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doi:10.1017/S0142716409990440

Development or impairment?

Joanne Paradis' Keynote Article on bilingualism and specific language impairment (SLI) is an impressive overview of research in language acquisition and language impairment. Studying different populations is crucial both for theorizing about language acquisition mechanisms, and for practical purposes of diagnosing and supporting children with language problems. If the child is a second language (L2) learner it is assumed that the support should differ from the kind of language therapy given to children with language disorders. The article deals with the interface of bilingual development and child language disorders in two dimensions: the discussion concerns the disentangling of bilingual and L2 development from children with SLI, as well as monolingual and bilingual children with diagnosis of SLI. Traditionally, discussions of language impairments have only dealt with children in monolingual environments, but during the last decades an increasing number of studies have extended the analyses to bilingual populations. Contrary to expectations, grammatical development of monolingual children with SLI has been found to be more similar to L2 children than to monolingual first language (L1) children (e.g., Crago & Paradis, 2003; Grüter, 2005; Håkansson & Nettelbladt,

https://doi.org/10.1017/S0142716409990440 Published online by Cambridge University Press

1993, 1996; Paradis & Crago, 2000). These findings are intriguing, and they have inspired new research on both bilingualism and language impairment.

The author presents two theoretical explanations: one is the Rice (2004) maturational model in which language is seen as a developmental process guided by "genetically determined timing mechanisms," where information about the onset, configuration of the system, acceleration rate, and points of change can reveal possible asynchronies in comparisons between populations. It would be expected that L2 children, who are older and more mature and have already acquired another language would differ from children with impairment when it comes to maturation and language development. The other approach discussed is the Leonard model about limits in processing capacity that occur in children with SLI, and it shows up in problems in dealing with auditory information (Leonard, 1998). This model predicts that children with SLI would need more exposure to the target language before they internalize morphological structures of low substance, for example, verb endings. The same explanation can be applied to the bilingual context; bilingual children could also be expected to need more exposure because they are dealing with more than one language. Comparing the two perspectives, the maturational model predicts an L2 SLI difference, whereas the processing model could be possible as an explanation for a bilingual–SLI similarity.

Both models have typical L1 acquisition as point of departure. The use of typical L1 acquisition as the default model is the dominate perspective in most language acquisition research, and it seems natural to start there. However, the increasing number of empirical and theoretical studies on language acquisition in different contexts (e.g., monolingual, bilingual, multilingual, impaired, and, for bi- or multilingual learners, successive or sequential learning) shows that the typical L1 learner is not the only one to develop human language. Hypothetically, there may be different routes as well as different rates of acquisition.

In my Commentary I turn the perspective around by suggesting an L2 theory as a frame of reference. This perspective also highlights in two concerns that I have about many studies on SLI or bilingualism: first, the use of a cross-sectional methodology with group scores; and second, the focus on the distance to an adult norm (i.e., "accuracy") as a means to measure development, instead of concentrating on which structures the individual produces.

The advantage of cross-sectional studies is, of course, that they may involve a large number of informants, and thereby can be seen as more representative. When cross-sectional studies are combined with group scores, however, they do not capture development over time, or give information about the potential in human language acquisition mechanism brought about by individual differences. As is clear from the title of the Keynote Article, "The Interface Between Bilingual Development and Specific Language Impairment," individuals in one population (the bilingual) have in common that they are in progression toward a target, whereas individuals in the other population (impairment) have in common that they deviate from a norm. This means that one group is seen from a dynamic and the other from a static perspective. This imbalance involves a constant shift between two perspectives (like changing between two pairs of glasses): language development and language use.

https://doi.org/10.1017/S0142716409990440 Published online by Cambridge University Press

If the aim is to investigate language development it seems more natural to use longitudinal studies. By following the development of the same individual over time, the developmental trajectory can be established in a more unambiguous way. The potential of this approach is demonstrated in the case study by the author where differences were found between the participants at different points in time.

Our research group has chosen to use a developmental perspective and analyze the performance of L1 children, L2 children, and children with SLI through the lens of an L2 theory (Håkansson & Nettelbladt, 1993, 1996; Håkansson, Salameh, & Nettelbladt, 2003; Salameh, Håkansson, & Nettelbladt, 2004). The focus is on the individual performance at different points in time. Processability theory (PT; Pienemann, 1998, 2005) deals with the dynamics of language development, as expressed by language production. The central assumption is that the architecture of human language processing works as a constraint on grammatical development. PT spells out in detail the processing prerequisites that are needed for the automatization of grammatical rules on different developmental levels. A detailed account of the precise prerequisites needed for the processing of each stage in the development can be found in Pienemann (1998). As a result, only a brief summary of the parts that are relevant for this discussion will be given here. The first step in learning a language is to identify meaningful words and to memorize chunks. The next step is to categorize the lexicon and list the diacritic features of the lexemes in the lexicon in the category procedure. This is when *lexical morphology* emerges. Lexical morphology is a necessary prerequisite for the *phrasal procedure* to work, and make phrasal morphology processable. The processing of phrasal morphology enables the learner to transfer grammatical information between head and modifier within a phrase. It does not, however, allow for grammatical exchange across phrases. For example, the constituents in the verb phrase can influence each other, before the grammatical subject and predicate are recognized. This is the next step, and it implies that the procedure for interphrasal morphology, the *S-procedure*, is processable. When the S-procedure is working, the grammatical functions of the words in a clause will be accessible. This is the stage where the learners are able to use finiteness, which in Swedish is expressed by the placement of the tensed verb. What we have discovered with Swedish children is that both L2 children and children with SLI have particular problems with verb placement. However, the implicational hierarchy of structures is followed by all children, that is, children who can produce structures at Stage 4 are also able to produce Stage 3 structures, whereas children who produce Stage 3 also produce Stage 2, but not necessarily Stage 4. This means that the structures can be seen not as "problems" but as representing developmental stages in the development of Swedish. By choosing a theory of language development, we wanted to emphasize that children with SLI can also be regarded as language learners, who are in the progress of building their own grammar, not merely as individuals with an impaired variety of the target language.

Because PT is not language specific, but draws on general underlying processing procedures that have different expressions in different languages, it is also possible to use the same framework for different grammars, for example, Arabic and Swedish. If there is language impairment in bilingual children it is expected to show up in both languages. In Håkansson et al. (2003) and Salameh et al. (2004),

https://doi.org/10.1017/S0142716409990440 Published online by Cambridge University Press

the use of PT stages demonstrated that most of the impaired bilingual children were lagging behind the unimpaired children in both languages.

My second point concerns the use of accuracy of use of particular structures as a measurement of language development. It may be a limitation because interesting patterns may be lost. This is another example where L2 research could inspire research on language impairment. Typically, L2 researchers study the learners' speech in its own right instead of looking at how far the learners are from the target. When informants do not conform to the norm they do something else instead, and this something may give valuable information about human language development. Again, the example discussed in the author's case study illustrates the importance of using in-depth analyses. It turned out that the L2 children were better off with BE than with verb inflections, despite the fact that both structures could be categorized as belonging to finiteness. In-depth analyses of what are labelled creative examples (*I want is a this*) may be of value. The use of an L2 perspective could reveal systematic functions in the creativity, like when Huebner (1983) matched forms of learner language to functions and discovered that the pattern *is a* was used as a topic marker in his informant.

The advantage with a developmental perspective is that it can explain the order of emergence of certain structures in different languages, and therefore predict which structures will emerge later in a particular language. However, what it does not explain is *why* children with language impairment do not develop like children with typical development. Are children with SLI acquiring their native tongue as if it were their L2? Are there two ways to go: one good (taken by typical L1 children) and one less good (taken by bilingual children and children with SLI)? Can the acquisition of more than one language improve language acquisition in children with language impairments? We still do not know the answer to these questions. Is the maturational program out of tune, is there a lack of critical mass of the structures in the input, or is it a combination of these, and still unknown factors? Clearly, more research is needed. Johanne Paradis has raised some very interesting questions and opened up avenues for further comparisons between different populations.

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doi:10.1017/S0142716409990452

Bilingualism as a kind of therapy?

In her very interesting Keynote Article, Johanne Paradis gives a clear overview of recent research at the interface of bilingual development and child language disorders, and highlights its theoretical and clinical implications. She raises the challenging question of "whether bilingualism can be viewed as a kind of 'therapy' for SLI." At first sight, this is perhaps a surprising question, because one of the predominant views in the literature is that bilingual children with specific language impairment (SLI) will exhibit difficulties and perhaps a "double delay." It is this challenging question that we consider in more detail here.

More specifically, we would like to take a closer look at what Paradis' perspective tells us about the opportunities and vulnerabilities in early child bilingualism in general, for if bilingualism can be advantageous for children with SLI, it follows that it can also be advantageous for typically developing (TD) bilingual children. Paradis, who is one of the few linguists performing research on the interface of bilingual development and language disorders, systematically stresses the positive aspects and the advantages of bilingualism in different child populations. She also rightly reminds us that children who learn two languages before puberty are the majority worldwide.

Paradis furthermore stresses the importance of comparing different bilingual populations to learn more about the possible interaction between factors of success and failure in bilingual development. On the basis of her discussion, we can distinguish four domains in which bilingual child populations may generally differ: (a) age of onset, (b) societal contexts, (c) cognitive maturity, and (d) languages involved.

https://doi.org/10.1017/S0142716409990440 Published online by Cambridge University Press