L2 pronunciation via learning an SD is of particular interest to the English as Second Language (ESL) pronunciation teacher. Acton 1984, an ESL researcher interested in the possibility of changing fossilized pronunciation in ESL adult learners, talks about the importance of understanding

> how change is facilitated in fields such as ... voice training, [and] drama ... [until we do so], there is no real justification for models which tacitly assume that the interlanguage pronunciation of fossilized learners is, indeed etched in stone (Acton 1984: 82).

In brief summary, the similarities between the tasks of the actor and the L2 student are as follows: An actor aims at making his/her pronunciation decidedly different from his/her usual speech patterns. Actors have to learn new phones, try to stop using old ones, and take on the intonation patterns of the SD. Second language learners have to learn new phonemes, try to stop using old ones, and take on the intonation patterns of the second language they are learning. In synthesizing these two processes, as Herman & Herman 1943 strongly state in their text devoted to learning SDs that "A dialect *is* another language" (18; emphasis in original). While this statement may be an exaggeration from the linguist's perspective[2], it serves to stress

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[2] Two dialects may have phonological systems as different from each other as other languages; consider the phonological distance between American English and Glaswegian Scottish English. I am reasonably sure a Glaswegian I met was speaking English, but I could barely understand him. It may have been lexical differences impeding my understanding, but the cause of the breakdown was most likely phonological in nature.

the parallel complexities involved in such a task if one expects to apply an SD convincingly.

I turn now to some of the relevant literature on dialect, its acquisition, and applications of dialect study beyond the theater.

Chapter 2: Literature Review

In this section I discuss the varying techniques of dialect coaches, studies of dialect acquisition in adults and children, and lastly, the related area of phonetic imitation.

Dialect Coaches

There are varying methods by which SDs are taught to the student actor. Some use the International Phonetic Alphabet (IPA), some use idiosyncratic transcription systems explained in relation the IPA, while still others use systems that are not related to any standard whatsoever (IPA or otherwise). Learning SD is very often a sub-topic in the broader area of developing voice technique for the stage. However, there are several books written specifically on the subject, a core of which are used by some locally interviewed dialect coaches. This is not an exhaustive list by any means but rather an attempt to look at those books most likely used by local actors. I will discuss these books in relation to 1) the auditory sources used, 2) their phonetic transcription systems, and 3) specific or unique teaching techniques.

An older book on the subject (*Foreign Dialects* by Herman & Herman) does not have accompanying recordings to aid in learning, but rather suggests that students "observe and study the people who speak the dialect he is trying to learn" (1943: 15) in order to establish a source for the dialect. The source, then, is the variety spoken by native speakers. This book does not use the IPA except in the beginning of the book

to explain the authors' idiosyncratic system; for example, IPA /ɑ/ is represented by "**AH**" in their system. To Herman & Herman's credit, however, they do attempt to put phonological rules into prose to help the student master the dialect. For instance, for "British Dialect", they state:

> INTIAL "R," OR "R" PRECEDED BY A CONSONANT AND FOLLOWED BY A VOWEL, RECEIVES THE NORMALLY VOICED "R" AS USED BY AMERICANS (capital letters in original, Herman & Herman 1943: 65).

The book also employs the technique of using musical notation to denote the 'lilt' (the rhythm and sentence intonation patterns) of a particular dialect, so that those who can read music can observe and "sing" (if they wish) the target dialect's intonation patterns. This notation, when played on an instrument has a tendency to exaggerate the actual shifts in tone of any given dialect, but in the process does draw attention to the differences between American English intonation and that of the given dialects. The emphasis put on the intonation and rhythm of a dialect in Herman & Hermann 1943 is important to note, and seems to follow the same hierarchy given by the dialect coaches in the preliminary stages

Lastly, Herman & Herman also make generalizations about the demeanor of the people in a dialect area and how this influences their speech. For instance, about the "Irish Dialect" (1943: 77), they say:

> Their excitable natures give rise to an over-accentuated stress emphasis of syllables, with their firmness of conviction and dogmatic thought processes further contributing toward this over-emphasis.
>
> At the same time, their innate love of lyrical music results in a coloring of the stressed syllables with tonal emphasis so that the effect is that of an emphatic, energetic attack. (1943: 81)

This practice is not uncommon among dialect coaches and may be important when searching for techniques that student actors find useful and helpful.

In contrast to Herman & Herman's system, Blunt 1967 uses the IPA exclusively for his transcriptions. Blunt's book is widely used because of its concise descriptions of dialects and its accessibility to the student actor. Blunt also includes recordings as a means of aiding the student in learning a dialect. These recordings are a combination of native speakers of the various dialects in question, as well as some imitations of dialects by his acting students. Furthermore, Blunt's central technique is using 'key' words to aid in learning an SD. This is similar to Wells' (1982) word list technique for characterizing English dialects; by using key words, Blunt highlights similarities and differences between American English and the SD to be learned.

On the topic of what version of a dialect one should use on stage (e.g. Derry vs. Belfast Northern Irish), Blunt makes a point of saying that the actor is doing "interpretive rather than scientific" work, and that the actor "seeks a standard which represents the variations" (1967: 2). In other words, the actor is looking for some sort of "middle ground" which characterizes what is common about the varieties of a particular, broadly named dialect, such as "Irish" or "Standard British". The search for an appropriate target and how that affects the application of an SD is one of the key questions of the present study, and is not a problem isolated to SD learning; the dedicated foreign language student is always concerned with finding an appropriate target for their language learning.

A second text, Machlin's *Dialects for the Stage* (1975), also includes recordings for student listening and repetition exercises. These recordings, however, are a mixture of types of auditory sources; some of the examples are Machlin's students imitating the target dialect, while others are relaxed personal interviews with native speakers of the target dialect.

There are other weaknesses to the text. Machlin uses an idiosyncratic transcription system without an accompanying chart of IPA equivalencies. Furthermore, nowhere does she make it clear which dialect the transcriptions are in reference to, although it is assumed to be General American. Students are expected to learn the system as they listen to the corresponding recordings. She does include an IPA chart at the end of the book, but this has only example words and spellings from English, and does not provide equivalences between her system and the IPA.

Possibly the most creative author on the subject, both for the breadth of the applications of his SD techniques[3] and for the techniques themselves, is David Alan Stern. Stern has accent-specific booklets and recordings for each dialect, each appearing as a volume within the series titled *Acting with an Accent.* Each booklet starts with a general introduction (the same for each dialect) giving what Stern believes to be the most important features of dialects needed for authentic-sounding imitation. These are: pronunciation (vowels and consonants), pitch characteristics (intonation and pitch changes within vowels, also called "inner-vowel lilt" in his

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[3] He also applies them to accent modification mini-courses for those who wish to hide a stigmatized native dialect in favor of a prestige variety as well as those who wish to mask their non-nativeness when speaking ESL.

booklets), stress patterns (by this he means both actual word stress and timing patterns of a dialect), and resonance or muscular speech impulse (this last feature of a dialect he also refers to as "tone focus" or a "tone focus point").

These tone-focus points are particularly useful because they are quick ways for students to remember dialects. For example, he cites the center of the tongue as the "tone-focus point" for American English; he states that "Standard American speech centers most of its muscle work in the middle part of the tongue" (Stern 1979; 1: 6). This configuration is contrasted with Standard British, which Stern says "requires much more work in the muscle groups of the lips and front face" and has a tone-focus point "more frontal [than]" American speech (Stern 1979; 1: 6).

Furthermore, he provides a diagram (see Figure 1) in each booklet which shows the tone-focus points (they are called "points of resonance" on the diagram) for the respective dialect to be learned:

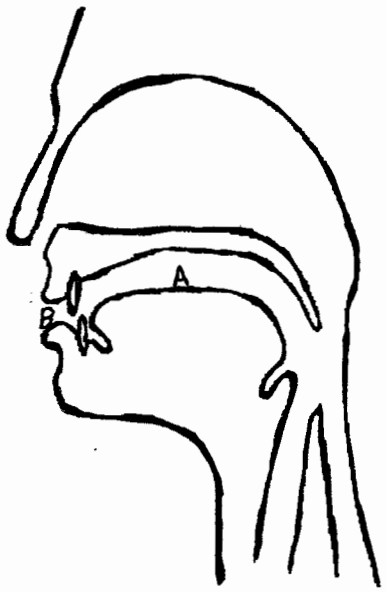

Figure 1 Points of resonance (tone-focus points) for Standard American (A) and St. British (B) (Stern 1979; 1: 6)

Stern makes some ambitious claims about these tone focus points: "Once an actor has mastered the muscularity and tone focus, many of the important pronunciation changes can be made more easily and convincingly" (1979; 5: 4). It can be assumed that Stern uses "pronunciation changes" to mean segmental substitutions. This is an interesting claim to be evaluated: that an overall change in the focus of facial muscularity and "vocal energy" can lead to easier awareness and application of important segmental substitutions.

In his Irish volume he says "It almost feels like the maximum point of vibration is outside the mouth" (Stern 1979; 5: 6) to describe its tone-focus point (See Figure 2). Standard British and Irish were chosen to exemplify Stern's tone-focus points because my design will be testing actors' use of these two SDs.

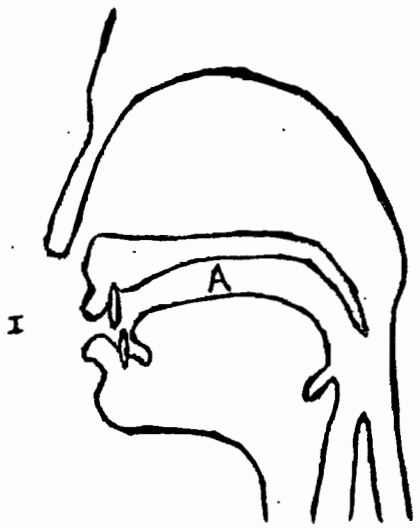

Figure 2 Points of resonance (tone-focus points) for St. Am. (A) and Irish (I) (Stern 1979; 1: 5)

Stern does not rely solely on tone-focus points for teaching SD; he also uses the IPA in his transcriptions. Furthermore, the auditory sources that Stern provides are unusual. On the recording, he imitates the dialect in question throughout his instructions; he then provides read passages that exemplify important sounds in the dialect. In these passages, he reads them first in his General American dialect and then repeats them in the target dialect. Although it is not explicitly stated, this seems to be in order to contrast the two pronunciations more effectively, and train the ear of the student actor in noticing these differences. Again, this raises the question of how can people be doing authentic sounding SD at all, if what they are doing is an imitation of an imitation (when using Stern's tapes at least).

Colaianni 1994 includes no tapes in his volume, and recommends observing native speakers of the target dialect, as in Herman & Herman 1943. Colaianni

suggests transcribing from a dialect "source" (i.e. a native speaker of the target dialect) based on what the student actually hears and the student's "needs and tastes" (1994: 79). While praiseworthy for encouraging independent investigation, this advice raises the question of its utility; it is not terribly objective, being based on the student's ear and personal preferences.

Nonetheless, Colaianni 1994 uses the IPA and puts it at the center of his technique. Colaianni asserts that accent (SD) learning is a process of learning contrasts between your own dialect and the one to be learned (not unlike the Contrastive Analysis Hypothesis of Lado 1957). This critical observation is achieved by using large pillows shaped like IPA symbols in movement exercises that encourage people to "feel" these sounds on their bodies, and/or draw their attention more to the shape that their mouths make when articulating each sound. Intensive repetition of each sound (and example words containing that sound) made while holding the corresponding symbol pillow is meant to raise awareness of the sound as well as enable the student to associate the sound with the symbol more readily.

Since Colaianni puts the IPA transcription system at the forefront of his method (some may argue to an absurd degree), this raises the question of the use and importance of the IPA transcription system (or any transcription system) in SD learning. Certainly it is important in linguistics, and sometimes is utilized in foreign language learning and TESOL, but how effective and essential is it to SD learning?

I now discuss some dialect acquisition studies, in which participants of varying ages who have moved from their D1 (native) area to a D2 area were analyzed for their acquisition of the D2.

Dialect acquisition studies

The context of naturalistic dialect acquisition involves someone moving from one native language dialect area to another, such as when one moves from England to Ireland, Canada to Australia, New York to Oregon, or Bavaria to Berlin. It is a case of total immersion in the D2, with the majority of the people encountered being native speakers of this D2. We can easily see how the vast difference in context between naturalistic dialect acquisition and SD acquisition, but that does not mean there is no possibility of similarities between the two processes. In order to establish a baseline of knowledge with which to compare the two processes, I now summarize some important studies on naturalistic dialect acquisition regarding the success or failure of people achieving native-like D2 pronunciation and phonology.

Trudgill 1986 looked at the phonological development of 7-year-old twins who moved from southern England to Australia. Over a six-month period (their first six months of residence in Australia), their speech was recorded and analyzed for realizations of the vowels /oʊ/, /eɪ/ and /i/. It was found that at the end of the six-month period, there was no alternation between British and Australian realizations of these vowels in the twins' speech, but rather they had both fully acquired the Australian realizations of these vowel phonemes. Again, this accords with the critical

period hypothesis put forth by Lennenberg 1967. Since these twins moved to the D2 area before puberty, they were able to fully acquire (fairly quickly) the vowel phonemes of the D2. If there is indeed a sensitive or critical period for language acquisition (likely extendable to naturalistic dialect acquisition and SD learning), then it is important to understand how adult-age actors make phonological adjustments in order to suspend audience's disbelief.

In a related area, Trudgill also makes a distinction between what he calls "short-term accommodation" and "long-term accommodation". Short-term accommodation is a speaker adapting his/her speech, within a conversation or exchange, upon meeting someone from another social class or dialect area. In this situation, broadly speaking, one speaker may take on certain linguistic features of their interlocutor to appear more favorably to him/her. Long-term accommodation, on the other hand, is Trudgill's term for those people who move to a D2 area and adapt their speech over time to sound more like the D2 speakers, and it "may in time become permanent" (1986: 39). Chambers refers to this simply as "dialect acquisition" and argues that the difference between the two is in name only (1992: 675).

While the learning of an SD is definitely short-term in nature, the social situation of short-term accommodation is, again, much different from an actor attempting to learn an SD. However, there is an element of "wanting to appear favorably"- the actor wants to convince the audience that the SD is that character's D1 and distract attention away from the actor's own D1. Moreover, the actor is accommodating toward a version of the dialect which he hears in his head; an actual

native auditory source is (usually) not present in SD application, unlike with Trudgill's short-term accommodation.

The explanation of accommodation theory in Trudgill 1986 is important to establishing where SD application lies on the continuum from short-term accommodation → long-term accommodation/naturalistic dialect acquisition. SD techniques may be important if actors are found to be able to produce linguistically authentic speech patterns. Furthermore, it is possible that the effects of SD learning may be long-term, even though not technically permanent since the actor who has learned an SD does not permanently alter his day-to-day speech patterns.

In a more detailed study which attempts to establish principles of dialect acquisition, Chambers 1992 studied Canadian children whose families had moved from Canada to southern England. The children were evaluated for their use of the low back vowels /ɑ, ɒ, ɔ/, an important part of the vowel system of their D2 area, but representing contrasts absent from Canadian English. Phonological rules were also evaluated, such as the absence of the North American flapping rule, and lexical differences (such as D2 *queue* and *trousers* for D1 *line-up* and *pants,* respectively).

Rather than being purely descriptive, Chambers' study posits strong hypotheses to establish principles of naturalistic dialect acquisition. These eight principles of dialect acquisition are:

1) Lexical replacements are acquired faster than pronunciation or phonological variants.

2) Lexical replacements occur in the first stage of dialect acquisition and then slow down.

3) Simple phonological rules are acquired faster than complex ones.

4) The acquisition of complex rules and new phonemes splits the population into early and late acquirers.

5) Early in acquisition, both categorical rules and variable rules result in variability in the acquirers.

6) Phonological innovations are actuated as pronunciation variants.

7) Eliminating old rules occurs more rapidly than acquiring new ones.

8) Orthographically distinct variants are acquired faster than orthographically obscure ones. (Chambers 1992: 677-701)

Principles 3, 5, 7 and 8 can be used to construct phonological environments which test whether the principles can be applied to SD learning, and therefore whether it can be compared to naturalistic dialect acquisition. Chambers 1992 provides a well-defined framework in which to investigate SD learning and application. At this point it is necessary to define some of Chambers' terms.

From principles 1 & 2, the phenomenon of lexical replacements refers to the use of two different words for the same referent from one dialect area to the next: e.g. *trousers* in Southern England English (SEE) for *pants* in Canadian English (as in Chambers' study).

From principles 3 & 4, a simple phonological rule is one that has no exceptions - what Chambers calls an "automatic process" (1992: 682) such as North American flapping. Complex phonological rules, on the other hand, are ones that have a more "opaque output ... exceptions or variant forms ... or have in their output a new or additional phoneme" (1992: 682). An example of a complex phonological rule is

Vowel Backing in SEE; this is the realization of North American /æ/ as /ɑ/ "before voiceless anterior fricatives as in *plaster, bath,* [and] *laughing* ... and before clusters of /n/ + obstruents as in *dancing, branch, plant,* [and] *transmission*" (1992: 683). This particular rule is considered complex by Chambers because there are exceptions; some words with the appropriate environments have /æ/ instead of /ɑ/, such as *cafeteria, classic, Mass, ant, pants* and *cancer* (1992: 683).

In Chambers' study, it was found that the younger Canadians in the study (9 yrs.) were better than the older (14-17 yrs.) at acquiring the various dialect characteristics. Since the younger children acquired these vowel contrasts with more ease than the older children, the critical period hypothesis was supported once again.

By constructing elicitation data containing simple/complex, old/new and orthographically obscure/distinct rules from British and Irish dialect, Chambers' principles can be tested for validity in SD learning. Moreover, because Chambers' principles claim a relative difference in learnability of simple and complex rules, there is the possibility of a clear, quantified comparison between naturalistic dialect acquisition and SD learning. If we recall that Principle 5 states, "Early in acquisition, both categorical rules and variable rules result in variability in the acquirers" (Chambers 1992: 691), it is theoretically possible, with careful construction of elicitation data, to place SD learning along the continuum between early and late stage acquisition.

Munro et al. 1999 studied the dialect of adults who moved from Canada to Alabama. The goal was to determine whether untrained listeners (non-linguists) from

both dialect areas (Canada and Alabama) could somehow rate various speech samples from speakers from both dialect areas, as well as Canadians who had moved to Alabama, on a scale from "most American sounding" to "most Canadian sounding". These untrained listeners found that some Canadians living in Alabama (usually those who had lived there for a relatively long period of time) were rated to be rather close to "Alabama-sounding", by both the Canadian and Alabama listeners in the study. This experimental study suggests "that naïve listeners are sensitive to dialect change in adults" (Munro et. al 1999: 401).

More specifically, both the Canadian and Alabaman listener groups rated "Canadian immigrants to Alabama as having an intermediate degree of American accent" (Munro et al., 1999: 401). This is significant because it shows that listeners are able to identify native speakers who have only partially acquired a dialect of English, "whether the listeners themselves are speakers of the talkers' D1 or D2" (1999: 401). This is extremely similar to an audience being able to hear that an actor or group of actors has only partially applied a particular SD. Furthermore, since these results were presented in an experimental setting, it establishes a basis for determining what part of D2 acquisition the learning of an SD is most like.

Also useful was the identification of some phonetic and phonological features that would explain why the Canadian speakers were rated as having "an intermediate degree of American accent" (1999: 401). Two trained linguists examined both the articulation rates of the speakers, as well as the presence of Canadian-raised /aj/, realized as [ʌj], as opposed to the Alabaman monophthongal [a]. The articulation

rates were not found to be significantly different from each other, despite the lay impression (and stereotype) that "Southerners talk too slow".

The analysis of the realization /aj/, however, was a reliable indicator of American-ness or Canadian-ness, and its presence was correlated with the non-linguists' ratings of how American or Canadian they sounded. This finding is significant because "given the degree to which the [trained linguist] listeners were able to distinguish the speaker groups by this single segmental property" (Munro et al., 1999 : 399), it may have been the most salient feature that the untrained listeners relied upon to determine how American or Canadian the speakers sounded. This identification may be helpful in determining what features actors are relying on to facilitate their mimicry.

Munro et al. 1999 establishes experimental validity for the audience's reactions to SD, showing that naïve speakers can indeed be aware of subtle changes in phonetic information. More importantly, it also provides evidence in support of a key postulate of Flege 1995: "that the production and perception of speech sounds remain subject to adaptation across the life span" (Munro et al. (paraphrasing Flege, 1995) 1999: 401), providing support that the necessary modifications for SD usage are actually possible.

In summary, Chambers 1992 serves to provide a template for the construction and subsequent analysis of the sentences to be elicited from the participants, as well as a fairly clear and quantified "level of complexity" distinction with which to determine how "deep" the linguistic authenticity of SD usage actually goes. Furthermore, Trudgill 1986 and Munro et al. 1999 provide important results of long-term

accommodation/naturalistic dialect acquisition in both children and adults and help to establish where SD learning may fall on a short-term to long-term accommodation continuum. They may also provide evidence that the types of adjustments necessary for adults to sound native-like (as with some participants in Munro et. al 1999) are only possible after a relatively long period of immersion in a D2 area.

I now turn to findings in the areas of phonetic imitation and voice disguising.

Phonetic imitation/voice disguising

Phonetic imitation and voice disguising describe a wide range of phenomena, from the ability to alter phonetic features such as VOT, to perceiving and producing phonemes in various phonological environments, as well as the representation of phonological systems and subsystems in the minds of speakers and listeners. Phonetic imitation is thus, broadly speaking, a subfield of psycholinguistics, with certain aspects of it (such as accommodation) being sociolinguistic in nature. Studies of voice disguising typically are found in the forensic linguistics literature. Phonetic imitation studies have an obvious applicability to SD learning and usage, and voice disguising studies can help establish some possible limits of phonetic imitation and therefore SD learning.

Flege & Hammond 1982 looked at the imitation of Spanish-accented English by native English speakers to determine whether they could produce or perceive any non-distinctive phonetic features such as VOT and syllable final (de-) lengthening. Their study determined that, even in the "absence of an explicit external model"

(1982: 14), participants produced stops with decreased VOT, (a non-distinctive phonetic feature of Spanish and Spanish-accented English when compared) and "either reduced or eliminated final-syllable lengthening, a prosodic characteristic which is much less prominent in Spanish and Spanish-accented English than it is in English" (1982: 14).

Their study demonstrates a rather sophisticated level of phonetic awareness even in untrained speaker/listeners, and they state: "It seems unlikely that the speakers of this study could have produced the kind of phonetic modifications seen here without some form of perceptual 'awareness'" (1982: 11). Furthermore, those participants who had the most correct substitutions of Spanish segments in their appropriate environments, also had the most modifications at the phonetic level (of VOT and final syllable de-lengthening). Thus, these listeners were able to imitate accented English in the absence of a direct model (what I have been terming an "auditory source"), and to achieve a significant level of accuracy of imitation of non-distinctive features. Furthermore, since a lone actor using an SD occurs in the absence of a direct model or native-speaking auditory source, the findings of Flege & Hammond 1982 establish that SD application can be studied in an experimental setting.

Furthermore, it shows that SD learning could be of importance to language learning in general; if untrained speakers or listeners are aware of and able to imitate these non-distinctive features, then there is a possibility of achieving a higher level of phonetic and phonological accuracy with SD-training techniques. However, Flege &

Hammond 1982 did not study trained participants nor did they assess *phonological* accuracy in their participants' speech.

Markham 1997, a published dissertation entitled *Phonetic Imitation, Accent and the Learner*, is an invaluable resource for this thesis. From the broad set of claims and theories that Markham tackles, the most relevant here is his psycholinguistic representation of the phonological system and subsystems contained therein. Dialects with which the speaker has come in contact are considered subsystems of a larger system based on the L1 of the speaker (see Figure 3).

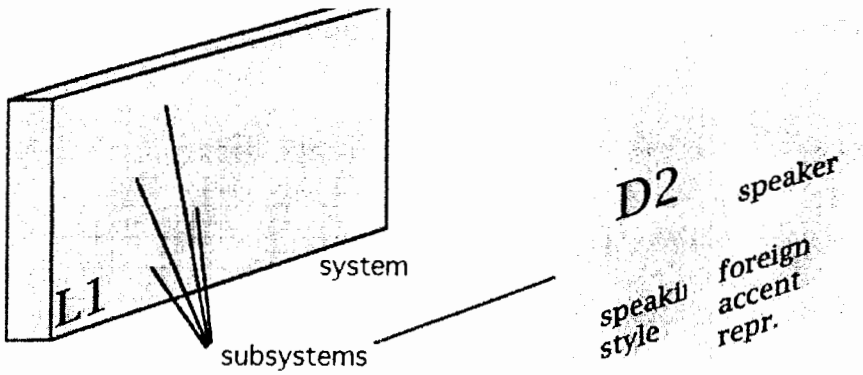

Figure 3 A hypothetical speaker's representational system, containing a number of subsystems: a second dialect (D2), a familiar speaker, a speaking style (e.g. sociolect), and a foreign accent he has been exposed to (figure and caption from Markham, 1997: 17)

AN SD is most likely represented as a subsystem, although possibly only partially developed; this idea will be expanded below.

Markham also proposes a model, which he calls the Imitative Acquisition and Function Model (ImAF), subtitled "a tentative description of linguistic learning and communication" (1997: 47) (See Figure 4).

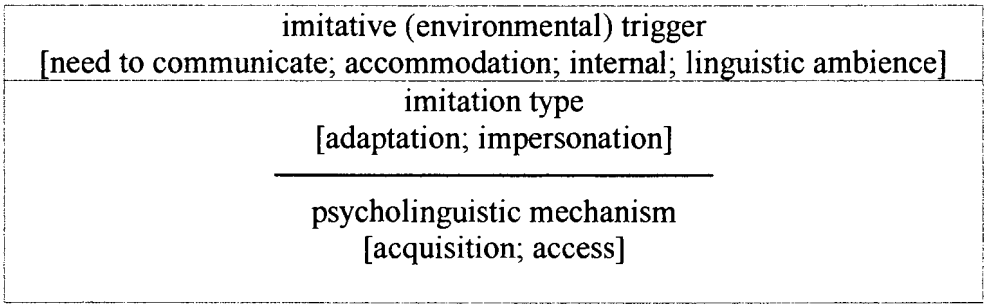

Figure 4 The Imitative Acquisition and Function Model (ImAF) (Markham 1997: 49)

This model has two levels, an environmental level which describes the various possible imitative triggers, and a process level, which describes types of imitation or the specific "linguistic imitative process" (1997: 49). Furthermore, he proposes that any type of imitation uses one of two psycholinguistic mechanisms: acquisition or access. Lastly, he describes the system used in the imitation (1997: 50-51).

It is necessary to clarify some of Markham's terms at this point. He gives examples of imitative triggers such as the "need to communicate; accommodation; internal..." (1997: 49). An internal trigger is governed by an internal decision or other "speaker-internal factors" (1997: 48). "Acquisition" is defined by Markham as "the mechanism used to establish, elaborate, or revise a system or representation" (1997: 50). However, "access", "involves the activation of an established system or subsystem ... in order to participate in a discourse act in a particular way" (1997: 50). Acquisition, as defined here, applies to both perception and production systems or subsystems. Furthermore, acquisition, partial or otherwise, must occur prior to access, since there would be no system or subsystem to access without acquisition.

SDs are broadly classified as "impersonation" for Markham: the environmental trigger he cites for this phenomenon is "internal"; the type of imitation used he calls "internal+impersonation"; he cites the system used as a dialectal subsystem (which, again, must be at least partially developed in order for there to be access to this subsystem) (2002, personal communication).

To clarify these terms further, an internal psychological trigger causes the use of impersonation and since the application of an SD in a performance has no direct model and no "reference to someone else's input" (Markham 2002, personal communication), the trigger for the change in speech is *internal*. Impersonation, a type of imitation, as defined by Markham is " ... where a speaker uses a speech style ... dialect, accent, or language for entertainment or expressive effect" (1997: 50).

To further clarify the psycholinguistic mechanism access in reference to using an SD, Markham states, "Anything the speaker can do *without reference to someone else's input* requires the existence of a subsystem, even if it is not fully developed" (2002, personal communication; emphasis in original). In other words, regardless of the quality of the output in applying an SD (or the quality of the internal representation of the SD), the existence of a subsystem is necessary for access of the SD to occur, since the actor is applying it without listening to a native speaker of that dialect.

This mechanism is relevant to both the audience's experience hearing an SD, and, most certainly, to the actor activating the imitation of a subsystem (D2/ SD) for use on the stage. From the audience's perspective, if they come away from a performance thinking an actor (or actors) sounded truly native, perhaps what the actor

was doing was enough to, in Markham's terms, access the subsystem (1997: 50). This access was facilitated by the actors' imitation of the dialect, and make them think that what they heard was native-like pronunciation of that dialect.

One of Markham's main claims is that phonetic and phonological acquisition, at the very least, are largely imitative in nature. In order to establish this as valid, participants (under minimal coaching) were given dialects in their L1 (Swedish) to imitate using isolated words, phrases and then longer texts. In another part of the experiment, participants were asked to do the same with words, phrases and texts from other languages (with which the participants were more or less familiar). It was found that some speakers "were observed to obtain... native-like pronunciation in a variety of tasks" (1997: 250), including imitating dialects in their L1 (Swedish). This measure was according to perceptual data collected from native speakers who listened to the imitations. This is significant, since Markham's participants were not subject to intense coaching of any kind, although they did all claim to have "phonetic talent", although it is unclear whether any had specific phonetic training (Markham 1997: 147).

The most native-like imitations were of words and phrases, but their native-like pronunciation broke down when reading from longer texts. With this in mind, the imitative techniques used in SD learning could prove to be important if it is found that people who study these techniques achieve more linguistic authenticity than those who have not studied them.

Markham's untrained (although phonetically talented, in their own self-selected opinions) participants were able to disguise their native dialects and sound native-like in their pronunciation of a D2, to an audience of phonetically trained listeners. However, it remains to be seen exactly how *linguistically authentic* actors trained in SD techniques can actually be, looked at through the lens of the simple/complex rules of Chambers 1992.

Markham later states that

> ...it is time that researchers into the nature of speech or sound learning turned to specific examination of salient cues to both perceived accent and the perception of sounds from one language system to another. *This* is the useful and important information for understanding for understanding phonetic and phonological acquisition [emphasis in original]. (Markham 1997: 253)

This statement directly supports the goals of this paper: to characterize just how sophisticated actors' phonetic/phonological imitation is, and how dialectal subsystems interact in the actors' mental representations. Furthermore, the concepts of access, the internal trigger, impersonation, and subsystems can all be used to explain the phenomena of learning and using SDs. It remains to be seen whether these impersonations, driven by Gardner and Lambert's (1972) instrumental motivation and sometimes very broad-based SD coaching techniques, bring about linguistic reality. SDs may have very little linguistic reality since SDs involve speaker-internal imitation of what the actor has heard in the past[4] which is stored in a psycholinguistic

[4] This SD may itself be, as we have seen, an imitation; it may have also been conventionalized through years of use within the theatrical tradition, a question for another thesis entirely.

subsystem[5]. Moreover, Markham's internal trigger for impersonation is an important device to the actor and deserves to be described more clearly and succinctly so that the actor may be served by Markham's work, and the vice versa.

In a study (separate from Markham, 1997) of the possibilities of voice disguise and the implications for forensic voice "line-ups", Markham found that some "phonetically talented speakers" (1999: 298) were able to disguise their own native dialects and produce consistent, convincing, and natural-sounding imitations of dialects other than their own. Reading from prepared texts which highlighted certain aspects of a dialect, recordings of these speakers were shown to listeners to see if listeners could determine what dialect the speaker was using. Again, this establishes an experimental basis for voice disguising in the context of the stage, as well as (again) establishing the need to study SD technique as a linguistic phenomena.

These studies of dialect acquisition and phonetic imitation are an important part of the psycholinguistic, sociolinguistic, and second language acquisition literature, but there has been little study of actors' use of SDs. Aside from the work of Stern and his accent reduction programs for advanced ESL learners, there is little work bridging the gap between pronunciation techniques in the ESL classroom and SD techniques. It is clear that the two fields could enrich and inform each other.

Moreover, there is little work done on what an actor actually does when utilizing an SD, the psychological status of that learning and its empirical basis. For

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[5] This may also be true from the audience perspective; if they have seen a show with the same SD before (say Irish), they may have developed their entire Irish subsystem based on conventionalized "Stage Irish".

example, what particular dialect features are actors trying to learn? Are actors only trying to achieve the stereotyped/ stigmatized (Labov 1972) features of the dialect? In other words, are the actors merely applying what has been most perceptually salient to them about a certain dialect, or are they really achieving a linguistically accurate representation of the dialect? Furthermore, have they acquired phonological rules of the D2 as a result of studying the SD? To what extent have they internalized aspects of the D2 phonology; i.e. has it become generative, making them able to apply it when improvising with the dialect, or reading something other than memorized text? With these questions in mind, I turn now to the rationale and specific questions asked in this study.

Chapter 3: Methodology

Rationale

These questions explore the possibility that the techniques used in learning SDs cause more than just naïve imitation, and assess their applicability to pedagogy. In the paragraphs below, "trained participants" refers to the group of participants who have taken a stage dialect class, while "untrained participants" refers to the group of participants who have not taken a dialect class.

Questions (1 a-d) represent a search for ANY evidence of similarity between using SDs and naturalistic dialect acquisition, and therefore compare Chambers' principles to the evidence of BOTH untrained and trained participants. Questions (3) and (3a) explore whether these techniques are effective in achieving linguistic authenticity, and therefore compare the data of the trained group to that of the untrained group.

The questions explored in this study are:

1) Does stage dialect acquisition (in *either* trained or untrained participants) follow a pattern similar to documented cases of naturalistic dialect acquisition or does it follow a unique pattern of its own?

   a) Specifically, is there evidence that simple phonological rules are acquired more quickly/easily than complex ones (hereafter referred to as "simple vs. complex")?

   b) Is there evidence of variability in the application of phonological rules, suggesting an early stage of acquisition in the participants' production (hereafter "variability")?

c) Is there evidence that eliminating old phonological rules occurs more rapidly than acquiring new ones (hereafter "old vs. new")?

d) Is there evidence that orthographically distinct rules are acquired more quickly than orthographically obscure ones (hereafter "orthography")?

2) What processes are actors aware of when learning a SD? More specifically, what cognitive devices or mental steps have they consciously taken in order to facilitate the rendering of a dialect?

3) Looking at SD production impressionistically or holistically, do specific or focused methods (either those outlined above or others) achieve more convincing SDs than no methods at all?

a) Do such methods produce greater mastery of phonological rules (according to Chambers' principles) than no methods at all? In other words, have these mental/physical processes made the actors who employ them achieve dialect authenticity in the D2?

4) Should and can these techniques be applied to teaching and learning pronunciation in the ESL classroom?

My first hypotheses will be adapted from a set of contrasts and principles adapted from those presented in Chambers 1992:

- simple vs. complex
- old vs. new
- variability
- orthography principles.

However, since his hypotheses are longitudinal in their predictions as stated, my hypotheses will be adapted to the discrete point cross-sectional method employed here. Furthermore, statistical tests (paired t-tests, with α=0.05) will be used where appropriate.

Hypothesis (1a) predicts that simple phonological rules are acquired faster than complex phonological rules in the learning of an SD. In other words, there will be more evidence of mastery of simple phonological rules *and* there will be more variability in the production of complex phonological rules. This distinction will present itself in the data as more errors in applying complex phonological rules than in applying simple phonological rules. Confirmation of hypothesis (1a) would suggest that learning an SD follows a pattern similar (with respect to simple vs. complex phonological rules) to naturalistic dialect acquisition. The data will be tested for statistical significance for the first part of Hypothesis (1a), comparing the three sets of simple vs. complex rules (two RP simple rules vs. two RP complex rules; Irish simple vs. complex rule).

Variability will be defined as the individual variance in the application of a particular phonological rule *between* participants. To clarify, a distinction is made between the variability which reflects the imperfect acquisition of a categorical rule (which a native speaker either applies at either 100% or 0%), and the perfect acquisition of a variable rule which has within-speaker variability. Since my data are only concerned with categorical rules, the definition I use here is the former.

Hypothesis (1b) speculates that both groups will exhibit a good deal of variability in their application of phonological rules. If this hypothesis is confirmed, it may suggest, according to Chambers' variability principle, that stage dialect learning is similar to the early stages of naturalistic dialect acquisition.

Hypothesis (1c) states that eliminating old rules is easier for the actor than acquiring new ones. This predicts that the data will exhibit more evidence of eliminating old rules than of acquiring new ones. If hypothesis (1c) is confirmed, it will again suggest that learning an SD is indeed like naturalistic dialect acquisition, and that Chambers' old vs. new principle applies to learning an SD as well.

Hypothesis (1d) speculates that there will be more evidence for the mastery of orthographically distinct variants than for orthographically obscure ones. If hypothesis (1d) is confirmed, it will suggest that the learning of an SD follows Chambers' orthography principle for naturalistic dialect acquisition.

The confirmation of all of the above hypotheses (1a-d) would strongly suggest that learning an SD is much similar to acquiring a D2, and that the two processes may be directly compared. Contrarily, if all of these hypotheses (1a-d) are disconfirmed, learning an SD may follow a completely different path.

Hypothesis (3) predicts that trained actors' speech will sound more like the target dialect than the speech of the untrained actors. The confirmation of hypothesis (3) will support the use of these techniques in training actors.

Hypothesis (3a) states that trained actors who employ stage dialect techniques will show greater mastery of simple *and/or* complex phonological rules than untrained

actors, thereby achieving a certain level of "linguistic authenticity". A corollary to hypothesis (3a) predicts that trained participants will eliminate old phonological rules and acquire new ones more than the untrained participants. If hypotheses (3), (3a) and the corollary to (3a) are all confirmed, it will strongly suggest that the application of SD techniques brings about more linguistic authenticity than in untrained dialect imitation.

Methods and Design

The data come in the following forms, collected in the given order:

(1) participants' answers to a brief set of interview questions

(2) elicited speech

(3) post-elicitation comments gathered while listening to a playback of their elicited speech.

The interview consisted of questions about their use and learning of the dialect, given below, and was conducted before they produced the accented speech. This was an effort to calm them (if they were nervous).

1) Did you use the IPA when learning the dialect?

2) What did you use as a target for learning the dialect (tape of native speaker, tape of imitation, native speaker acquaintance, movie set in native area of D2, etc.)?

3) What special techniques did you employ outside of these first two (if at all)? Was there a particular dialect coach whose techniques worked best for you?

4) How long did you spend trying to learn the dialect?

5) Were there any features that seemed to be more difficult than others?

6) Did you spend more time on any one dialect than others? Either as a result of its difficulty or because of your preference for that accent?

7) Did you imitate dialects as a child or adolescent? When did you start and what dialects would you imitate?

Other questions on related topics arose in the course of the interview and were pursued as relevant.

For the elicited data, participants were asked to read two sets of sentences. However, before they were given the first set of sentences, they were told to prepare their voice as they would for a performance which utilizes the BBC/RP/Standard/Upper-class British accent. They read each sentence in the first set (Appendix A) first in their own dialect, and then in the D2. In the data, the sequence above looks like this: sentence #1 in their D1, followed by sentence #1 in RP; this process was repeated for each sentence. After they rendered the sentence in RP, they were asked whether they were pleased with their reading and were given another chance if they wished. This was also a way of monitoring to make sure the participants' nerves weren't affecting the data negatively. A note on the ordering of

sentences: each subject was given the same set of sentences, but in different orders to ensure that all their renderings were not affected by a "list" effect. Furthermore, sentences were chosen over word lists, as Markham claimed that "the [imitation] literature [seems to agree] that isolated words are inappropriate objects of study" (1997: 144). All data were recorded with a portable CD burner to ensure quality.

The technique of having participants read in their own dialect first was also taken from the design of Markham 1997; it was useful in that it circumvented the need for a detailed contrastive analysis. Giving the participants more than one chance to read each sentence in dialect is taken from the same source. However, Markham also had his participants select which attempt they thought was the most representative of the imitated dialect. This technique of selection by the participants was beyond the scope of this study, but a modified approach was used. After all the sentences were read aloud, the participants listened to the recording and were asked to comment on their "performance"; these comments appear as part of the qualitative data.

The RP sentences for elicitation contain 12 instances of the simple phonological rule of North American Flapping; an orthographically distinct rule (Chambers 1992). In the case of this rule, the majority of the environments chosen (11/12) involve /t/→[ɾ] as opposed to /d/→[ɾ] . The /t/ environments were favored over /d/ environments since it was predicted that it would be hard to distinguish [d] from [ɾ] on the recordings, but fairly easy to distinguish [t] from [ɾ].

There are also 13 instances of environments which are R-less for RP speakers and R-full for most North American speakers of English; this is also a simple

phonological rule, but an orthographically obscure one (Chambers 1992). Lastly, the passage contains a complex phonological rule that governs the neutralization of the RP /ɑ:/:/ɒ/ contrast in American English. There are 10 environments for RP /ɑ:/ and 9 environments for RP /ɒ/. In all cases, the realization is /ɑ/ in Pacific NW American English. This rule is what Chambers describes as a complex phonological rule – it is not easily characterizable by one simple phonological description, has an opaque output, or "has a new or additional phoneme in its output" (1992: 682). In Wells 1982, the PALM word list (*palm, alms, father, bra, ma, mamma, pappa*) is realized as [ɑ:] in RP and [ɑ] in American English. However, the CLOTH list (*cough, broth, cross, long, Boston*), realized variably in American English as [ɑ] and [ɔ], has a new sound for a speaker of American English, [ɒ]. The same is true of the LOT list (*stop, sock, dodge, romp, possible, quality*); this list is realized as [ɑ] in American English, and [ɒ] in RP (Wells, 1982: xviii-xix). If we look at what happens in Table 1, we can see the split more clearly.[6]

Table 1 Phoneme split from Gen American /ɑ/ into RP /ɒ/ and /ɑ:/ (adapted from Wells, 1982: xviii-xix)

	CLOTH	LOT	PALM
Gen. American	ɑ	ɑ	ɑ
RP	ɒ	ɒ	ɑ:

[6] Note: Table 1 is based on the variety of English spoken in the Pacific NW, which realizes the CLOTH list with an [ɑ] vowel.

The second set of sentences (see Appendix B) contains examples of simple and complex phonological rules from Irish English. Again, before they were given this second set of sentences, they were told to prepare their voice (or do whatever they needed to do) as they would for a performance involving the Irish accent. The participants were again asked to read each sentence out loud in their D1 and then in an Irish accent. They were asked whether they were pleased with their Irish dialect reading of each sentence, and given another chance to record the sentence if they wished. Also, they listened to the recording after they rendered all the sentences, and were asked to comment on their "performance" in general.

The Irish sentences contain 11 instances of obligatory contexts for clear /l/ in final position; this is an example of a simple phonological rule in Irish English (Wells 1982). These sentences also contain 11 instances of a complex phonological rule in Irish; one that contains a new phoneme for North American English speakers, that of /t̪/ (a voiceless alveolar slit fricative; symbol used following Wells, 1982). This is an allophone of /t/ in Irish English and is found in postvocalic position as in *jetty* [dʒɛt̪i], *yet* [jɛt̪], *bottom* [bɑt̪əm] and *hit* [hɪt̪] (Wells, 1982: 429). This rule was chosen over the rule governing the use of [t̪] and [d̪] for /θ/ and /ð/, respectively, as dental [t] and

[d] (while new phones for the American user) when recorded, [t̪] and [d̪] were thought to be difficult to distinguish from [θ] and [ð] (or [t] and [d] for that matter)[7].

This elicited data was transcribed and analyzed in as much phonetic detail as was needed to determine whether participants applied the phonological rules described above.

After they were finished producing both sets of sentences, participants listened to their productions. The questions that were asked before they listened to the recording were:

1) As you listen, tell me a) if you are satisfied with your productions and b) why or why not.
2) Also, were you thinking at all about adjusting your articulators before/during your production? If so, what specific adjustments were you thinking about/trying to make?
3) Were you thinking about specific words and how they are pronounced? Were you *applying* any special techniques, either your own or a dialect coach's, to get these productions? If so, what were you thinking about in order to apply them?

The process, with interview, elicitation, and reflection, usually took no more than one hour.

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[7] This feature would be promising for examination as it is often stereotyped by people imitating Irish dialect as in saying [t^{h}]*irty* [t^{h}]*ree and a* [t^{h}]*ird* for *Thirty three and a third.*

The participants were mostly native speakers of Pacific Northwest American English, and were roughly the same age (18-32) (well past Lennenberg's (1967) critical period (puberty)). Furthermore, the participants consisted of two groups: 6 non-professional, student actors who have attended a stage dialect class and are familiar with stage dialect techniques (Group A, "trained participants"), and 6 non-professional student actors who have *not* taken a stage dialect class, and who are not familiar with these techniques (Group B, "untrained participants"). Within each group, there were 3 male and 3 female participants.

An attempt was made to avoid using participants with extensive experience in an L2 or D2 because of a "length of phonetic experience" effect. This effect is defined here as the ability to effectively imitate the phonology of an L2 or D2 with unusual ease when compared to other participants. This may be due to one of several circumstances: extensive experience applying stage dialects in several productions, classes or workshops, fluency in an L2 phonological system as the result of a period of immersion in an L2 area, or other situations which promote L2 fluency such as childhood bilingualism or being a professional translator. However, because of time constraints and a lack of a large pool of actors to choose from, some participants did have either L2 or D2 immersion experience. This is explicated in detail below in the results section.

Chapter 4: Results

I now discuss the results, starting with the quantitative results from the elicitation and then proceeding to the qualitative results from the interviews.

Quantitative Results

I discuss the findings in the order given above in the rationale.

With regard to hypothesis (1a), which states that simple rules are acquired faster than complex rules in SD learning, at a glance the RP data *do* show more mastery of simple phonological rules than of complex rules. The simple phonological rules of r-lessness and lack of North American flapping (Chambers 1992), show a success rate (with trained and untrained participants taken together as a group) of 70% and 77% respectively, while the RP phoneme spilt of American /ɑ/ into RP /ɒ/ and /ɑ:/, both complex rules, show only 61% and 69% respectively. (See Figure 5 below.)

Figure 5 shows the success rates of both groups together, with each rule represented on the X-axis: 1 refers to RP r-lessness, 2 shows the rate for the lack of North American flapping, 3 shows the rate for the RP /ɒ/ environments, 4 shows the RP /ɑ:/ environments, 5 shows the rate for the Irish clear /l/ environments, and 6 shows that of the Irish /t̪/ environments.

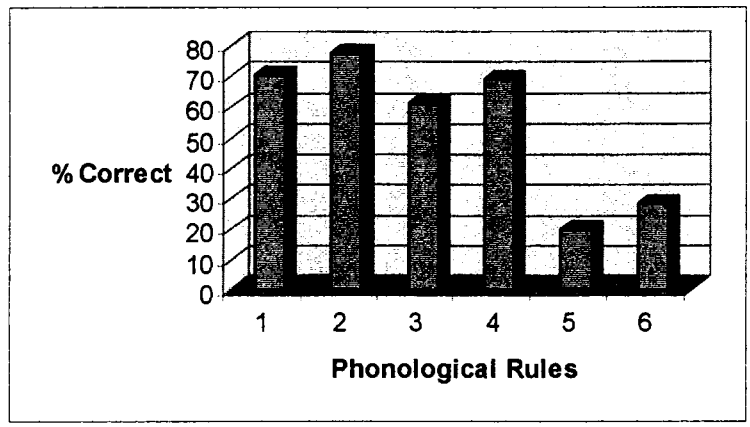


Figure 5 Success rates by rule

However, even though the group performance on both simple rules (70% and 77%) was higher than on the complex rules (61% and 69%), a single-tailed paired t-test did not show these differences reached significance. When comparing performance on the simple r-less rule to the complex rule of RP /ɒ/ (t=0.915; df =11), a p-value of 0.189 was found. Similarly, when comparing the simple rule of lack of North American flapping to the complex rule of RP /ɑ:/ (t=1.081; df =11) a p-value of 0.151 was found.

Regardless of statistical tests, if we try to establish an overall pattern of change by making within-speaker comparisons of simple vs. complex rules, we see from Figures 6 and 7 that six speakers (participants 1, 2, 3, 8, 11, 12) performed better on the simple rule than on the complex rule, and six speakers showed the opposite results (participants 3, 5, 6, 7, 9, 10). So, half of the participants' data for these two rules went in the predicted direction of having higher success rates for the simple rules. On the X-axes in Figures 5-11, participants1-6 (light shading) are the trained group, and participants 7-12 (dark shading) are the untrained group.

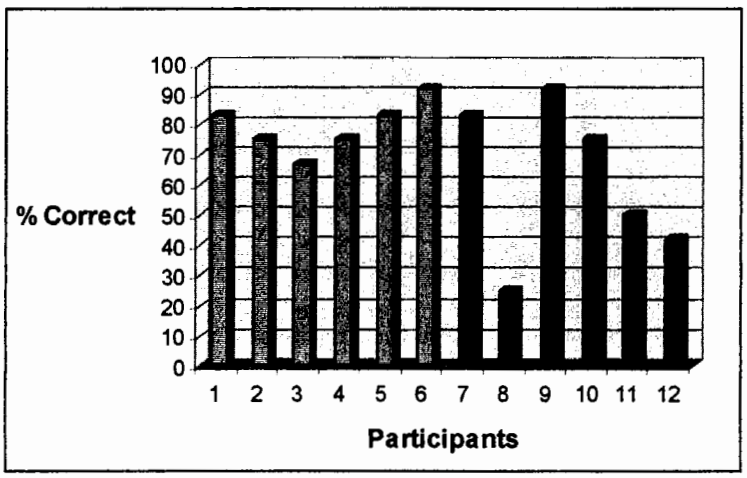


Figure 6 Success rates for RP r-less environments (simple)

It is important to try to explain the (poor) performance of an outlier; the outlier in Figure 6, participant 8 (UF2) did considerably worse (at 25%) on r-less environments than the others. She reported being frustrated with her RP SD readings in general and did several takes of some of the sentences with /r/'s in them. She also said she didn't understand my directions entirely: "I didn't know what 'upper-class British' meant- it was just my blanket English accent, not a specific one". This may have been a very difficult dialect for her, and frustration may have caused her to perform poorly. Or, she simply does not have an RP subsystem (Markham 1997: 17) developed enough to know that it is an r-less dialect.

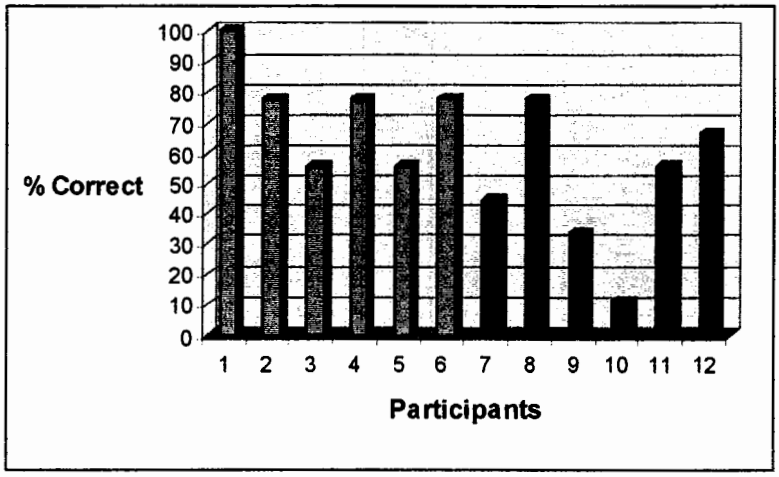


Figure 7 Success rates for RP /ɒ/ environments (complex)

Similar within-speaker results are found when comparing the simple and complex rules from Figures 8 and 9: seven speakers performed better on the simple rule (participants 1, 3, 5, 6, 7, 10, 12), four performed better on the complex rule (participants 2, 8, 9, 11), and one did equally well on both rules (participant 4). So, even without statistical significance, seven participants' data (when comparing these two rules) went as predicted, with higher success rates on the simple rules than on the complex rules.

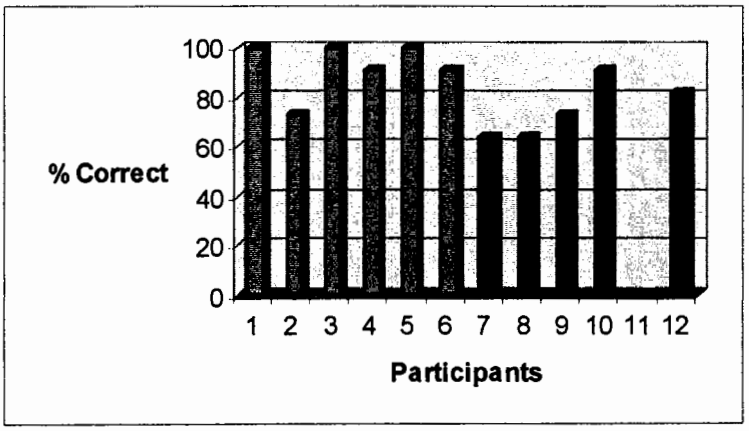


Figure 8 Success rates for lack of North American flapping (simple)

If we look at the outlier (speaker 11/UM2) in Figure 8, we see that he produced no /t/'s in the /r/ environments at all. This is because, presumably he did not understand what I meant by "upper-class" or "Standard British". Impressionistically, his SD readings for RP sounded very Cockney and indeed his entire data set for North American /r/ environments contained [ʔ] instead of [t]'s. This is interesting, considering his mother is English, although he did not say whether her accent was "upper-class/Standard" or Cockney.

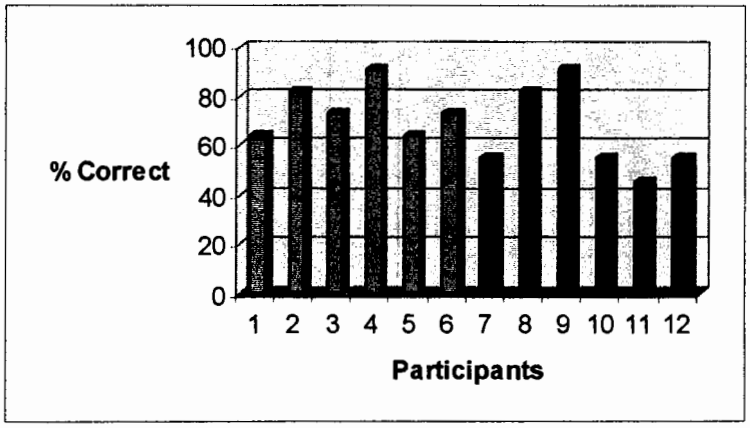


Figure 9 Success rates for RP /ɑ:/ environments (complex)

The Irish rules did not support the first part of Hypothesis (1a) at the group performance level. The simple Irish rule of applying clear /l/ in American dark /l/ environments showed a group success rate of 20% while the *complex* rule of applying the Irish phoneme /t̪/ showed a success rate of 28%. (See Figure 5 above; Figures 10 and 11 below.) As a result, neither the RP nor Irish data support the part of Hypothesis (1a) that predicted there would be more evidence of mastery of simple rules than of complex rules.

When we look at the Irish data on a within-speaker basis, comparing Figures 10 and 11 (see below), we see that there are five speakers who performed better on the simple rule (participants 6, 7, 9, 11, 12), five who performed better on the complex rule (participants 1-5), and two who performed equally as well on both rules (participants 8 and 10). The outlier (participant 8/UF2) did not produce any correct tokens for either the simple or complex Irish rules; she said that she "couldn't think of a character for Irish ... I couldn't hear it in my head as a result". This suggests she has an underdeveloped subsystem, or no subsystem at all for Irish dialect (Markham 1997: 17).

However, there is no obvious pattern to performance on the simple vs. complex phenomena beyond the identification of those speakers who performed better on simple rules and those who performed better on complex rules. A within-speaker, across rule comparison showed that only one performed consistently better on both RP complex rules (participant 9/TM3) than on RP simple rules. No speaker was found to be consistently better at all the complex rules, across the two dialects, although speakers 2, 3 and 5 performed better at both the Irish complex rule and one or the other of the RP complex rules. Because of this erratic behavior, no obvious within-speaker pattern was found across the dialects for the simple vs. complex phenomenon.

Furthermore, the data were checked for group patterns based on gender or age. Age did not yield a noteworthy result; however, it was noted that the females, as a group and across all three complex rules performed at 58%, while the males performed at only 48% for the complex rules. Males performed at an average of 56%

for the simple rules, and females at 55%, obviously not a noteworthy difference in performance.

We recall that the second part of Hypothesis (1a) predicts more variability in the application of complex phonological rules than in simple rules. The RP data do suggest more variability in the application of complex rules than in the application of simple rules. To give an example, we see that r-lessness has more consistency, overall, than the RP /ɒ/ environments do. (See Figures 6 and 7 above.) We see that the range for the r-less data is from 25% to 92% while the range of the RP /ɒ/ environments is from 11% to 100%.

Indeed, it could be argued that both groups are acquiring both the simple and complex rules variably. However, if we look at just the trained group we see that all perform at 60% or better and 3 of the 6 are above 80% for the simple rule, while for the complex rule for RP /ɒ/ shows 5 of 6 below 80% and 2 of those below 60%, showing more variability for the complex rule. The untrained group shows a similar amount of variability for the simple rule, with 3 of 6 performing at or above 75%, and the rest performing at or below 50%. However, the untrained group showed almost as much variability on the complex rule as they did on the simple rule, with 3 of 6 performing from 55-78%, and the others at or below 44%.

Another way to look at variability is to look at the ranges and medians within each rule. The range of the entire group for the simple rule was 25-92%, with a median of 75%, while the range for the complex rule was 11-100%, with a median of 61%. This gives a spread for the simple rule of 67%, while the spread for the complex

rule is 89%, a considerable difference. If, then, we are to take these as an indication of amount of variability, we see more variability for the complex rule.

The data for lack of North American flapping, when compared with the data for RP /ɑ:/ environments, show a similar pattern, as shown in Figures 8 and 9 (above). When we look at the trained participants (1-6), we see that for the simple rule of a lack of North American flapping, 5 of 6 of them are at or above 90% correct. In contrast, 5 of 6 of them are at or *below* 80% for the complex RP /ɑ:/ rule. The untrained participants' data show a similar pattern, with 5 of 6 at or above 60% for the simple rule, and 4 of 6 at or *below* 55% for the complex rule. This would suggest, again, more variability in the application of complex rules than in simple rules.

For the Irish simple and complex rules, we see a similar picture. There is massive variability between participants for the simple rule (governing clear /l/ in American dark /l/ environments), with no participant scoring greater than 45%, and two not producing any [l]'s in dark /l/ environments at all, as seen in Figure 10. For the complex rule of Irish /t̪/ environments; the best participant scored 90% while two did not produce any [t̪]'s at all (Figure 11). Thus, there is more variability for the complex rule, as the range for the complex rule is 0-91% while the range for the simple rule is half that, 0-45%.

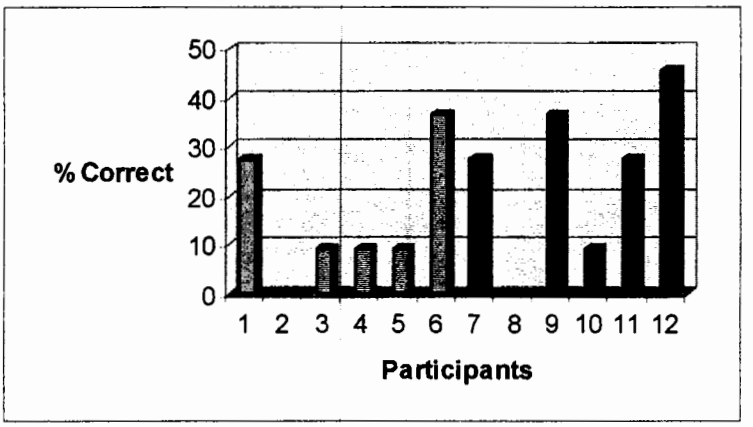


Figure 10 Success rate for Irish clear /l/ environments (simple)

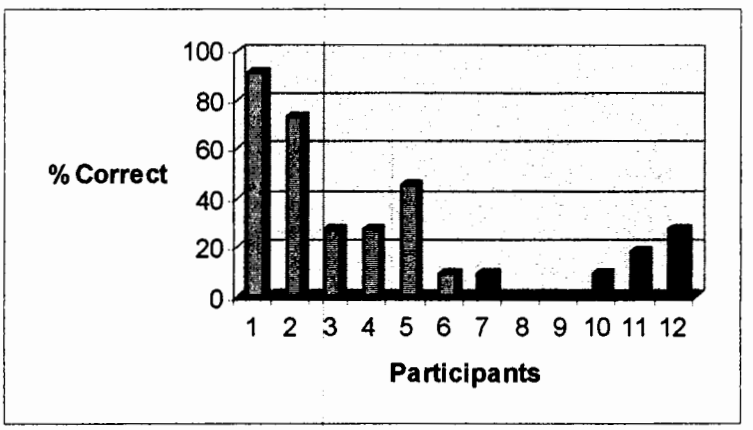


Figure 11 Success rate for Irish /t̪/ environments (complex)

In summary, the RP and Irish data do not support the first part of Hypothesis (1a), since there was not found to be statistically significant differences between the performance on simple vs. complex rules. With a higher number of participants, however, the differences could prove to be significant. Nonetheless, both the RP and Irish data show a consistent difference in variability between the simple and complex rules, with a higher range of variability in the complex rules. This part of Hypothesis (1a) is therefore tentatively supported by the data. However, since the data support

only the second part of the hypothesis, the results for Hypothesis (1a) are inconclusive. Thus Hypothesis (1a) requires further investigation.

Hypothesis (1b) predicts that both the trained and untrained groups will exhibit a good deal of variability in their application of phonological rules. Again, it finds support in that the range of production variability is quite broad for each of the rules. We see that most have a range from approximately 40% correct to around 100% correct, and 3 of the 6 rules have a range beginning at 0 correct. While these are the extreme ends of the data, these numbers suggest a fair amount of variability among the participants, for if there *weren't* variability, or if there were *less* variability among the participants, we might find within-rule ranges from 80-100% or even 0-20%, but not such ranges as we see in Figure 12 below.

Based on these ranges, there seems to be sufficient evidence on the surface to support Hypothesis (1b). However, it could be argued that the variability seen in this sampling is a result of the heterogeneity of the group; they are all at different stages of acquisition, and when compared to one another, for very different reasons. Some of the trained group hadn't used SDs for several years and may have experienced some attrition; others in the untrained group had little or no exposure to Irish dialect at all. In contrast, the participants in Chambers 1992 had roughly the same amount of exposure (approximately 2 years) to the D2. Furthermore, it was 2 years of immersion in the D2 area. As a result, the variability reflected in the data from Chambers 1992 was more likely due to differences such as age. Due to this extensive length and depth of exposure to the D2 in Chambers' participants, it could be argued that their

variability is much easier to characterize, and that the group studied here was too heterogeneous to compare to Chambers' group.

It could also be argued that the performance variability displayed by the group here is of the same type observed by Chambers 1992, but each of the participants studied here are at a considerably earlier stage of acquisition than the participants in Chambers' study. This early stage of acquisition observed here is likely due to an overall lack of prolonged exposure to a reliable auditory source as well as a lack of prolonged period of time practicing and applying the SD[8]. Hypothesis (1b) is therefore tentatively accepted.

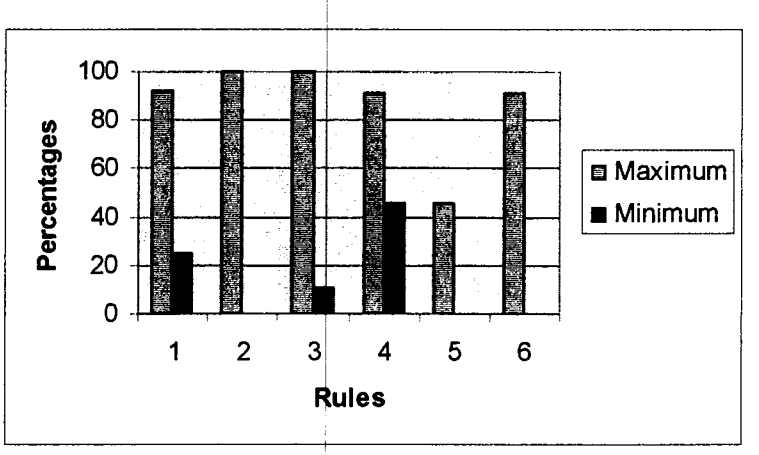


Figure 12 Maximum and Minimum success rates by rule

Figure 12 shows the maximum and minimum success rates of both the untrained and trained groups taken together. On the X-axis, 1 refers to RP r-lessness, 2 shows is the lack of North American flapping rule, 3 is the RP /ɒ/ environments, 4 is

[8] Most participants reported spending no more than 2-3 months on any given dialect; this was also limited mostly to time spent in rehearsal or memorizing lines and (presumably) not an activity engaged in during all waking hours as in naturalistic dialect acquisition.

the RP /ɑ:/ environments, 5 is the Irish clear /l/ environments, and 6 shows that of the Irish /t̪/ environments.

Support for Hypothesis (1c) is shown by a 77% success rate (total between trained and untrained participants) for eliminating the old rule of North American flapping and 61% total success rate for acquiring the new rule of RP /ɒ/. However, the difference of achievement is not statistically significant; a single-tailed paired t-test ($t = 1.629$; $df = 11$) showed a p-value of 0.066. Again, it is possible that with more participants the differences could prove to be significant. As argued above for Hypothesis (1a), Hypothesis (1c) is not rejected in all cases for all participants; 8 of the 12 participants (3-7, 9, 10, 12) showed a higher success rate for eliminating the old rule than for acquiring the new rule. Even if this is not statistically significant, it is a majority of the data showing the predicted outcome.

Furthermore, the hypothesis is not supported by the data from the Irish rules. We find that between the two groups, there is a success rate of 20% for eliminating the old rule involving dark /l/ ([ɫ]) from their speech, while there is a 28% success rate for acquiring the new rule involving Irish /t̪/. Since there is negative support for both sets of rules, the results for Hypothesis (1c) are inconclusive. Thus Hypothesis (1c) is needs further investigation.

Hypothesis (1d) states that orthographically distinct rules will be acquired faster than orthographically obscure ones. The data support this; the total percentage correct for the orthographically distinct rule (eliminating North American flapping) is

77%, while the success rate for the orthographically obscure rule of RP r-lessness was 70%. However, when a single-tailed paired t-test was performed (t= 0.921; df=11), these differences in performance we re not found to be significant (p=0.188). Thus the results do not support Hypothesis (1d), and it is therefore rejected. However, the data did go in the predicted direction.

Interestingly, there was a tendency for those who had studied the IPA to do better on both the orthographically distinct *and* the orthographically obscure rules than those who did not study the IPA, as seen in Table 2:

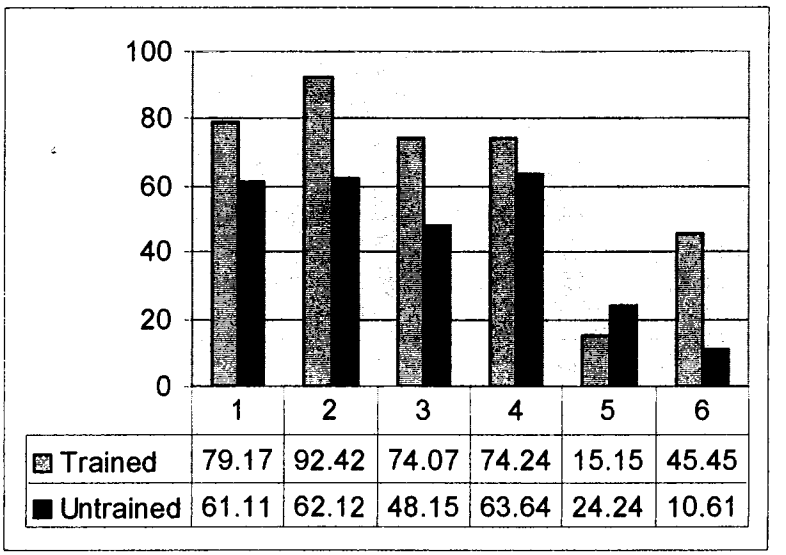
Table 2 Performance on r-less and lack of NA flapping, based on IPA experience (or lack of)

	No IPA	IPA
r-less	55%	81%
no [ɾ]	60%	90%

Perhaps the reinforcement of a relatively unambiguous orthography system such as the IPA provided more awareness of the differences in pronunciation of these rules and explains the much higher performance of those participants familiar with the IPA. After all, it could be argued that the IPA is orthographically distinct in its representations of any dialect or language; this is after all its goal. However, as elaborated below, many reported not remembering much of the IPA they had learned. Moreover, there is no difference in English orthography <t>, <d>, and <r> and the IPA symbols /t/, /d/, and /r/, and therefore there may be little effect participants' performance on these rules.

For Hypothesis (3), from a purely impressionistic point of view, the trained actors *did* sound more like their target dialects than the untrained group. However, this was more true of the RP sentences than it was of the Irish sentences; the trained actors sounded more obviously "RP" or "upper-crust British" than the untrained actors. Even so, some of the trained group resorted to pompous, affected stereotypes when reading the RP sentences. That is, the participants who assumed this character sat very rigidly, held their heads high, and enunciated their readings very precisely. With the Irish SD renditions, only half of the trained participants sounded more Irish than their untrained counterparts. All but one of the trained participants attempted to imitate the "lilt" (as Herman & Herman 1943 call it) or intonation of the Irish dialect, to varying degrees of success.

For Hypothesis (3a), we find support in that for 5 of the 6 rules, whether simple or complex, the trained participants did at least 10% better than the untrained participants, and averaged 24% better than the untrained group for those rules, as shown in Figure 13. Even though the trained participants performed worse on the Irish clear /l/ rule, there is still considerable support for Hypothesis (3a) in this rule to suggest that studying SD techniques can produce linguistic authenticity more than not studying them (See Figure 13).



	1	2	3	4	5	6
Trained	79.17	92.42	74.07	74.24	15.15	45.45
Untrained	61.11	62.12	48.15	63.64	24.24	10.61

Figure 13 Total success rates, by group and rule

Again, on the X-axis, 1-6 represent the rules as in Figures 5 and 12.

To answer the corollary to Hypothesis (3a), we see again that the trained group did do better than the untrained group at eliminating old rules: for North American Flapping, the trained participants had a 92% success rate, whereas the untrained group performed at only 62%. Furthermore, the trained group were also more successful at acquiring new phonological rules: for the RP /ɒ/, they showed a 74% success rate while the untrained group showed only a 48% success rate.

However, one of the Irish rules shows a different pattern. The trained group were worse at eliminating the old rule governing dark American /l/'s (trained=15%; untrained=24%), but were better at acquiring the new Irish /t̪/ rule (trained=45%; untrained=11%). Since the trained participants were better at eliminating the North American flapping rule and better at acquiring the new RP /ɒ/ and Irish /t̪/ rules, but

worse only at eliminating the American dark /l/ rule, there *is* in general, support for the corollary to Hypothesis (3a). In general, then, trained participants show a more advanced level of applying phonological rules in the SD than the untrained participants do.

Although not a specifically stated hypothesis, it is useful to compare the performance of two other subgroups: those participants familiar with the IPA to those who were not[9]. (See Figure 14).

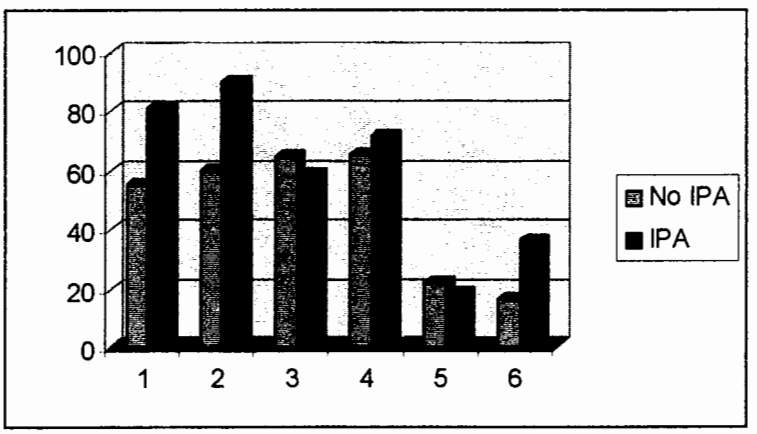


Figure 14 Group performance based on familiarity with IPA

On the X-axis, 1-6 represent the rules as in Figures 5, 12 and 13.

From Figure 14 we see that the those who were familiar with the IPA performed better on 4 of the 6 rules, and only performed worse on the RP /ɒ/ rule and the Irish clear /l/ rule. Although this new group ("IPA familiar") did not perform consistently better, the data nonetheless shows a majority of the rules having a better performance rate if

[9] This is different from the trained/untrained distinction, as one trained participant was not familiar with the IPA, while two untrained participants had used the IPA in linguistics classes.

the participant was familiar with the IPA. However, as stated above with regards to Hypothesis (1d), it will be shown that many said they did not retain much IPA after (or even during) the SD class. So, even if the IPA familiar group showed better performance on 4 of 6 rules, it is difficult to claim causality for this performance.

Summary of Quantitative Results

In summary, since Hypotheses (1a), (1c) and (1d) were found to have inconclusive support on the statistical level, I am unable to say with confidence whether SD acquisition should be compared directly to the early stages of naturalistic dialect acquisition. This is not to reject Hypotheses (1a), (1c) and (1d) completely, however. With more participants, differences in performance for these Hypotheses might reach statistical significance. However, Hypothesis (1b) was found to have tentative support; SD learning possibly exhibits similar variability (albeit at an extremely early stage of acquisition) to that observed in naturalistic dialect acquisition.

Furthermore, taken together, Hypothesis (3), (3a) and its corollary suggest that the trained group studied here *does*, on the surface, produce speech more like the target dialect, *does* achieve greater linguistic authenticity, and *does* show a more advanced level of awareness and application of phonological rules than their untrained counterparts.

Error Analysis

Two noteworthy error patterns appeared in the data for both r-lessness and RP /ɑ:/. In the r-less data, there are SD readings that were r-less in nature, yet did not contain the *correct* RP vowels for those environments. For instance, some participants produced [ɔ] for *are* instead of RP [ɑ]. This type of error shows an awareness of the existence of r-lessness as a feature, but a lack of awareness of the complexity (not in Chambers' sense, necessarily, since r-lessness is considered a simple rule). That is, participants who made errors that were r-less but not RP in their rendering show some intermediate stage between American r-full speech and authentically RP r-less speech. This would perhaps disappear with coaching. Notably, Chambers 1992 does not mention this as a feature of naturalistic dialect acquisition. Perhaps it is does not occur in the speech of people immersed in the D2 area since they are constantly in the presence of native speakers of the D2. Therefore, it is likely that the immigrants' pronunciation of a given r-less token is either r-less and RP in quality, or American, having no intermediate stage whatsoever, since their subsystems (Markham 1997: 17) develop in the presence of native speaker D2 models. It could also be due to the lack of the [ɔ] / [ɑ] contrast, particularly in the speech of Oregonians.

Furthermore, the RP /ɑ:/ environments had errors that showed an overgeneralization of the RP /ɒ/ vowel. The trained participants overgeneralized this vowel (on average, as a group) in 24% of the RP /ɑ:/ environments, while the untrained group overgeneralized in 29% of these environments. This

overgeneralization may be a result of RP /ɒ/ being a particularly salient feature to American ears, and therefore part of their subsystems (Markham 1997: 17). This could be considered similar to the phenomenon of hypercorrection in pronunciation pedagogy, as when a highly proficient non-native speaker of English uses [t]'s and [d]'s instead of [ɾ]'s in North American /ɾ/ environments. Similarly, perhaps these participants hear the RP [ɒ] vowel as the most salient feature (perhaps precisely because it is a new phoneme) and therefore assume that it is present (incorrectly) in the PALM list environments as well as in the correct environments of the CLOTH and LOT lists (Wells 1982: xviii-xix).

This is also not unlike the findings of the naturalistic dialect acquisition study of Payne 1980 (as cited in Chambers 1992), in which she studied the vowel system of the King of Prussia neighborhood in Philadelphia. It was found that both immigrant children under 14 years old *and* children born in the neighborhood to immigrant parents were unable to completely acquire a complex rule involving the /æ/ vowel, even though they were able to acquire simple rules in the dialect. It could be argued that the participants' application of the RP [ɒ] vowel, even though its complex status as a new phoneme did not make it entirely unavailable for production (9 of 12 applied it in /ɒ/ environments at a 50% success rate; the remaining 3 at between 10-40%), its ultimate application was *simplistic* in nature due to this overgeneralization of environments.

All participants overgeneralized in this manner except for TM1 who did not use the /ɒ/ vowel at all in the /ɑ:/ environments. This is likely a result of the 2½ years he spent in Oxford, UK, giving him a more robustly developed subsystem for RP. In fact, it could be argued that his immersion in the D2 area might disqualify him for this study. However, even though his data do show more awareness of the complexity of distribution of the /ɒ/ and /ɑ:/ vowels, he was certainly not at 100% for all RP environments and (impressionistically speaking, to my ears) has not made any permanent changes to his native Maine accent.

Taking the results from the stated Hypotheses and the error patterns together, we can see that despite the differences in sociolinguistic context and lack of direct availability of native auditory sources, there are some similarities, enough to warrant further investigation, between the observed effects of SD learning to observed results of naturalistic dialect acquisition (Chambers 1992; Payne 1980).

I now turn to the qualitative data.

Qualitative Results

These results are all taken from the pre- and post-elicitation interviews. I begin with a general overview of the participants' backgrounds with SD's. Unless otherwise stated, "trained" (TM, TF) actors took a stage dialect class in the PSU Theater Arts Department. Some also have limited experience with a voice coach, but none to such a degree as to be remarkable. All participants reported having imitated other dialects as a child or adolescent with most participants starting this occurred

right at or just before puberty. Furthermore, unless otherwise stated, all participants are natives of the Pacific NW, and between the ages of 18 and 32. Their experience in applying dialects within the setting of an actual stage production was varied. Only 4 of 6 trained participants and 5 of 6 of the untrained had actually used a SD in a production.

I report here, in order, the processes participants reported being aware of when learning SD's, their experience with the IPA, their preferences for methods of learning SD's, and the targets they reported using while learning SD's. Finally, I report the cognitive devices the participants reported having used to facilitate their SD readings during the elicitation procedure. Within each of these subsections, I make interpretations which attempt to fit their descriptions into Markham's (1997) psycholinguistic models of imitation and impersonation and/or the various techniques suggested by stage dialect coaches.

Learning Processes

I now relate the participants' subjective and impressionistic reports of the processes involved in SD learning, as well as what they considered the most difficult parts of this process.

It is possible to establish that SD learning implicates more than a lay person's knowledge of dialects and dialect areas. For instance, TF1 and UF3 both characterized the process as one of learning differences between the dialects to be imitated, and other geographically or linguistically related dialects. TF1 cited the

difference between upper class British and "lower" British, as she called it, as an important distinction. This belies a rudimentary awareness of a need to choose a *particular* British dialect, and the process does not entirely lack a linguistic basis for TF1. Similarly, UF3, a former linguistics major, talked about having a feeling of uncertainty with the British dialects because of the regional differences between them:

> I felt intimidated doing English accents because I know there are about a hundred of them; I knew [mine] was kind of an amalgam of different ones I had heard on Masterpiece theater ... I have avoided them ... because I knew I would be caught and someone would [know I was wrong].

It is noteworthy that sounding very specific in her dialect choice (as well as authentic) is an important part of the learning process. However, since she is very familiar with the IPA through linguistics and also peripherally familiar with dialectology, she might be somewhat exceptional in this regard.

Establishing and maintaining auditory contact with a reliable target while learning a SD came up in several interviews. For instance, UF1, a native of the Mid-Atlantic states now attending college in Portland, reported that while learning a Scottish SD for "Brigadoon". She remembered a process of comparing her SD speech to that of her fellow players:

> I wasn't sure how certain words are pronounced. [It was difficult] trying to speak in dialect and having someone else speaking [differently than you]. You really have to be focused or have done it a lot [to not be thrown off]. Hearing someone else do a bad or different version makes you uncertain [of yourself]. You think, Are they doing it right, or am I?

Having a directly available and reliable target was an important part of the process to her, and the lack of this was particularly problematic in this case.

This highlights the very real problem that impersonation in a group setting presents. As Markham puts it, without direct "reference to someone else's input" (2002, personal communication), the inexperienced imitator is in a constant state of comparing his/her SD to others'. In this situation each of the actors has a partially developed subsystem for the dialect, but their respective subsystems are probably developed in their own distinct manner. In other words, one actor might imitate Scottish intonation very well but produce many incorrect segmental substitutions. Without a director telling the actors to listen either to the best imitator in the group or to another target outside of rehearsals, this situation would create a maddeningly never-ending process of acquisition where the actors would be constantly elaborating and revising their own SD subsystems in no particular direction whatsoever (Markham 1997: 50). Markham also says that in the early stages of acquisition the learner attends to external sources more than at later stages. (See Figure 15.)

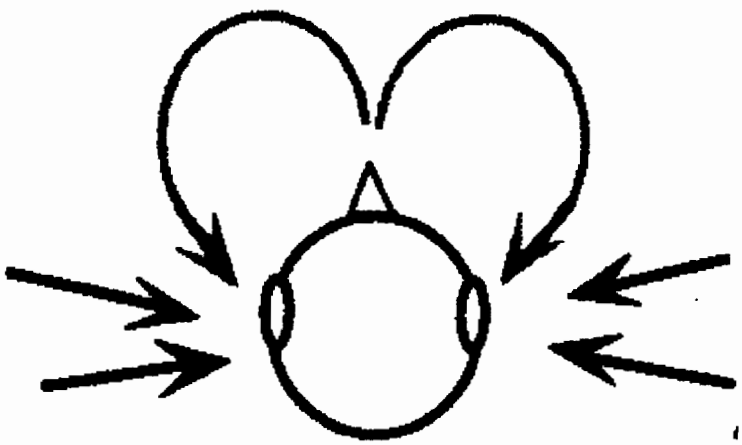


Figure 15 During the early stages of learning the speaker attends strongly to external output (caption and diagram from Markham, 1997: 90)

In contrast, when fossilization or stabilization occurs, the speaker attends more to his/her own output as a model. This idea will be discussed in more detail below. (See Figure 16.) The statement of UF1 (see above) raises the question of whether SD students are attending more to external input, as in Figure 15, or to internal input as in Figure 16.

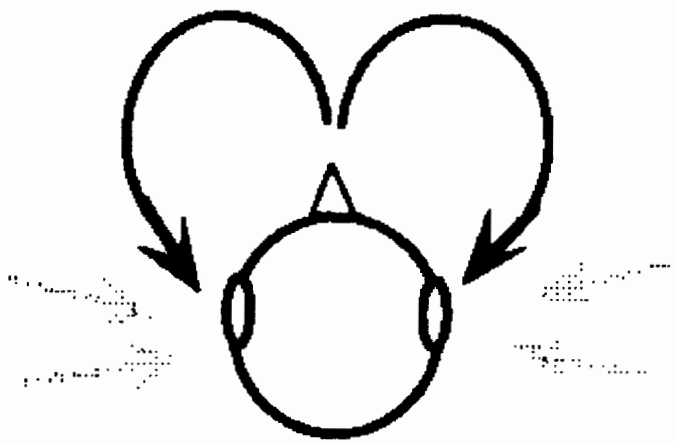


Figure 16 When the speaker stabilizes or fossilizes, he/she attends to his/her own output as reinforcing input (Markham, 1997: 90)

Several participants reported trying to avoid caricature and stereotype when learning SD's. UM3 reported an impressionistic awareness of the difference between caricature and character – "[I have to be aware of] not making my voice go too high [in German dialect] and avoiding cartoony, caricatured versions of dialects is difficult". He also said of Irish:

> I find the Irish a lot harder to... make... sound realistic; ... with Irish, you either sound ridiculous, or you don't sound Irish at all. I think it is because there are more stereotypes of Irish dialect; we are more used to English dialect, we have

> a set impression of how an English person talks... there's not a lot of famous Irish stars [actors], there's not a lot of [authentic] Irish [accents] that we hear.

This indicates that he himself has not had a lot of exposure to native Irish speakers, and it is more or less true that unless you are a resident of Boston or NYC, you probably don't have a lot of opportunity to hear native Irish people. As a result, much of what American actors (who are unaware of the recordings available) hear is Irish stereotype. TM1 said of stereotypes: "Your mouth can do every little thing, but that still doesn't make it a character. Even if you get the vowels right you have to assign the voice to a person".

TM3 also impressionistically described Irish dialect stereotype and how exposure to it might have impeded his learning:

> Irish stereotype is real sing-songy. People might ... say certain words like 'oh sure boy-o' because it's easy to do them in dialect; [but not be] able to say anything else in that dialect. There's a lot of that in my mind I am sure – only being able to say certain phrases because I have heard them [in stereotypes] a lot of times.

Stereotypes, then, could possibly be described as *word-specific* representations in a speaker's mind.

This is a step down from a claim that Markham 1997 makes, in which he says impersonation very often may be based on a *speaker-specific* representation in the impersonator's mind. If we recall that Markham's definition of impersonation includes using SD's and that a representation is a psycholinguistic subsystem, we see that he also states:

> ... it might be argued that imitations of this kind are more often than not based on speaker-specific representations (e.g. an Irish accent based on someone

> you've seen on television), due to the often limited experience one has with the speaking characteristics one chooses to imitate (1997: 48).

Speaker-specific representations will be examined in more detail below with regard to the cognitive devices reported by the actors.

Many participants reported having a hard time distinguishing certain dialects from each other, an indication that many of them possess only partially developed subsystems, or that there may be some crossover between related subsystems. TM3 claimed that Irish was difficult for him because it was

> so similar to other dialects we were doing; like Cockney and British. The vowels in Irish were hardest for me ... I had to go back to the IPA a lot more with Irish, [whereas] with the other ones I could just listen to the tape and I could get back in the position I needed to be in and then I could talk in that dialect.

However, TM3 also talked about the problematic nature of imitating other imitators:

> I think because I found myself constantly changing it to Scottish. I think it is because I always hear American [actors] doing [versions of] those dialects ... that aren't necessarily indicative of that dialect.

These statements indicate two important possibilities: his representation of Irish is either a partially developed subsystem (Markham 1997: 50), or is a subsystem that represents *both* Scottish and Irish dialect, due to hearing American actors' own imitations which likely are only partially developed subsystems themselves. As a result of having input like American actors' "mixed" versions of Irish and Scottish, TM3's own Irish and Scottish subsystems might have developed into one instead of two.

Sometimes, the lack of a specific target leads to the lack of the development of a subsystem. (Markham 1997: 17). TM3 also said "I have a lot of experience copying

[native] British people, but not so much listening to or [imitating] lots of [native] Irish people". Markham points out:

> These representations in the speaker's grammar are generated on the basis of input from the speaker's environment, and the degree of elaboration of any given representation and subsystem is dependent on, amongst other factors, the amount of exposure the speaker has had to the phonological unit or subsystem (1997: 17).

This establishes a baseline with which to compare varying levels of exposure to a target, what kinds of targets are used, and the subsequent effects on the student actor's use of SD's. These effects will be further discussed below in the section regarding reported cognitive devices.

UM2 reported that the "difference between British, Irish, and Scottish is difficult for me; especially between Irish and Scottish. I try to say [the words] 'Irish' and 'Scottish' [each word was spoken in its respective dialect] to remember but it's hard".

This technique of saying or "hearing" a word in one's head to access (Markham, 1997: 49) a dialect is a silent version of the technique of radio actors reported in Herman & Herman 1943. Radio actors sometimes were required to do more than one dialect, and would

> memorize a phrase or sentence in that dialect-one that he could do perfectly. Then, when he finds it necessary to fall into the dialect, he simply repeats the memorized line over to himself, thus priming his dialect into action (1943: 17-18).

It could be argued that UM2, by trying to "hear" the word "Irish" or "Scottish" in his head, is thereby priming the dialect for himself. This will also be discussed in more detail in the final chapter.

IPA Experience

I now discuss the participants' levels of experience with the IPA. Of the trained group, 5 of 6 had their first exposure to the IPA in SD class. Surprisingly, TM1, a Maine native, used it only once in his SD class, a 2-month intensive tutorial in Oxford, UK. Only two of the untrained group had any familiarity with the IPA; UF3 was very familiar with the IPA because of a background in linguistics, while UM1 took a few linguistics courses in the 1970's, but did not remember the IPA. He also reported that he had, on occasion "phonetically re-written words for myself, using my own adaptive system, not necessarily... the IPA."

Their use and knowledge of the IPA, however, was another case: only one of the trained participants, TM2, had retained a working knowledge of it. This is not surprising, as he is now an assistant to his dialect coach, who relies heavily on the IPA. So, even though some reported the IPA as having been helpful to learning SD's during the SD class, it appears not to have been retained by most participants. TF3 said "I had a hard time retaining the IPA- it was like learning a new language while learning to speak in this new way in your own language". Just as a language is forgotten when it falls into disuse, she easily forgot the IPA after the SD class ended. Indeed, it was not easily mastered by many even during the class.

Stated Preferences for SD Learning Techniques

I now discuss the participants' reported preferences for the various methods of learning SD's. Five of the 12 participants reported a preference for the "listen and repeat" method. They reported listening to tapes (Blunt 1967, Machlin 1975, or Stern 1979) or watching movies, and stopping to repeat lines as a means of drilling and learning the SD. This method highlights a conscious effort to elaborate and revise their subsystem (Markham 1997: 50) for these dialects, through listening and repetition of examples of the dialect. This is also self-monitoring, with attention also paid to external input, as in the early stages of learning a language (Markham 1997: 90). (Recall Figure 15 above.)

Two reported improvising with the dialect and pretending (while out in public) that they actually *were* native speakers of particular dialects to test their knowledge of those dialects. Improvising with a partially developed subsystem can be helpful, but since (presumably) the speaker attempting this is the only person in his/her own immediate hearing range, this is similar to the model for fossilization proposed by Markham (1997: 90). Since this is the case, improvising as the sole means of practicing a SD at an early stage of developing the subsystem may cause fossilization, especially if the imitator has little exposure to native targets or native-like imitations.

TM2 was the only one who reported using the IPA as a basis for his SD learning, and indeed expressed a preference for starting with the IPA, and then moving to more character-specific speaking styles based on socio-economic class and/or specific dialect sub-areas within a dialect area, in order to make the character more

authentic. TM2 and UF3 (the former linguistics major) were the two most concerned with the authenticity of their SD's, and if we recall that UF3 and TM2 are the two participants with the most IPA experience, this is not surprising. Indeed, the IPA attempts to record objective, readable versions of all languages and dialects it records through its "one sound, one symbol" principle.

Only one trained participant (TF3) said that the tone focus points worked *best* for her, although she said she typically found the focus points "further back in [her] mouth" than they were reported to be in Stern's (1979) diagrams. However, even though TF2 did not explicitly state a general preference for the tone focus points, she did report that it was essential to her learning French SD and Irish SD's. About French SD she said:

> I couldn't get it right, [but] suddenly it clicked and then I could do it. I think [Stern's] focus point worked for me, to think about where your breath and [vocal] energy is going, so maybe I just figured out how to put my energy there.

For TF2, Stern 1979 was indeed helpful to her learning the French SD. Although we cannot evaluate how much her French SD resembled actual French-accented English, it is apparent that the tone focus point was at least partially responsible to her accessing and possibly facilitated her acquisition (Markham 1997: 50) of a French accented-English subsystem.

Auditory Sources

I now discuss the auditory sources these student actors used to learn the SD's. 7 of 12 reported using tapes at one time or another. Most of the tapes used were

imitations, but some were native speakers of the dialect being studied. UM1, a widely traveled 53-year-old originally from the Southeastern states, once used a tape of a trained linguist whose native dialect was RP.

A few reported using a movie set in the dialect area as an auditory source. However, this technique still proved problematic for finding the correct target: UF1 was attempting to learn a Scottish accent for the musical "Brigadoon" and unwittingly watched the British movie "Billy Elliot", which is set in Northern England. In this case, it is possible that certain features of the Northern English dialect in the film were close enough to Scottish to activate that subsystem for UF1, resulting in her mistaking it for Scottish. It also could have been pure ignorance.

UF3, a "perfectionist" in her words, was a standout with regard to auditory sources and authenticity: she reported being suspicious of actors' imitations of dialects in general, and never used any imitations as sources and only used native speakers as auditory sources. Perhaps, again, this need for authenticity in her SD's is due to her background in linguistics.

Cognitive Devices

I now discuss the actors' reported cognitive devices and mental steps used to facilitate their use of the RP and Irish SD's. These were taken from the post-elicitation interviews. Their comments were a mix of impressions and anecdotes, inchoate ad-hoc jargon and voice-training/SD techniques, but were nonetheless

extremely revealing. Starting with the least decipherable of these descriptions, we realize that interpretation can only get easier after this statement made by UM2:

> I think the British vowels are really important, there is one in particular, I don't know how to describe it. It's the vowel in 'man', beginning of 'that' and 'he', [*[ʔ] used at beginning of both these words] the middle of words like 'quality' [*/t/ was realized as [ʔ]].

Some participants reported simply trying to enunciate better or more clearly to produce the RP SD. TF2 reported for RP that she was mostly thinking about "articulating" more clearly, since she couldn't remember where the tone focus point or any other SD techniques to aid her with RP. Specifically, she reported thinking about enunciating her "t's". TM2 said "RP stands out as being more precise, more clipped, hitting all the consonants, enunciated" [***NOTE:** This sentence was said in RP SD]. TM1 said he thought about enunciating in "the Queen's English". He went on to say:

> [In my tutorial in England], I would read prompts from BBC shows announcing royal guests, or she would have me say 'the lips the teeth, the tip of the tongue' [***NOTE**- this phrase was said very clearly, carefully, with 't's' articulated with exaggerated voicelessness; also in a pompous tone in RP SD] for five minutes.

UM1 also seemed to be talking about the importance of enunciation when he said: "There is much more of a sense of hitting all the consonants [in RP], especially final consonants more than in American dialects". It could be argued that these comments are simply ways of saying "Standard British speakers have /t/'s where Americans have /ɾ/'s"; this feature of RP may be the most salient feature to American English speakers.

There were a number of comments that indicated that accessing the SD's was, at best, as Markham (1997: 48) argues, a process of accessing a speaker-specific representation for each SD. TF3 said that before the procedure she thought about "a general [and mild] British in my brain, maybe [based on] someone who hasn't lived in England for a really long time". Similarly UF1 said for RP she was "thinking about different vernacular words such as 'jolly good'" and "was also thinking about that annoying British kid in the movie 'Turn of the Shrew' [sic]". For Irish she said that she "had a hard time picturing an Irish person; [there aren't] many women to model". Overall, UF1's technique for both SD's was this use of speaker-specific representations, although she had not developed such a representation for Irish, due to lack of exposure to the target dialect.

TM3 also reported the use of a speaker-specific representation as well as stereotype as his primary technique for remembering:

> Whenever I think of [RP] I always think of [a] conservative [person]... I think about a British politician, or a newscaster and whatever goes along with that stereotype.

UF3 similarly said she "thought about how they end sentences on the BBC news". UM1 also said: "I thought about [a stage dialect teacher; he] always imitates Irish dialect" In general he said "I try to hear the voice [in my head] of someone I know who has that accent; that's all I know how to do, I have no training to replace that."

The least developed speaker-specific representation reported was UM2's technique for remembering Irish: "I just say 'aye' in my head, that's the only thing." This could be referred to as a "sound-specific" or "word-specific" representation;

perhaps he has only this word in his representation of Irish dialect. It is noteworthy that both trained *and* untrained participants reported resorting to a speaker-specific representation as a technique to aid them in their SD readings. Perhaps when one has limited exposure or experience with a particular SD, or cannot remember any dialect coaches' techniques, this is the only technique available to them.

Some participants reported concentrating on specific features of the dialect to aid in their SD readings during the elicitation procedure. I begin with suprasegmental features such as rhythm and intonation, although to clarify, they were not reported as such in participants' speech. For RP, UM1 said: "I was trying to get the cadence correct and hope that the rest of it followed". Here, "cadence" presumably refers to the intonation and rhythm of RP. TM1, an unusual case, was trained in SD's as part of a year-long acting tutorial in Oxford, England. His description of RP intonation included words for amplitude (decrescendo/crescendo), but I believe he was attempting to characterize the change in *frequency* within an RP sentence: "I thought about hitting at least one crescendo and decrescendo [with intonation] in each sentence. You want to hit a 'low-high-low'."

A number of participants pointed to Irish intonation as an important and salient feature to help them with their SD readings. For Irish dialect, UM1 said:

> ...I tried to hear it in my head. If I don't have a sense of a rhythm of Irish, I can't do it at all. It's all lilt, up and down. I have no idea how any particular word is pronounced. I've never done one.

It can also be assumed that UF3 spoke of Irish intonation when she said: "I thought of it as following a melody; this is essential to Irish dialect". She also said

that "[the musicality of Irish dialect] is obvious... even [those with untrained ears] will say things in Irish accent with 'music'. TM3 simply said, very vaguely, that it was "musical", but this was most likely referring to Irish intonation as well.

With regard to segmental features, UF3 reported concentrating on Irish /r/'s to aid her SD readings: "Irish has the ar and er, [and I] tried to bounce them". Therefore, her technique for Irish dialect was partially based on an impressionistic awareness of the difference of the /r/'s between American English and Irish English. UF2 mentioned the Irish /r/'s: "I was trying to not roll the "r's". This suggests that UF2 knew that rolled r's are a feature of Scottish dialects, and not Irish dialects (Wells 1982: 420). TF2, when asked about important features for producing Irish SD, also said that Irish /r/'s have a "distinct sound". TM2 put it this way: "harsh r is distinctive of Irish". While the trained participants may have learned about the Irish /r/'s in the SD class, it is noteworthy that two of the untrained participants mentioned the importance of the /r/'s. This suggests that Irish /r/'s are a particularly salient feature for these participants, and so may be an important feature of their subsystem's representation of Irish dialect (Markham 1997: 17; 50).

Linguistically, Irish dialect is unique in that it contains "a nearly complete range of vowel oppositions in the environment of following /r/" (Wells 1982: 420). Wells also says "the typical /r/... has a strikingly 'dark' resonance in Irish English" (1982: 431). In other words, because of the particularly 'dark' resonance and the unusual range of vowel oppositions, Irish /r/'s may stand out perceptually to English speakers who are not native speakers of Irish English.

UM3 described some segmental adjustments he made for his Irish SD, in very unclear and impressionistic terms: "And then for Irish I think of the [aI] sound; I think I hit this well. I butchered the r's for Irish." Again, there is a possibility that the /r/'s are salient to this speaker, even if he thinks he "butchered" them.

UF3 reported impressionistically trying to monophthongize many American vowels when reading the RP SD: "[I tried to put] less bounce in diphthongs, more of a single sound in a lot of words, where it would be a double sound in American English".

TF3 said of RP that she

> did remember some of the indicators [for RP] like...not saying a lot of the r's at the ends of words and that 'c' symbol with the dots after it; that's the only one could remember- it was more than 'ought'- not a sound that we [Americans] use a lot.

She said that she could not remember any of the SD coaches' techniques, and so seemed to concentrate on the most salient points of RP for her: the r-lessness and a particular vowel whose IPA symbol she could not remember, possibly [ɔ:].

UM3 also said he was concentrating on particular sounds in RP. He gave very impressionistic descriptions of these: "I tried to feel the p's- I was trying to over-do them...I think of the [i] sound for English; I think I hit this well ; I drag out the [o] more for English [RP]." The words "over-do" and "drag out" could both be taken to mean "exaggerate".

Some of the untrained participants reported using cognitive devices and adjusting their articulators in a manner that was strikingly similar to the tone focus

points of Stern 1979. For instance, UF2 reported that she thought about something she had heard about British speech before doing the RP SD readings:

> I heard somewhere- that their speech is more forward in the mouth, so I was trying to move it forward to the teeth; I was trying to move where I spoke from, my tongue forward, my lips forward, speak with my lips more.

So, even though she was speaking impressionistically, she was moving her speech and "vocal energy" in the direction of Stern's (1979) tone focus point for RP. This is significant since she was an untrained subject. It may be argued that she was simply remembering a previous stage director's summary of Stern's tone focus point for RP, but other participants made similar comments that probably were *not* distilled versions of Stern 1979.

UF3, although she never used RP in a stage production, vaguely described her own technique, which could be interpreted as moving her speech in the direction of the tone focus point for RP: "in general I was frontalizing the English accent". Even though there was no reference in this that would indicate from where she was "frontalizing", we can tentatively say that it suggests a gestalt feeling of the location of the RP tone focus point- at the lips, as Stern 1979 places it.

About Irish, two participants made statements that were adjustments similar in nature, if not similar in quality to Stern's tone focus points. UF2 said of Irish:

> Something with the back of the tongue was doing something weird. When I think of Irish I think of this smiley thing with the back of the tongue; almost like I am playing with the top part of my palate with my tongue.

UM3 reported a technique for Irish which may be a general character comment (as well as a stereotypical depiction) which he uses to do Irish dialects:

> I tend to leave my mouth open longer when I talk [in Irish dialect], so I let everything just slip out of me, like he's had one too many [to drink]. I also do lower status for Irish.

Interestingly, he also said that he over-enunciates the "/b/'s...that's also like pushing [the sound] both higher and straight out as fast as possible". Even though the first part of his statement is indecipherable, it could be that "pushing [the sound] straight out" is yet another intuitive feeling for Stern's Irish tone focus point (cf. Figure 2 above, showing it as outside the mouth). In other words, perhaps there is reason to believe that these tone focus points have a level of psychological reality.

Even if these statements cannot be definitively linked to Stern 1979, they are similar to what Pennington calls "deep-level parameters" such as "the orientation of phrasal or sentential accent" (1994: 95). In other words, since (in these cases) these subjective techniques do not focus on specific segmental features, but instead on a general resetting of the articulators in order to *facilitate* more accurate production of segmental features in the SD, these could be considered deep-level parameters. The same is true of the tone focus points (Stern 1979).

A similar example came from UM3; he gave an impressionistic description of his technique for RP. "[I tried to have] a general tensing of my mouth, and was trying to hit [the sound] off of the hard palate of my mouth". This could be considered a general shift of voice quality in order to facilitate a character, but may, again, be considered Pennington's (1994) deep-level parameter.

Of the trained participants' references to the tone focus points, TM2 refers indirectly to Stern's tone focus point for RP: "There is *more use of the lips* in standard

British speech, compared with our garbly middle of the mouth American talk". This also indirectly references the tone focus point for American, which Stern places in the middle of the mouth.

Of the direct references to tone focus points, TF1 reported for the RP SD that she was trying to "make resonance happen in my head; making sounds go 'up' through the head", as well as "put my tongue in the middle of my mouth" for the SD readings in the elicitation. The first is a technique that would probably, at best, produce a change in voice quality. The second seems to be either an incorrectly remembered tone focus point for RP (recall the tone focus point for RP/Standard British is right at the lips, and in the center of the mouth/tongue for General American), or a technique all its own.

However, 3 of 6 of the trained participants reported specifically trying to employ Stern's tone focus point for Irish dialect- TF1 said: "[I] tried to put the focal point outside of the mouth", which is of course where Stern 1979 places it. Both TM2 and TF2 reported that Irish had a "breathiness" to it. TM2 said he started "focusing the sound more outside of the mouth, farther beyond the British. [*NOTE: said in Irish dialect]" TF2 similarly said:

> I tried hard to think about [the tone focus point] which creates the breathiness, so I was thinking about those things together... the tone focus point for Irish is out in front of your mouth.

It is significant that she mentioned thinking about the Irish tone focus point while speaking the Irish SD productions. Furthermore, it is significant that these three also

scored the highest on Irish /t̪/ environments: TF1 scored 91%, TF2 scored 73%, and TM2 scored 45%, while the other trained participants scored only 27% or less.

Psycholinguistic Feedback and Access

Furthermore, some participants reported a psycholinguistic "feedback loop" while reading in SD and simultaneously listening to themselves. Regarding this mechanism, TM3 said: "I was thinking about listening to my voice, certain words sounded like RP, others sounded like me. I was trying to remember it in my head". Hearing himself speak even held UM2 back at times:

> If I heard myself getting it right at the beginning, or it had easy words at the beginning, the end of the sentence was easier, otherwise the whole sentence really doesn't hit it. You could end up changing [accents in the middle of a sentence because of this].

Markham uses this phenomenon to explain fossilization in foreign-accented speech. (Recall Figure 16 above.) It would appear that what both of them are talking about is similar to fossilization, but since they both appeared to be listening to their speech in order to make adjustments, their SD speech is not fully fossilized and could be considered still in the process of acquiring the subsystem (Markham 1997: 48-50).

Several of the participants reported "hearing" some word or words of the dialect "in my head". In general, most said they were trying to "hear" specific words. TM3 said,

> when I would read the sentence the first time, I would start to think about how I was going to say it in dialect, but I would never get far enough...I was trying to conjure up a vowel in my mind...in the moment before saying it in dialect. But this was one word at a time...not hearing the whole sentence in my head.

UM1 and UM2 reported trying to hear only certain words in their heads. UM3 simply said he tried to hear the *dialect* in his head before saying it aloud.

It could be argued that this is an impressionistic manner of talking about the actual *act* of access (Markham 1997: 50). In other words, there is a moment before actual access of the subsystem, when a speaker has to "hear" a feature of that dialect in his/her head. It could be that access is just this: silently hearing a particular feature of a dialect or speaker in order to bring the subsystem into working memory. Similarly, singers often are taught to "hear" or "sing" the first note of a song in their head before actually singing it.

However, the way that this act of silently "hearing" is described by these speakers suggests that it occurs *prior* to access, that this hearing is yet another step, here tentatively called "location". After all, one must *locate* the particular subsystem in order to access it. Furthermore, this "location" may be considered a manner of differentiating similar or related subsystems from each other, also a necessary step to accessing a subsystem.

Listening Comments

When listening back to the elicitation procedure, participants had comments very similar to most of the comments already made: very impressionistic and unclear. Their comments are far too numerous, and for the most part do not shed much more light on their cognitive and mental devices. Nonetheless, there was some useful information.

When asked to identify those tokens that seemed incorrect to them, most were able to correctly point out an incorrect reading, but had nothing to replace it with. For example they would usually say something like TF1 "I know the vowel in 'put' is wrong, but I don't know how to fix it".

Participants were more aware of lexical issues than I would have predicted. TF2 reported that having the word *lager* in the RP sentence set was difficult because the word itself triggered Cockney for her, making it difficult to say in RP at all. During the elicitation UF2 commented on the RP sentence *Go get a sweatshirt, it's cold outside.* She was triggered by the word *sweatshirt*: "Isn't that the wrong word? Don't they say *jumper*?" This is noteworthy as I had predicted that lexical differences were not as important to actors because of their memorizing a prepared text. However, it stands to reason that the average lay person, with a partially developed subsystem for a dialect, would be aware of at least some of the lexical differences between her D1 and the D2.

There were some comments which seemed to indicate a wrong or opposite understanding of features of the dialects. UM1 said of an RP token containing an /r/: "On *lager*, I dropped the 'r'; should have said it- I sounded too low-class". In this case, he mistakenly identified r-lessness as a low-class feature. There is a possibility that he has an association with r-lessness from NYC and Boston accents, where it is a stigmatized and low-class feature (Labov 1972).

About his Cockney reading for RP, UM2 said "I sound more common, less proper than I should", so he was somewhat aware that his RP SD was incorrect.

TM1 said "*moth* should have the same vowel as *psalm*". Interestingly, even though this observation is incorrect (in RP, *moth* is said with[ɒ] while *psalm* is said with [ɑ:]), it is recalled that he was the only one of the group who did *not* over-generalize RP /ɒ/ to any /ɑ:/ environments. This may be because he spent two years in Oxford, England, which is the home of at least a version of RP[10] (Wells 1982: 280), and had sufficient exposure to the dialect to develop a fairly robust subsystem (Markham 1997: 17).

Summary of Qualitative Results

In summary, there are three areas which seem to be the most important when trying to characterize these participants' statements: linguistic awareness; psycholinguistic aspects; and adjustments using deep-level parameters (Pennington 1994) such as intonation and tone-focus points (or pseudo tone-focus points for the untrained participants).

The participants' linguistic awareness sometimes showed a need to choose a specific dialect, more specific than some SD books (Blunt 1967) would suggest. Furthermore, their statements also suggest an awareness of both suprasegmental *and* segmental differences between dialects. It may be argued that both of these types of statements are not much more in-depth than that which may be found among lay-society; that cannot be answered within the confines of this study. Nonetheless, some

[10] RP itself is sometimes also called "Oxfordshire" or "Oxford English" by the lay public (Wells 1982: 280).

participants talked about these as being important and sometimes essential parts of using SD's. This, coupled with other participants' statements regarding the importance of avoiding stereotype and caricature, underlies the notion that (at least some here) regard SD usage as more than the application of a stereotype.

The statements regarding the psycholinguistic aspects of their SD usage were significant as well. They revealed a need for a reliable auditory source, for at least a portion of the time while learning the dialect; this supports Markham's claim that exposure to a dialect will facilitate the development of a subsystem (1997: 17). Furthermore, many participants declared only having limited exposure to (auditory sources of) certain dialects (usually Irish) and so had a hard time producing them. This not only caused a problem of access, but also was often a case of the lack of a fully developed subsystem (Markham 1997: 17). When accessing the SD subsystem became difficult, participants often reported trying to access a speaker-specific representation for that SD (Markham 1997: 48), or concentrating on a salient segmental or suprasegmental feature. This may mean that an underdeveloped psycholinguistic representation for the SD for these speakers are as Markham claims, speaker-specific in nature, or even less, are feature- (suprasegmental or segmental), or word-specific in nature.

Psycholinguistically, many also reported having a hard time with hearing themselves while speaking, and having no direct target or auditory source to imitate in the elicitation session. Statements of this type suggest that their SD speech can be hindered by the lack of a directly available target and/or listening solely to their own

output as input (recall Figure 16 above), especially if their subsystem is underdeveloped.

The use of deep-level parameters such as intonation, and as is argued here, tone focus points, to facilitate SD speech were important to several participants, many of whom were untrained. Many even said that if they did not produce good intonation patterns for the SD, they were unable to produce a SD to their satisfaction at all. In fact, many participants' statements regarding suprasegmental and segmental features as well as tone-focus and pseudo tone-focus points indicated that these features and techniques aided in the access (and sometimes the acquisition) of the SD subsystem, regardless of how psycholinguistically robust it was (Markham 1997: 48-50).

Threats to Validity and Sources of Error

Even though all efforts were made to make the groups as similar to each other as possible, within either the untrained or trained group the participants are heterogeneous with regard to age, level of stage experience with SD's, and (for the trained group) amount of time lapsed since the SD class, among other dissimilar factors. Furthermore, the sample is convenient (non-random). As a result, the trained vs. untrained results are neither statistically testable, nor generalizable to all actors.

Moreover, with regards to the statistical tests in general, the use of a t-test assumes normal distribution. It is possible that the heterogeneity of the sub-groups (trained vs. untrained) and the larger group in general may have provided less than normal distribution, raising the question of the validity of any the statistical tests used

above. Yet, in most cases, the individual patterns confirmed that there was no group-wide pattern of change, but there was a tendency in the predicted direction for most stated hypotheses.

Before beginning the elicitation session, participants were given a chance to "warm-up" or prepare their voice as they might for a production using a SD. Some of them asked me to leave the room while they read a passage from a book or magazine aloud in the SD, others allowed me to stay during this. Still others did not warm-up at all and went directly into the elicitation procedure. This may have caused for a difference in performance level; the participants who did use the time to warm-up may have been better able to access their SD subsystems (Markham 1997: 50) than those who did not do so.

Furthermore, if I were to perform this experiment again, I would have asked for the trained participants to review their SD class notes or texts (specifically Stern 1979) prior to the elicitation procedure. Even those who finished the class no more than 4 months previous had a difficult time remembering some of the key concepts for the dialects; for others for whom it had been longer it was a considerable challenge. This may have affected the trained participants' performance level negatively.

Markham makes a distinction between learning and acquisition, with acquisition being a subconscious activity and learning being a conscious activity (1997: 18-19). From this perspective, it might be argued that the differences between the processes might be too great to warrant comparison at all and therefore a threat to

the validity of this study; however, regardless of the activity's status as either conscious or subconscious, the *effects* may be similar.

There is also a significant difference between a single-point cross-sectional study such as this and the formulation of longitudinal hypotheses and questions. Therefore, it is difficult to make any final conclusions comparing SD acquisition and achievement, based on this design alone, to naturalistic dialect acquisition as studied by Chambers 1992.

Lastly, it is also unknown what the ultimate level of achievement or goal of these actors was; as stated above, the tendency of SD learning is to have a somewhat moveable goal for the sake of understandability. Because of these factors, the level of acquisition (achievement) and rate of acquisition are also difficult to compare to naturalistic dialect acquisition, where there is a more clearly established target or goal (i.e. native-like pronunciation of the D2).

Chapter 5: Significance and Conclusion

In the study of dialect acquisition, it is important to monitor the extent to which adult learners utilize phonological features unique to the D2 and absent from the learner's D1. By discussing how these D2 phonological features are utilized in SDs, SD training techniques, their application and effectiveness can be put into a broader theoretical perspective. The results found within this study have implications for several areas of linguistics:

- the psycholinguistics of impersonation and the access of linguistic subsystems (Markham 1997);
- psycholinguistic theories of phonological acquisition in L2 (Flege 1995);
- naturalistic dialect acquisition studies (Munro et al 1999; Chambers 1992; Trudgill 1986);
- pronunciation practice and pedagogy (Pennington 1994).

In the area of the psycholinguistics of impersonation and accessing linguistic subsystems (Markham 1997: 17; 50), the qualitative data showed that for many of these actors, their SD usage is based on speaker-specific representations. In these cases, it indicates that their SD's are not fully developed subsystems, but more based on the speaker-specific representation. This is also shown by how many claimed they concentrated only on a particular feature of the dialect to access it. This is true whether they were thinking about a salient segmental feature such as r-lessness in RP, the quality of /r/'s in Irish, or a suprasegmental such as Irish or RP intonation.

It is significant that many talked of "hearing" the dialect in their head before accessing (and therefore producing SD speech); there is little in Markham 1997 which refers directly to this phenomenon. Although it could be argued that access co-occurs with this act of "hearing", or that this act *is* access, it is still possible that *locating* a dialect subsystem in order to access it for production purposes is an important step in the psycholinguistic process. This is further supported by the comments of some of the actors, e.g., that some dialects were psycholinguistically close to each other, often making it difficult to produce them. Again, this could be the lack of a developed subsystem due to a lack of exposure to a native or native-like auditory source; however it is difficult to say whether these dialects would become more distinct from each other with more exposure to such auditory sources, or whether their psycholinguistic proximity is a fixed one.

If this is what these actors are doing psycholinguistically, there were also definite physiological/articulatory adjustments being made. They were often making specific adjustments to their articulators at the segmental level, and at a more general level in the case of intonation or other deep level parameters such as the use of tone-focus and pseudo tone-focus points.

Based on these interviews, it is still difficult to identify clearly Markham's (1997) "internal trigger" mechanism and the interaction of psycholinguistic with physiological/articulatory adjustments. The interviews were not designed with the temporal aspect in mind; for instance, I cannot say whether accessing the RP

subsystem for UM3 caused him to have a "general tensing of the mouth" or if the latter caused the former.

Furthermore, some participants' statements make it unclear whether the tone-focus point helped them merely *access* a SD subsystem or helped them *acquire* a SD subsystem. It is also possible that it was merely continued exposure to auditory sources for the dialect which led them to be able to develop a subsystem, and that the tone-focus points perhaps simply made this subsystem more available for production.

A finding which supports this idea is that those who studied SD techniques *did* achieve more linguistic authenticity than those who did not. Causal connections between the SD techniques and linguistic authenticity are difficult to make, but this study did isolate those who had studied to show its effectiveneess on achieving linguistic authenticity.

It may be that the trained actors' exposure to the IPA in the SD class was just enough to raise their awareness of the differences between dialects to give them a productional edge over their untrained counterparts. The tone-focus points of Stern 1979 may be the most effective and leave a psycholinguistic imprint on the actors, making it easier both to acquire and access this SD subsystem (Markham 1997: 17; 50). There is also the possibility that particular tone-focus points (for Irish, for example) help facilitate more linguistic authenticity, but others are less effective at this. If we recall the 3 trained participants' relatively high performance on the Irish /t̪/ environments, it may be argued that the tone-focus point raised their perceptual awareness enough to give them an edge over the others. The use of impressionistic

terms such as "breathiness"[11] may also raise the awareness of the existence of this allophone of /t/ in Irish English, causing it to become a more salient feature in the speaker's subsystem than before learning the tone-focus point. These are questions for further research, however.

It does seem that many actors studied here, although avoiding stereotypes, were concentrating on using salient features (to their ears) of the dialects in question. This may be just how the actors are duping the audience's ears since many concentrated on using these salient features. When hearing such a performance, the linguistically unsophisticated audience may hear those features and do not demand more authenticity of the actors.

The findings of this study also contribute to theories of L2 phonological acquisition. The Speech Learning Model (SLM), postulates several principles, one of which states:

> The mechanisms and processes used in learning the L1 sound system, including category formation, remain intact over the life span and can be applied to L2 learning (Flege 1995: 239).

The postulate suggests that very specific phonetic information is available even to adult L2 (as well as D2 and possibly SD) learners, as was seen in Flege & Hammond 1982 with the imitation of non-distinctive phonetic differences. The RP /ɒ/ and /ɑ:/

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[11] The Irish /t̪/, since it is a fricative and has high frequency sibilance as a feature, may be the basis of using the term "breathiness".

environments and /t̪/ in Irish English[12] show overall success rates (with trained and untrained taken together) of 61%, 69% and 28% respectively. Certainly, although these categories are being developed variably across speakers and the Irish category for /t̪/ shows a considerably lower rate, this is still evidence that they have begun the process of creating new categories. Therefore, based on these adult speakers, support is given to Flege's postulate that "mechanisms and processes used in learning the L1 sound system ... remain intact over the life span" (1995: 239). If they weren't able to produce these new categories at all, then there would have been success rates of 0% for these new categories, which is clearly not the case.

Another area for which this study has importance is naturalistic dialect acquisition (Chambers 1992; Munro et al 1999; and Trudgill 1986). Since the learning of an SD could involve the partial acquisition of a D2 phonological system different from that of the D1, there will likely be some similarities to studies of naturalistic dialect acquisition. Having stated this, the data did show similarities mostly in one area: the variability principle of Chambers 1992 which we recall states that both categorical rules and variable rules exhibit variability *early* in acquisition. In this study, only categorical rules were tested. With the tentative acceptance of Hypothesis (1b), a good deal of variability in their application of these categorical rules was observed. As stated above, this could be a very different kind of variability, due to the heterogeneity of the group; it also could be a reflection of an extremely early stage of

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[12] RP /ɒ/ and /ɑ:/ and Irish /t̪/ are new categories for American English speakers. Subjects who use these sounds correctly will have achieved new category formation in the sense of Flege (1995).

acquisition. Also, much of the data went in the predicted direction on Hypotheses (1a), (1c) and (1d), even if statistical significance was not reached.

It may seem fairly vacuous to say that the actors' application of these rules was "variable"; however, since these are categorical rules, their variable presence indeed shows that these rules do not "emerge full-grown and instantaneous" (Chambers 1992: 691). In other words, speakers do not one day produce 0% RP /ɒ/'s and then the next morning wake up producing 100% of RP /ɒ/ in *all* correct /ɒ/ environments and *not* in any inappropriate environments. SD learning, at least as observed in these subjects, showed a unique error pattern with regard to the RP /ɒ/ and r-less environments. There was an overgeneralization of RP /ɒ/, possibly due to its saliency from the perspective of American listeners. There was an intermediate stage of "r-less yet not correctly RP" observed in these participants as well. This error pattern and type of variability may be due, again, to the nature of SD learning in the absence of a directly available native auditory target.

Regardless of these issues, the question arises: Can the techniques of learning an SD contribute to making the skill fully generalized? After how long learning, studying, and applying a particular SD is it possible for the actor to apply it beyond memorized texts or an experimental list of sentences? To put it more clearly, would the actor, after extensive experience in applying the techniques of learning an SD, ever be able to use an SD convincingly (and possibly authentically) in free speech? Or on a novel sentence given the actor that is outside the memorized text for the role?

Indeed, it may be argued that while the intermediate stages of acquisition are clearly different (as shown in the error analysis of the r-less environments and the overgeneralization of RP [ɒ]), the ultimate level of achievement of someone who has mastered the SD in question is likely very similar to a person immersed in naturalistic dialect acquisition. In other words, while the participants in this study have clearly not mastered the SDs in question, and their intermediate level of achievement may look different from the intermediate stages of naturalistic dialect acquisition, the ultimate *effects*, upon mastery, may be similar or even the same. Those who have mastered the SD will have a more robustly developed subsystem, and surely will have a more generative ability than those at intermediate stages. Lastly, how much exposure to native auditory sources does it take to develop their subsystem (Markham 1997: 17) to this level? Since this study is discrete-point and cross-sectional in nature, these questions are beyond the scope of this study, but are well worth investigating in the future.

Another important area is that of pronunciation pedagogy and theory. In a brief review of the literature on L2 phonology, Pennington 1994 discusses various theoretical constructs which have implications for pronunciation pedagogy. Phonological parameters, or

> deep-level features such as the orientation of phrasal and sentential accent have been proposed as underlying a host of other systemic features that ultimately determine the production of individual phonemes in a particular language (Pennington 1994: 95).

She suggests pronunciation teachers should use these deep-level phonological parameters early on in the acquisition process, rather than focusing (as is usually the case) on individual segments. Instead, these parameters can be used in order to facilitate better pronunciation of individual segments before there is focus on meaning and syntax. She says:

> learners who are able to reset underlying or general parameters early on [in learning an L2] will achieve better results in L2 acquisition than those who develop each aspect of the interlanguage system individually (1990: 541; as cited in Pennington 1994).

From this it seems logical to draw the parallel that the goal of Stern's tone focus points is a psycholinguistic attempt to reset some deep-level parameter from that of the D1 to that of the D2 (SD). Since Stern's tone-focus points are focused on a general, holistic difference between dialects to be applied at the discourse level within a particular dialect, they could be considered a "general parameter" in Pennington's terms. Recall that Stern says,

> once an actor has mastered the new muscularity and tone focus for a particular dialect, many of the important pronunciation changes can be made much more easily and convincingly (1979: 1; 4).

Stern suggests that his tone-focus points have an effect on segmental features is much like Pennington's claim about the effects of her general parameters. At the very least, the tone-focus points attempt to raise the SD student's awareness of deep-level differences between dialects of a language. Whether or not these tone-focus points actuate a deep-level change in their speech and produce better pronunciation at the segmental level, as stated above, remains to be seen

Stern's (1979) techniques and specifically the locations of the tone-focus points are fairly easy to remember, and perhaps do bring about some of the necessary adjustments for SD believability. If these tone-focus points are deep-level in nature, perhaps they can be used with L2 learners early on in pronunciation pedagogy to aid in the resetting of phonological parameters. Furthermore, these tone-focus points could be useful and relevant to raising awareness of dialectal differences between African American Vernacular English and Standard English (Wolfram and Friday 1997). In addition to their proposed program of awareness of grammatical and phonological differences between these dialects, the tone-focus point would be useful to supplement these programs as a means of succinctly describing a deep-level difference (Pennington 1994) between the two.

Again, it should be noted that the segmental-level effects that the tone-focus points of Stern 1979 actuate must be determined in another study. However, recall that those three participants who stated remembering the tone-focus point for Irish also had the highest success rates on the production of Irish /t̪/ of any subject. Again, this result could simply mean that Stern's Irish tone-focus point works well for applying or remembering this particular sound in Irish, and not others (recall that production of clear Irish /l/'s was particularly poor among all participants, including those who did well on Irish /t̪/). Again, this remains to be tested in a more rigorous study.

Phonological adjustments are of great importance to the second language learner; pronunciation can sometimes interfere with meaning and may subsequently impede communication. Because of this, it is important both for dialect coaches and

ESL pronunciation teachers to utilize those techniques which are most efficient at producing changes early on in the acquisition process. Those dialect and language learners who are successful at pronunciation will therefore gain more confidence early on in the learning process. The better equipped teachers are to supply them with pronunciation techniques that make global changes (as opposed to discrete point changes) in their pronunciation, the better off their students will be.

Finally, this study has shown that while actors are generally utilizing mostly salient features of the dialect their application of phonological rules shows a resemblance to the early stages of naturalistic dialect acquisition. This underscores the potential that these techniques have in aiding the access and acquisition of new systems (languages) or subsystems (dialects), and the need to study more closely the application of Pennington's deep-level parameters (1994). Actors, then can be considered more than just lyrebirds, with at least a rudimentary awareness of phonology's effect on the pronunciation of a dialect. After all, I doubt a lyrebird could apply Irish /t̪/'s in all the right environments.

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Appendices

Appendix A: RP sentences

1) There are a lot of calm people.

2) I bought a pint of lager to wind down from my day.

3) A man planted a little palm tree at the bottom of the hill.

4) My mother coughed when I said I was moving to Boston.

5) My father made some beef broth and sang "fa-sol- la-ti-do" to himself.

6) "That was a quality dodge," he said of my evasive tactics.

7) "Alms, alms for the poor", the nurse repeated to those who passed by.

8) He will build me a spa, but he is not totally committed to it.

9) He is a good thinker, although sometimes not good enough. .

10) I don't wear red cloth because I am fair-skinned.

11) The moth read the psalm to himself.

12) Another forty-odd sailors will be leaving tonight.

13) I crossed the room to put some skin balm on my legs.

14) Put the brittle fruit in the bag.

15) Go get a sweatshirt, it's cold outside.

Words providing obligatory environments by rule:
(Note: numbers in list indicate *sentence* numbers)

'r-environments' (Gen Am) in above sentences that are 'r-less' in RP: 13

#1: there, are; #2: lager; #4: mother; #5: father; #7: nurse, for, poor; #9: thinker; #10: fair-skinned, wear; #12: forty-odd; #15: sweatshirt

'ɾ-environments' (Gen Am) that are not flapped (lack of North American flapping) in RP: 12

#1: "lot of"; #2: "bought a"; #3: little, bottom; #6: quality, said of; #7: repeated; #8: totally, committed; #12: forty-odd; #14: brittle; #15: "get a"

Pacific NW Gen Am. /ɑ/ words that contain /ɒ/ in RP: 9

#1: lot; #4: coughed, Boston; #5: broth; #6: quality, dodge; #10: cloth; #11: moth; #13: crossed

Pacific NW Gen Am. /ɑ/ words that contain /ɑː/ in RP: 10

#1: calm; #2: lager; #3: palm; #5: father, la; #7: alms, alms; #8: spa; #11: psalm; #13: balm

Appendix B: Irish sentences

16) There was a lull in the conversation, so I made a call to my partner.

17) The bull hit a man with his horns, and they both fell to the ground.

18) The bottom of the light is brighter than the top.

19) They found the skull of a rat while digging the trench.

20) I tried to pull out the rest of the story from him.

21) "Do you think the air is still?" I said as a bat flew by our heads.

22) "Not at all," I said, "You pay the bill, and I'll leave the tip".

23) Our cat ran toward the jetty and I panicked.

Words providing obligatory environments by rule:
(Note: numbers in lists indicate *sentence* numbers)

Gen Am. dark /l/ environments that are clear /l/ environments for Irish: 11

#16: lull, call; #17: bull, fell; #19: while, skull; #20: pull; #21: still #22: all, bill, I'll

Gen Am. /t/ or [ɾ] environments that are Irish /t̪/ environments: 11

#17: hit; #18: bottom, light, brighter; #19: rat; #20: out; #21: bat; #22: not, at; #23: cat, jetty