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Introduction: Definition, Brief History, and Taxonomy of Individual Differences

Why do individuals differ so much in second language attainment success? After all, every healthy human being in an intact social environment masters a first language to a degree of fluency that, in other skill domains, would be recognized as elite or near elite levels... (Segalowitz, 1997, p. 85)

Ever since the early days of its existence, the field of psychology has been trying to achieve two different and somewhat contradictory objectives: to understand the *general principles* of the human mind and to explore the *uniqueness* of the individual mind. The latter direction has formed an independent subdiscipline within the field that has traditionally been termed *differential psychology* but recently more frequently referred to as *individual difference research*. As the term suggests, *individual differences* (IDs) are characteristics or traits in respect of which individuals may be shown to differ from each other. Admittedly, for many psychologists such differences constitute mere distractions to their work: How much easier it would be to formulate valid conclusions and generalizations about the human species if everybody was alike! Research results would then apply to everyone and, based on these findings, we would be able to design effective therapy or intervention that would suit all. Thus, in this ideal world “rules and regulations could be developed to cover all situations, and there would be no unknowns” (Breslin, 1994, p. 224). Alas, although the distinctness that each of us displays may be seen by some as a nuisance, it is still there—and the world may be a better place for it. One of the most important ways in which the social sciences differ from the natural sciences, in fact, stems from the existence of individual differences. The molecules of a cell, if treated identically, will respond identically, whereas human behavior—even that of identical twins—may vary significantly in response to a certain stimulus.

To reiterate, although variability is a central feature of the human species, many researchers find individual differences detrimental to social sciences and this also applies to the domain of educational studies. As Alexander and Murphy (1999) summarized, a dominant trend in educational psychology has been to characterize the teachers and students who populate classrooms as 'learning communities' and to think in terms of the collective more than the individual. Within this orientation, the authors argue, a focus on differences between individual students may be cast as counterproductive to efforts to build communities that work together for the educational good. This is to a certain extent true: The main reason, for example, for applying a group dynamics-based perspective in educational situations is the conviction that the learner group as a social unit can and does override certain individual differences, an assumption I fully subscribe to with my 'group dynamics hat' on (e.g., Dörnyei & Murphey, 2003).

The tension between the individual and the collective also appears in language studies. We can well imagine that second language acquisition (SLA) researchers may become rather irritated with IDs when these prevent the neat formulation of species-wide themes concerning, say, how humans acquire a particular language aspect over time: IDs tend to bring in a '*Yes but...*' factor because there will always be people to whom some findings do not apply. One exception to this variability in language acquisition is often thought to be the process of first language (L1) acquisition, because this always (or almost always) leads to native-level proficiency in the language. But, contrary to common belief, research had demonstrated (cf. Bates, Dale, & Thal, 1995; Shore, 1995) that IDs are active even in this domain, resulting in different learning styles and rates, as well as subsequent strengths and weaknesses in the ultimate attainment of our mother tongue. The outcome of the acquisition of an L2 is significantly more diverse than that of an L1, ranging from zero to native-like proficiency, and a great deal (but not all) of this outcome variance is attributable to the impact of IDs.

The discussion so far may have given the impression that I consider IDs rather unpleasant features whose only function is to annoy us. Far from it. Along with many researchers, I believe that IDs are fascinating and their study can be immensely exciting. Furthermore, they are also very important from a practical point of view: IDs have been found to be the most consistent predictors of L2 learning success, yielding multiple correlations with language attainment in instructed settings within the range of 0.50 and above (cf. Dörnyei & Skehan, 2003; Sawyer & Ranta, 2001). No other phenomena investigated within SLA have come even close to this level of impact.

So what exactly are these controversial constructs? How can we define them? How many of them are there? And what do we know about their role? This book has been written to answer these questions according to the state of the art of our current knowledge. Although the following chapters will

present a thorough overview of past research, my primary purpose for writing this book has not been to provide a book-length literature review but rather to offer conceptual clarification. Most of the ID variables are associated with a complex and rather diverse body of research and theorizing within the field of psychology, and the greatest problem in using these variables in L2 studies has been, in my view, the lack of sufficient theoretical coherence. Accordingly, my key concern in each chapter will be to define the concepts in question and to operationalize them in measurable terms, which is also why the text is accompanied by the descriptions of the most important assessment instruments.

My second objective in writing this book has been to show that IDs are related to some of the core issues in applied linguistics and that they can be meaningfully linked to the most important processes underlying SLA. This link has not been explored sufficiently yet and in a review of the field Segalowitz (1997) was right to conclude that although the L2 literature does identify some of the key phenomena concerning the role of IDs in L2 acquisition, very little is said about the actual processes and mechanisms that are responsible for causing the differential learning impact. However, research since 2000 has made considerable advances into this direction and there is now a sound theoretical basis for establishing meaningful links between ID research and SLA.

Looking beyond L2 learning, I also believe that the study of IDs concerns some of the basic questions of our human existence in general; after all, we are talking about personality, motivation, abilities, and the like—we would be hard pressed to identify another set of psychological factors of similar significance. And, to go even further, IDs are not limited to the human species, but occur throughout the animal scale. As Anastasi (1994) states, investigations of animal behavior, from unicellular organisms to anthropoid apes, reveal wide individual differences in learning, motivation, emotionality, and other measurable traits. As she pointed out,

So large are these differences that the distributions of individual performance overlap even when widely separated species are compared. When tested with the same learning problem, for example, the brightest rat in a given sample may excel the dullest monkey. (p. 419)

DEFINITION

IDs are seemingly easy to define: They concern anything that marks a person as a distinct and unique human being. While this may appear by and large true—particularly if we adopt a broad conception of IDs—we need to

set some restrictions to avoid regarding, for example, someone's tendency to wear a brightly colored T-shirt or a bow tie as an ID. Therefore, all scientific definitions of IDs assume the relevance of *stability*: Differential psychology emphasizes individual variation from person to person only to the extent that those individualizing features exhibit continuity over time (De Raad, 2000). Yet, even with this restriction the kind and number of ways an individual can be different is extensive, due to the innumerable interactions between heredity and environment that occur throughout one's life span. Although the discussion of the nature or nurture debate—that is, whether individual differences are due to heredity or environmental influences—is outside the scope of this book, I tend to agree with Anastasi's (1994) conclusion that the inherited genetic information sets broad limits to one's development and within these limits, what individuals actually become depends on their environment.

So, can the term *individual differences* be further narrowed? It can and it has been: The majority of the books and articles dealing with the subject tend to cover fewer than a dozen ID factors. This is because the actual practice of differential psychology does not focus on mere idiosyncrasies, even when these are stable ones, but rather on broader dimensions that are (a) applicable to everyone and (b) that discriminate among people (Snow, Corno, & Jackson, 1996). As Michael Eysenck (1994, p. 1) summarized it very clearly,

Although human beings differ from each other in numerous ways, some of those ways are clearly of more significance to psychology than others. Foot size and eye color are presumably of little or no relevance determinants of behavior (although foot size may matter to professional footballers!), whereas personality appears to play a major role in influencing our behavior.

Thus, ID constructs refer to dimensions of enduring personal characteristics that are assumed to apply to everybody and on which people differ by degree. Or, in other words, they concern stable and systematic deviations from a normative blueprint. We should note that these descriptions reflect well the basic dilemma for the scientific study of human differences, namely how to conceive of general laws or categories for describing human individuality that at the same time do justice to the full array of human uniqueness (Kolb, 1984). Placing ID research in a historical context is a useful first step in exploring this dilemma.

BRIEF HISTORY OF INDIVIDUAL DIFFERENCE RESEARCH

The origins of ID research go back to the end of the 19th century: Charles Darwin's cousin, Sir Frances Galton (1822-1911), is usually credited with

being the first to investigate individual differences scientifically, and Galton's empirical and methodological research, which also involved developing appropriate statistical techniques for data analysis, is also seen as the genesis of quantitative psychology in general. Following Galton, ID research was firmly and irreversibly put on the research agenda at the turn of the century by the work of French psychologist Alfred Binet (1857-1911). He became interested in individual differences partly as a result of his observations of the different ways his daughters solved problems, and his 1895 article co-authored by Victor Henri on "individual psychology" was the first systematic description of the aims, scope, and methods of the topic. The real impetus to further research was given by the construction of the first intelligence test by Binet and his colleague, Theodore Simon, and ever since the publication of this instrument in 1905 it has been intelligence research and measurement theory that have driven the study of individual differences forward.

The Binet-Simon intelligence scale was devised to separate slow and fast learners in the French school system, and adaptations were soon prepared for use in Germany and Britain. The popularity of intelligence testing spread quickly as the potential use of intelligence measures for selection and recruitment procedures was recognized. In the first half of the 20th century several other ability tests were developed and employed, and significant advances were made in statistics to provide analytical techniques to process and evaluate the test scores, making up what is commonly referred to as the *classical testing theory*. This theory was then applied to the design of tests of personality, attitudes, specific cognitive aptitudes, and other psychological constructs.

The first listing of virtually all differential characteristics was constructed by Gordon Allport and Henry Odbert in 1936: They collected 17,953 descriptive words from an English dictionary and argued that each of these potentially suggested an individual-difference variable. During the subsequent decades this extensive, and frankly unmanageable, list has been condensed by others to the key variables that are discussed currently under the ID rubric (for further details, see chapt. 2 on identifying a parsimonious set of personality traits). The field rapidly gained momentum and by the 1950s it had generated enough empirical research on cognitive, affective, and psychomotor characteristics for Anne Anastasi to prepare her seminal summary of *Differential Psychology* in 1958. With ongoing developments in the study of personality, motivation, and various cognitive abilities, ID research is still a powerful area within psychology, having its own society, the *International Society for the Study of Individual Differences*, and dozens of academic journals targeting either individual differences in general (e.g., *Personality and Individual Differences*) or some specific ID factor

(e.g., *Intelligence*). The importance of IDs has also been widely recognized in educational contexts and a great deal of research has been conducted in educational psychology on how to adapt instruction to the strengths, weaknesses, and preferences of the learners.

INDIVIDUAL DIFFERENCES IN SECOND LANGUAGE STUDIES

It has been long observed that there is a particularly wide variation among language learners in terms of their ultimate success in mastering an L2 and therefore the study of IDs, especially that of *language aptitude* and *language learning motivation*, has been a featured research area in L2 studies since the 1960s (for past reviews, see e.g., Breen, 2001; Cohen & Dörnyei, 2002; Cornwell & Robinson, 2000; Dörnyei & Skehan, 2003; Ehrman, 1996; Ellis, 2004; McGroarty, 2001; Oxford, 1999c; Oxford & Ehrman, 1993; Sawyer & Ranta, 2001; Robinson, 2002; Segalowitz, 1997; Skehan, 1989, 1991, 1998). In the 1970s the momentum of ID studies was further augmented by influential research on the *good language learner* (for a retrospective review, see MacIntyre & Noels, 1994; for a new perspective, see Norton & Toohey, 2001). The results of this line of investigation indicated in a fairly consistent manner that besides a high degree of language aptitude and motivation there were other learner factors that helped students to excel, in particular the students' own active and creative participation in the learning process through the application of individualised learning techniques. Thus, *language learning strategies* were included into the inventory of important learner characteristics, and Peter Skehan's (1989) seminal book on the subject, *Individual Differences in Second Language Learning*, and his follow-up overview paper under the same title (Skehan, 1991), also added *learning styles* to the 'canonical' list of IDs in language learning.

Thus, IDs have been researched extensively in L2 studies, making the area one of the most thoroughly studied psychological aspect of SLA. As already mentioned, these studies have typically found IDs to be consistent predictors of L2 learning success, and yet in an overview of ID research Sawyer and Ranta (2001) correctly pointed out that the L2-related ID literature has remained relatively uninfluential within the broader field of SLA. This curious situation of isolation, I believe, largely stems from the fact that the original product-oriented conception of the two key ID factors, aptitude and motivation, was incompatible with the inherently process-oriented stance of SLA. We will come back to this issue in the subsequent chapters in detail, but as a preliminary let me note that recent developments in both aptitude and motivation research have successfully broken out of this isolated position by offering a closer and more organic integration with other areas of investigation into how languages are acquired.

TAXONOMY OF INDIVIDUAL DIFFERENCES AND THE STRUCTURE OF THIS BOOK

What are the most important individual differences and how will they be discussed in this book? In the narrowest sense, individual differences in psychology have been equated with *personality* and *intelligence* (see e.g., Birch & Hayward, 1994; Eysenck, 1994; Snow et al., 1996), but usually the term is interpreted more broadly. The International Society for the Study of Individual Differences lists temperament, intelligence, attitudes, and abilities as the main focus areas, whereas in his recent overview of the field, Cooper (2002) talks about four main branches of IDs, abilities, personality, mood, and motivation. Topics of interest for the journal *Individual Differences Research* involve a particularly broad range, covering all areas of “personality, interests and values, spirituality, affective disposition, coping style, relationship style, self and identity, the individual in groups and interpersonal contexts, attitudes and perceptions, cognitive functioning, health and lifestyle, assessment, and individual differences related physiological, organizational, and education topics.” Finally, in the recently published *Encyclopedia of Psychology*, sponsored by the American Psychological Association, De Raad (2000) offered a similarly broad specification, with possible characteristics including “attitudes, values, ideologies, interests, emotions, capacities, skills, socio-economic status, gender, height, and so forth” (p. 41), and as Revelle (2000) described in the same encyclopedia, research on individual differences ranges “from analyses of genetic codes to the study of sexual, social, ethnic, and cultural differences and includes research on cognitive abilities, interpersonal styles, and emotional reactivity” (p. 249).

Thus, the concept of ‘individual differences’ is rather loose, containing certain core variables and many optional ones. It seems clear that for a book addressing individual differences from an educational perspective one needs to select *personality*, *ability/aptitude*, and *motivation* to start with as these are invariably seen as principal learner variables. Accordingly, each of these attributes will be addressed in a separate chapter (chaps. 2 through 4) and the discussion of personality will also cover related concepts such as *temperament* and *mood*. In the L2 field, as we have seen, two further factors have traditionally been treated as key IDs, *learning styles* and *language learning strategies*. I will follow this tradition (chaps. 5 and 6), although the chapter on ‘learning strategies’ will shift the focus from the actual learning techniques applied by the students—that is, ‘learning strategies’ proper—to the learners’ *self-regulatory capacity* that underlies their strategy use. Finally, chapter 7 carries the vague title of Other Learner Characteristics to allow me to

describe five ID variables that for one reason or another have not been discussed in the previous chapters and do not warrant a chapter of their own: *anxiety*, *self-esteem*, *creativity*, *willingness to communicate* (WTC), and *learner beliefs*.

Let me conclude this introductory chapter by mentioning three issues that I originally wanted to cover but decided to exclude in the end. First and foremost are the learners' age and gender. Both variables have been shown to play a significant role in affecting language learning success and there is a considerable amount of literature on them. The problem with these two basic demographic variables is, however, that they affect every aspect of the SLA process, including virtually all the other ID variables, and therefore their discussion would have been rather different from the rest of the material in the book, both in terms of length and coherence. For this reason I believe that both topics would warrant a book-size summary, and the fact that no such volume has been written yet indicates the enormity of the task. Interestingly, Ellis's (2004) recent review of ID factors also excluded 'age' from the variables considered on similar grounds (and gender is not mentioned in his summary at all).

Similarly to Skehan's 1989 book, I also planned a chapter on *ID research methodology*. The reason why I eventually decided against this is not the lack of relevance of the topic. To the contrary: I believe that ID research is inextricably linked to psychometrics and research methods, with the issue of *questionnaire design* being at the forefront (cf. Dörnyei, 2003c). However, because I am going to discuss specific assessment principles and techniques throughout the chapters in an ongoing manner, the material that would have remained for a separate methodology chapter would have mainly concerned quantitative data analysis and statistics. And because the range of statistical procedures used in ID research covers most of the standard statistical repertoire, I felt that such a discussion has been much better done in the numerous available handbooks and manuals on statistics. Let me highlight here just one interesting publication of this type: Few people in the L2 field know that Robert Gardner, one of the leading researchers in the area of L2 motivation (which is my own main specialization field), is also an international expert on statistics and has published a recent book entitled *Psychological Statistics Using SPSS for Windows* (Gardner, 2001b).

Finally, let me state that I have made a number of strong claims in this book which might generate controversy and which even some of my friends whose opinion I value will disagree with. Although I did my best to support these claims with arguments, I fully accept that there may be angles that I have not considered. Therefore, I sincerely welcome any future discussion of the issues raised in the following chapters—my hope is that this process will

result in a fuller understanding of the role of IDs in second language acquisition (and also that friendships will remain).