Psychology of Bilingualism and Multilingualism
Professor Ark Verma
Dept. Of Cognitive Sciences
IIT Kanpur
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Hello and welcome to the course introduction to the psychology of bilingualism and multilingualism. I am Dr. Ark Verma from the Department of Cognitive Sciences at IIT Kanpur. This is the final week of the course and I am going to talk about miscellaneous topics that you know in bilingualism and multilingualism, topics that sort of affect us in different ways in a different manner than what we have discussed so far. So in the previous lecture we actually talked about you know how bio or multilingualism might have an impact in acquisition of literacy in the overall academic achievement of an individual and hence you know in the overall chances of an individual doing well in their lives and so on. An interesting aspect in acquisition of literacy was this aspect of how do children learn to read and specially how would they learn to read if the two languages that they are actually learning to read may have different writing systems.

In this lecture I will go in a little bit of a detail about how do bilinguals learn to read and whether they do it in the same manner as monolinguals or they do it differently than monolinguals or say for example how do the different scripts that they are learning to read interact with each other, what are the consequences of such an interaction and so on. So let's move. Now each language as you would know has its own very specific writing system. For example the French writing system, the English writing system or the Hindi writing   system.

Now these writing systems are actually denoted by unique scripts that represent units of speech by graphemes. So the idea is, see typically language is mainly in terms of speech and writing or depicting speech in written form is fairly recent as compared to the origin of speech in human beings. So these different writing systems have actually evolved different ways to represent the units of speech into actually written patterns which are referred to as graphemes. For example, you can make a distinction between alphabetic writing system wherein the letters or the alphabets of English actually represent singular phonemes, a syllabic writing system for example which is followed in French where the units actually represent syllables and an alpha syllabic writing system which is used in Hindi which basically codes down the units of speech into graphemes and basically the graphemes actually represent syllabic units which are basically used as letters. Again there is a lot of debate into the exact characteristics of Hindi, the exact characteristics of the Devanagari script that is used to write Hindi and whether it should be called an alphasyllabary or a Nabugita but again that's beyond the scope of this lecture and I'm sort

of   leaving   those   questions   out   for   a   different   day.

Now going in a bit more detail about this more specifically say for example English graphemes as I was saying represent phonemes, Chinese graphemes interestingly represent monosyllabic morphemes. So you can see that different writing systems actually chalk out the speech in different ways and therefore these writing systems can be classified as being morphemic, syllabic, consonantal, for example Arabic graphemes represent typically consonants and vowels are actually not marked in the script and people have to sort of know them at least in later stages of reading. So you can classify the scripts into different categories based on how are they choosing to depict units of speech and in that sense each of these scripts that we could talk about will have certain unique characteristics. Again because we are developing categories scripts that fall in the same categories will share more characteristics than scripts that fall in different categories. So another very interesting aspect about this is that the same script can also be used   to   depict   two   different   languages.

For example the Roman alphabet can be used to represent both English and Italian although you know that there will be different sound to text correspondences or grapheme to phoneme correspondences that are depicted between the relationship between their orthography and phonology. Also the way different writing systems are read, written or learned could be different. For example, children who are seeking to learn an alphabetic writing system would require the essential ability to segment the spoken language into phonemes whereas Chinese children would require a slightly different skill and the ability to identify morphemes. Also the level of phonological transparency of an alphabetic writing system would or any writing system for that matter would affect the manner in which the text in that language is read or spelled. For example according to the orthographic depth hypothesis users of a phonologically opaque writing system let's say something like French would rely more on whole word units for reading and spelling basically following the lexical route according to the dual route model of reading as opposed to the you know grapheme to phoneme conversion route.

Now here is a bit of a you know a site that I would have to give you in a separate course on cyclic linguistics I have talked about the dual route model of reading or visual word recognition which I am sure you would benefit if you go and understand, you would go and read or follow in order to follow what we are talking about here. Typically just to sort of give you a brief you know heads up the dual route model or the dual route cascaded model developed by cold heart in 2001 basically suggests that there are two routes of reading one is where you go you know letter by letter concatenating the letter to sound conversion of each element in a particular word and creating a pronunciation of a word from there or otherwise is basically say for example words that are difficult to pronounce

say for example the words like bouquet or genre. Now if you actually go letter by letter here you will commit mistakes so you will basically end up reading bouquet or generate but the thing is these words do not have to be read in that way you have to basically take the whole word and match it to the existing pronunciation in your mental lexicon this will be called the whole word route. So when orthography is phonologically more opaque just as I was showing you by the examples of the words bouquet and genre and which is much more the case say for example in an orthography like French typically readers would actually you know rely on the whole word units rather than going letter by letter and creating a bottom-up pronunciation of a given thing. This would interestingly be much more easier when you are you know dealing with a phonologically transparent orthography like Hindi for that matter because in Hindi whatever you is written is exactly how you read it if it is written kamal or kamal you will basically go by you know kam, ma and la and you will basically read it from left to right in exactly the same manner.

On the other hand there is another theory you know put forward by Ziegler and Goswami which is called the grain size theory and according to the grain size theory phonologically a phonologically transparent alphabetic writing system would be basically read by decoding the raffines into phonemes whereas opaque systems like French for example would require a greater reliance on larger orthographic units that is why French relies on syllables and for example English relies on you know single letters and alphabets. Now given that there are these different writing systems across languages you can ask important questions about how would bilinguals acquire reading and writing in these different systems. For example, whether there will be any transfer effects like we mentioned in the previous lecture will these effects be additive or subtractive you remember we've talked about additive and subtractive bilingualism in the past. So in this you know in this reference Bassetti for example has noted that there has been an increasing interest in bilingual reading and writing across disciplines such as linguistics, psychology and cognitive science where people are trying to you know make sense of how are bilinguals acquiring this ability to read across two languages given that there are so many differences possible. Moreover researchers have also woken up to practical considerations for example you know according to a poll of experts which you know Bassetti talks about more than 50 percent of children across the world are actually acquiring literacy in a language other than their native language so they typically would have to learn to read and write in at least two languages one would be their native language and the other would be the language of medium of instruction in school as we were   discussing   in   the   previous   lecture   as   well.

Now bilinguals who have the knowledge of only one writing system are referred to so just to sort of clarify some terminology here bilinguals who have the knowledge of only

one writing system are referred to as monoliterate bilinguals. See you may know two languages but you may know say for example I know or at least I think I know some Urdu but I am definitely not capable of writing or reading in Urdu. So in that sense if the only two languages I knew were Hindi and Urdu then I would be referred to as a monoliterate rather than a biliterate but given that I know both Hindi English and Urdu and maybe a couple of other languages I would basically and I am at least aware of the ability of reading and writing in Hindi and English so then I would be referred to as a biliterate bilingual. So if you know reading and writing in at least two languages you are a biliterate bilingual if you know reading and writing in only one language then you are a monoliterate bilingual and I hope that is you know relatively clear now. Now an individual who has knowledge of two different scripts can also be referred to as a biscriptal such as a person who knows both Chinese and English script.

Now here when I am talking about differences between scripts I am talking about two categories of scripts. Alphabetic morphamic, alphabetic alphasyclic. So these are also again terms just for classification because these will come up later when we start talking about these things just to sort of clear there I am just putting these terms out there. Now how do individuals acquire the ability to read and write in two languages. Now in some respects learning to read in one writing system after another or even simultaneously is not really different from learning it as a first or only writing system.

Say for example when I began to or if somebody begins to read in read and write in English they would pretty much follow the same conventions as you know somebody who is doing it for their first language. So I let's say if you suddenly decide that you know I know English I know one Indian language let me try and learn to read and write in French. Now it would be as if you were doing it for your first language because you will be acquiring that skill for the first time. Interestingly however it would depend it would also interact a little bit with the language that you already know to read and write in. So there will be some kind of correspondence between these two which we have previously   referred   to   as   transfer   effects.

So for instance learning to read in Chinese involves you know learning thousands of Hanzi which are Chinese characters whether it is an L1 or L2 it's the same whether you are learning it as a second language or the first language you still have to do it. All right on the other hand the task of learning to read in two different writing systems could be difficult if the and given that the reader must appreciate the unique characteristics sometimes in their two languages. It would be slightly faster if you know let's say for example the two languages share you know the two writing systems share characteristics. Now any learners of a second language writing system may be facilitated in breaking the code or understanding how the text is encoding the speech if you know because they

already have an idea of how this works. Say for example if I if you know how to read and write in Hindi reading and writing in English would be relatively easier because you would know how this sort of works.

You know how how you know printed characters or written characters depict spoken characters just like that. Okay now one of the requisite skills is to actually appreciate the mapping between a writing system and the language. Now again as I said when we talk about language we are mostly talking about spoken language but unless we are explicitly talking about writing systems and reading and so on. So individuals who are already literate in a given language may therefore find it easier and again this is something that I was just saying to learn to read in a new writing system that is similar to their known language and difficult to and they will find it difficult to acquire reading in a language that uses a very different writing system. For example for me to learn to read and write Hindi and English and for several of us Indians it is not that big of a task.

But say for example if you start teaching me to write in Chinese I think initially it would be some kind of a challenge as it would be you know it would require us to shift from a system that resembles English resemble each other in Hindi and English than a system that is categorically different you know from these two systems which is Chinese. Interestingly research has suggested that young children can actually differentiate between the writing systems they are being taught and they can also they are also good at being able to describe how these things work. Also Koda and Zehler actually reported reading skills that are developed for one writing system can obviously be used to read and spell in another one which again depends upon the similarity between the two. Overall in looking at a larger number of studies a meta-analysis was conducted by Melby, Lervag and Lervag and they actually revealed that children's ability of decoding L1 and L2 skills actually would correlate a lot if both writing systems are of the same category and both are alphabetic, both are morphic, both are syllabic and so on. Let's talk about cross-orthographic influences and you know biliterates.

How do the two writing systems impact each other? Again we've been saying say for example you know it depends it all depends on the similarity between the two writing systems. For instance, in Italian English biliterate may spell the word injury as the word injury in Italian because in Italian this g you know phoneme is actually written as gi which is again very different from English where it is just denoted as the j sound. Similarly, a second language you know Japanese English language learners may be tempted to add u after the closed syllable animal say for example animaru which could basically be due to the addition of this apathetic u in the spoken language. So in Japanese there is this u attached to every spoken word or most spoken words which could just translate to these you know kids learning to write in English for that matter because they

are sort of bringing that knowledge from their Japanese. Also it has been learned that reading and writing processes of an L1 system would also influence reading and writing system in a later learned system.

So from L1 to L2 effects will also be there as we have been obviously talking about. Now again as I said biliterates are facilitated when the writing systems are of the same type and it becomes slightly difficult if the writing systems are different. There is evidence that the same person can read their L2 faster if it is written in the with the writing system similar to that of L1 compared to if it is written in a writing system very different from their L1. Again for example you know Chinese readers of Japanese who are faster are actually known to be faster with kana with the syllabic kana than with the alphabetic romaji script because Chinese is also you know morphemic and kana is also in you know structures graphemes in the same way. Now L1 writing reading and spelling processes are also found to influence L2 reading and spelling processes even if these two things are different.

We will be talking about similarities and transfer effects in detail so far. Let's look at how differences affect. So for example Spanish English readers were found to be disrupted by the task of reading letter sequences that would be unpronounceable in English and they were found more adept at reading English pseudo words than Japanese English readers. So you can see these differences inhibiting these people to be able to pronounce correctly the words in a different language. Similarly Korean English readers were found to rely more on phonological processing for reading English words than Chinese English readers do because Chinese English readers would actually follow morphemic style because Chinese does so and Korean English readers would follow more phonological style because that's what you know Korean does.

Also the influences from an L1 writing system shows up when an L2 is a non-alphabetic system as well. For example, you know native uses of alphabets such as English are actually facilitated when a phonetic radical actually provides information about the pronunciation of morphemic graphemes in Chinese for that matter you know if you can structure it in that particular manner. Overall the accumulated evidence that we have sort of reviewed so far suggests that L1 literacy affects reading and writing in an L2 system. However, biliterates are not just passive victims of transfer from their L1 to L2 writing system they are also innovatively you know and in a very creative ways using their L1 as a strategy to navigate their L2 script. So this is us talking about you know the similarities and differences between writing systems and how would they affect the acquisition of each other.

Let's move beyond this a little bit and let's look at some of the ways in which biliterates

use their two writing systems. So for example it must be noted that a biliterate is not really two monoliterates in one person and they you know seem to have an integrated reading writing system that accommodates both their known languages. So it's not like that the two you know reading and writing systems are very separate from each other it becomes a conjoined system in some ways which basically accommodates the skill of reading and writing in both languages. More importantly it has been suggested that biliterates actually put their skill of being able to read and write in two different scripts to various interesting uses a luxury that is not available to monoliterates for that matter. Let's look at some of these things.

Now biliterates have been shown to use their knowledge of two writing systems better than monoliterate native language users for example second language learners of Chinese have been shown to read faster than native than both native Chinese and native English readers. Even when Chinese is romanized and therefore is you know not providing any morphic information. So again because they know both systems they can navigate much faster and they have better practice in some sense. Interestingly there is also evidence that biliteracy for that matter may have beneficial effects for literacy in the first language as well. For instance individuals who are learning a second language writing system as a school subject for even one hour a week were actually found to outperform their monoliterate peers in also L1 reading and spelling in their at least the early stages of literary acquisition and also up to secondary school.

Now interestingly biliterates have also been known to use their knowledge of language you know different writing systems of various practical purposes say for example to assert identity you know because language obviously is very much intertwined with identity and even scripts for that matter you know if you're using a particular kind of script you are basically conveying okay this is what I you know ideologically believe and this is what I identify with. For example a German Italian bilingual child can actually use L1 German you know L1 German Graffine for correspondences to actually spell L2 words you know which is very similar for example if you look at it that how we romanize Hindi for that matter you know all of our names for example are actually Hindi words coming I mean from this part of the country but we romanize it and write in English and similarly in several ways we you know write words of English in the Devanagari script so we sort of do this very interesting to and fro and it sort of makes for a very interesting phenomena to observe use in advertising billboards and everywhere that you can see. There is also evidence for the fact that the two writing systems of a bioliterate may be co-activated at the same time again we have talked about co-activation you know several times in this course and we know that you know both writing systems are active at the same time because you know they are both available for consideration they are both available for being read aloud and so on and an evidence of this kind sort of emerges if

you look at studies of lexical decision tasks you will see that bioliterates are found to be slower in making lexical decisions to words that are legal in both their languages because they will both be both language versions will be competing for selection. Similarly, bioliterates lexical decisions are slightly more difficult with words that contain rhymes that are pronounced differently in their two languages so when you are going to read that aloud one language is pulling you that way the other language is pulling you that way it creates a conflict and makes this overall thing slightly difficult for a bilingual to go ahead with. So again this is sort of an in-depth analysis of how the you know difficult or easy acquiring you know reading into languages might be and how do the two writing systems interact   with   each   other   and   so   on.

Again in this is a series of lectures where I am talking about how bilingualism and multilingualism affect our practical lives and I hope this made sense. I will see you in the next lecture with more about this. Thank you.