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The Specialization Codes and the Semantic Resources for the Formation of Coding Orientations¹

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Abstract: Specialization codes in Legitimation Code Theory (LCT) are concerned with the ways agents and discourses within a field are constructed as special, different or unique and thus deserving of distinction and status. The formation of coding orientations is a social activity whose specific specialization codes define how individuals' identities are constructed legitimately and specify how semantic resources are distributed according to the legitimate identities. Joining the theory of individuation and the specialization codes, this paper explores the specific specialization codes and the semantic resources allocated in accordance with these codes of legitimation in the formation of coding orientations. The theory of individuation holds that social semiotic resources are allocated to individuals according to their socio-cultural identities. Modified by various modalities of specialization codes, epistemic and social relations offer a way of specifying the individuals' identities in the allocation of social semiotic resources. The individuals' identities are determined by specific epistemic and social relations, which form the specific specialization codes for the formation of coding orientations. Conditioned by different modalities in the specific specialization codes, the individuals will gain corresponding social semiotic resources which will enable them to form different coding orientations.

Key words: specialization codes; individuation; socio-cultural identity; coding orientations

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1. Introduction

Since the 1960s Systemic Functional Linguistics (SFL) and Bernstein's sociology of education have been engaged in a transdisciplinary dialogue. So far, there have been four phases in the dialogue. The first phase concerns semantic variation and coding orientation; the second phase centers around genre-based literacy and pedagogic discourse; the third phase focuses on field and knowledge structure; the fourth phase concentrates on grammatical metaphor, individuation/affiliation, identity and Karl Maton's Legitimation Code Theory (LCT) (Martin 2013; Zhu 2011). LCT has been developed by the sociologist Karl Maton, who has drawn on Bourdieu's relational sociology and Bernstein's theories of code and knowledge structure. The fourth phase of the transdisciplinary dialogue focuses on both the connection between grammatical metaphor and the dimension of Semantics in LCT and that between the theory of individuation and the dimension of Specialization in LCT. The connection between grammatical metaphor and Semantics dimension can be regarded as an extension to the third phase of transdisciplinary cooperation. The current research focuses on the complementarity between the theory of individuation and the Specialization dimension.

According to Martin (2011: 54), the fourth phase of this transdisciplinary dialogue returns to the central topic of the first phase—language users, thus completing a full circle of the dialogue between SFL and sociology of education. The first phase discusses variation of language use among individuals and the fourth phase goes deeper to probe the causes behind the linguistic variations. In other words, this stage of dialogue aims to unravel the causes for linguistic variations by relying on the complementarity between the theory of individuation and LCT's Specialization dimension. Since coding orientations can promote the development of a codal variation which is a major type of linguistic variations (Matthiessen 2007: 539), this paper targets the formation of coding orientations by focusing on three questions: (1) How can the theory of individuation complement the specialization codes? (2) How can the complementarity explain the formation of coding orientations among children? (3) What semantic resources are distributed according to the specific specialization codes for the formation of coding orientations among children?

We begin in section 2 by introducing the basic theoretical concepts of individuation in SFL and the Specialization dimension in LCT. Section 3 discusses

the complementarity between the two theories and draws up a complementary roadmap for the transdisciplinary research. Then in section 4 we use the joint framework to analyze how specific epistemic and social relations generate coding orientations by applying Bernstein's concepts of classification and framing. Section 5 presents a linguistic interpretation of the specific epistemic and social relations and discusses the semantic resources which are more likely to be distributed to children for the formation of coding orientations. In section 6 we conclude the analysis by making clear the implications of the research for the cultivation of coding orientations and the literacy development of children.

2. Theoretical background

2.1 Coding Orientations

Different forms of social relation can produce various linguistic codes, which refer to the principle of regulating the selection and organization of speech events (Bernstein 1971: 144—145). The linguistic codes regulate the linguistic choices which individuals make across all linguistic levels. The semantic resources under the control of individuals are determined by his/her social relations, i.e. their socio-cultural identities. Children in families with different social positions acquire different semantic resources, which contribute to the formation of different coding orientations. Language featuring a restricted code is heavily context-dependent, with a simple syntax and a narrow range of lexical choices, not suitable for the expression of abstract ideas; language featuring an elaborated code is less context-dependent, with more complex and exact syntactic structures, suitable for analysis, inference and expression of abstract ideas (Zhu 2011). Matthiessen (2007: 539) points out that coding orientations can produce different semantic styles and contribute to a codal variation which is one major type of linguistic variations.

According to Bernstein (1971), the child's success in school education is to a large extent dependent on his coding orientation. As the elaborated code is more compatible with the pedagogic discourse of the school, it will be very hard for the children oriented toward the restricted code to gain equal educational opportunities. Those oriented toward the elaborated code are more likely to get good education at school. Hasan (1996: 164) points out that different levels of educational success correlate typically with students' social positioning. Different social positioning leads

to the acquisition of different coding orientations. The children born in working-class families are more likely to master the restricted code, whereas those born in middle-class families are more likely to master the elaborated code in addition to the restricted code. The studies by Hasan (2005, 2009) have attested to the influence of social positioning on the child's mode of communication, showing that children from middle-class families have already familiarized themselves with the elaborated code underlying educational discourse prior to school education. The differences between coding orientations are in fact the result of the differential distribution of literacy resources. Students oriented toward the elaborated code have possessed those literacy resources required for school education, while those oriented toward the restricted code have not.

As mentioned above, coding orientations are not concrete linguistic instances. Rather, they serve as a guiding principle for choosing ways of meaning. This semantic principle is construed and developed in the course of socialization between children and their growth environment. Throughout this process of socialization, the discursive interactions with adult caregivers provide children with ample opportunities to construe and develop their ways of meaning (Halliday 1993; Painter 2004, 2017). Crucially, they also offer a semantic environment where children are oriented toward a certain coding orientation.

2.2 Individuation

Analyzing youth justice conferencing, Martin (2009: 563) finds that the analysis from the perspectives of realization and instantiation can only realize an increasingly detailed specification of this discourse type, and in order to explain why the teenage offenders produce this type of discourse the research focus has to be shifted from uses to users of language. This change from language uses to users reflects a humanistic orientation in SFL; since language is created by human beings, the importance of human beings should not be regarded as dispensable to linguistic research (Zhu 2012). Martin's hierarchy of individuation focuses on the distribution of semantic resources among social communities or individuals (Martin & Wang 2008). Martin (2009: 564) approaches individuation from the perspectives of allocation and affiliation. Allocation explores how socio-semiotic resources are allocated to individuals and enable them to build their identities; affiliation is a process of socialization and studies how individuals build affiliation with others

through the use of semiotic resources (Zhu 2012). Figure 1 presents an outline of individuation.

As Figure 1 shows, socio-semiotic resources are allocated to individuals in accordance with certain socio-cultural identities, and the socio-semiotic resources mastered by the individuals are necessary for them to build these socio-cultural identities and realize their group-specific affiliations.

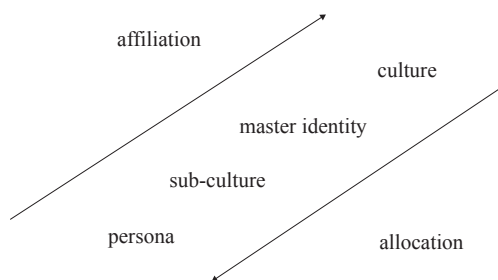


Figure 1. Individuation hierarchy of affiliation and allocation (Martin 2009: 565)

2.3 Specialization Dimension in LCT

As a theory for analyzing socio-cultural practices, LCT concerns “the basis of achievement within a field” (Maton 2014: 29). LCT includes the following five dimensions of legitimation: Autonomy, Density, Specialization, Temporality and Semantics (Maton 2005; Maton 2011). The dimension of Specialization specifies the “ways agents and discourses within a field are constructed as special, different or unique and thus deserving of distinction and status” (Maton 2005: 90).

Specialization codes are based on the fact that practices and beliefs are about or oriented towards something and made by someone (Maton 2014: 29). In knowledge construction, a knowledge claim is always about some object and is always made by someone. The knowledge claim about an object concerns knowledge structure, i.e. hierarchical knowledge structure and horizontal knowledge structure as distinguished by Bernstein (1999); those who make a knowledge claim concern knower structure, i.e. hierarchical knower structure and horizontal knower structure as distinguished by Maton (2007). Hierarchical knowledge structure foregrounds scientific procedures and methods in knowledge construction whereas horizontal knowledge structure downplays the importance of these procedures and methods in knowledge construction; if the dispositions of knowledge makers are backgrounded in a field featuring either a hierarchical knowledge structure or a horizontal knowledge

structure, the field also features a horizontal knower structure; if the unique insight of knowledge makers is emphasized in a field featuring either a hierarchical knowledge structure or a horizontal knowledge structure, the field also features a hierarchical knower structure (Maton 2000, 2007, 2014). In a field featuring a horizontal knower structure and a hierarchical knowledge structure, every researcher is supposed to be equally positioned in making knowledge claims and anyone can produce legitimate knowledge provided they comply with these specialized principles and procedures (Maton 2014: 32). In a field featuring a hierarchical knower structure and a horizontal knowledge structure, knowledge claims are legitimated by reference to the unique insight and dispositions of an ideal knower (Maton 2014: 32) and the researchers are thus hierarchically ranked. The relations between knowledge claims and the proclaimed object of study are defined as epistemic relations (ER); the relations between knowledge claims and the author are defined as social relations (SR) (Maton 2014: 29). According to the varying strength of epistemic and social relations (ER+/-; SR+/-), knowledge construction can be classified into four types:

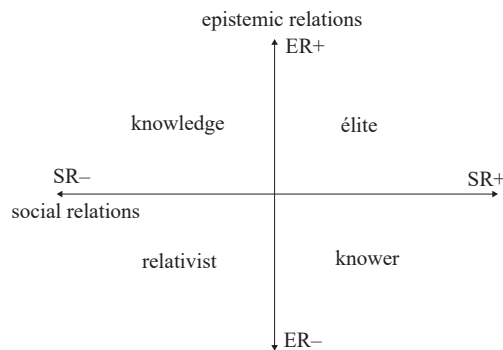


Figure 2. Specialization codes (Maton 2014: 30)

As shown in Figure 2, every type of knowledge making practice is determined by its specific epistemic and social relations, which constitute the specific specialization code for this type of knowledge construction. A knowledge code regards the acquisition of specialized knowledge as the measurement of achievement, stresses the subject's mastery of specialized procedures and techniques in knowledge making and downplays the importance of the individual attributes of the knowledge producer. A knower code emphasizes the knowledge producer's attributes and dispositions (the knowledge producer's gaze), and downplays the importance of the specialized procedures and techniques of knowledge construction.

In an *élite* code the legitimacy of knowledge claims lies in both the knowledge producer's gaze and its use of specialized procedures and techniques in making knowledge; in a relativist code the legitimacy of knowledge claims depends on neither the knowledge producer's gaze nor its use of the specialized procedures and techniques in knowledge making (Maton 2005: 91—92, 2014: 30—31). Every type of knowledge making practice corresponds to a special type of knowledge field, and its specific specialization code also reflects the features of the knowledge structure of the field. A knowledge code displays the features of hierarchical knowledge structure, while a knower code reflects the features of horizontal knowledge structure. The legitimacy and effectiveness of knowledge making practices rests on whether they comply with the specialization code of the knowledge field. Epistemic and social relations in the Specialization dimension, therefore, offer two parameters for evaluating the legitimacy of knowledge making practices. Meanwhile, they also provide two parameters for judging the legitimacy of other socio-cultural activities. Specialization codes were originally used to analyze knowledge construction (Maton 2000; Moore & Maton 2001). Then Maton applied the codes to other socio-cultural activities. For example, Maton (2005) applied the specialization codes in the study of British higher education. We believe that one of Maton's major theoretical contributions is his innovative approach to studying socio-cultural activities, which is based on specialization codes.

3. Complementarity between individuation and specialization

As an underlying mechanism of legitimation, the form taken by specialization codes varies in different contexts. The legitimation for the formation of coding orientations is underpinned by a set of specific specialization codes, which can orient a child to a specific legitimate coding orientation. The formation of coding orientations is a process of socialization, the different forms of which are guided by specific specialization codes and correspond to different socio-cultural identities. In the development of coding orientations, the allocation of semantic resources to children according to their identities is the same process of distributing semantic resources to children in accordance with the specific specialization codes for the formation of their coding orientations.

3.1 Individuation-based interpretation of coding orientation

The theory of individuation holds that socio-semiotic resources are allocated to individuals in accordance with their socio-cultural identities (Martin 2009). It follows that the differences of socio-cultural identities are the fundamental cause for the unbalanced distribution of socio-semiotic resources (semantic or literacy resources). From the perspective of affiliation, as the specific semiotic resources used by an individual reflect his or her identity, the social identity of the individual will be fortified when the resources are applied to build affiliation with other members of the same cultural community. Differences between identities contribute to uneven distribution of semiotic resources, which will, in turn, reinforce identity differences when individuals use the allocated semiotic resources to affiliate with other members of the same community.

The theory of individuation sheds light upon the mutually reinforced connection between socio-cultural identities and the unbalanced distribution of socio-semiotic resources. According to Martin & Wang (2008), individuation concerns the study of coding orientations. Martin (2010: 27) further pointed out that individuation can explain the formation of coding orientations. Although the immediate cause for the formation of coding orientations is the unbalanced distribution of socio-semiotic resources, its fundamental cause is the differentiation of individuals' socio-cultural identities. It can be clearly seen that the theory of individuation gives us a general direction for interpreting the formation of coding orientations, but it does not specify how individuals come to acquire their different socio-cultural identities.

3.2 Complementarity between individuation and specialization

Socio-semiotic resources are allocated to children in accordance with their socio-cultural identities, while the dimension of Specialization can offer a way for exploring how such socio-cultural identities are constructed. The formation of coding orientations depends on the distribution of socio-semiotic resources according to children's socio-cultural identities. Understanding how children acquire their socio-cultural identities can illuminate how socio-semiotic resources are differentially allocated and orient children to a certain coding orientation.

The socio-cultural identities taken up by people in specific socio-cultural activities are the focus of individuation study. As Figure 1 shows, moving down from the macro to the micro levels, the socio-semiotic resources are hierarchically

allocated to individuals in order for them to realize their identity construction. An individual's socio-cultural identity belongs to a specific sub-culture, which is a part of a master-identity, which is further included in the overall cultural system. The theory of individuation thus reveals the hierarchical nature of the individual's socio-cultural identity in a culture. Probably due to the sociological nature of identity research, the way individuals' socio-cultural identities are constructed has not been thoroughly theorized within the linguistic framework of individuation. To wit, a sociological perspective is quite in order for reasoning out how socio-cultural identities are shaped. The Specialization dimension in LCT created by Maton (2005, 2014) offers a crucial tool for the further development of the individuation theory. The complementarity between individuation and specialization lies in the fact that the theory of specialization can reveal how the individual's identity is constructed in the allocation of socio-semiotic resources.

Analyzing written discourse, Matsuda (2015: 145) defines the writer's identity as part of the interpersonal meaning that is negotiated through the text-mediated interaction between the writer and the reader. Similarly, individuals' identities in the formation of coding orientations can be defined as part of the interpersonal meaning negotiated through discursive interaction between them. In addition to the interpersonal meaning, it can be argued that individuals' identities in the formation of coding orientations also incorporate part of the ideational meaning being construed in discursive interaction. We argue that individuals' identities involved in the activity of developing coding orientations can be determined by the legitimate forms of discursive interactions between individuals. The different modalities of specialization codes furnish us with a way of working out the legitimate forms of discursive interactions, whereby revealing the way individuals' identities are constructed interpersonally and ideationally in the formation of coding orientations. The dimension of Specialization, therefore, enables us to connect the allocation of semantic resources with the construction of individuals' identity and further reveals the nature of differentiated distribution of semantic resources among various social groups.

Martin (2009) manages to specify the identities of teenage offenders in youth justice conferencing based on the theorization of epistemic and social relations of LCT's Specialization dimension, which is the first use of the Specialization dimension to explore individuals' identities in socio-cultural activities other than knowledge construction. The reason why the Specialization dimension can be used

here is that every socio-cultural activity involves both the relationship between individuals and the experiential world (epistemic relations) and that between individuals (social relations). Through its varying strengths of epistemic and social relations, the Specialization dimension helps us not only reveal how identities are set up, but also predict what identities can be possibly generated. It offers us a new approach to analyzing how socio-semiotic resources are distributed according to the way individuals' socio-cultural identities are constructed.

4. Epistemic and social relations in the formation of coding orientation

The formation of coding orientations is a social activity. Applying the Specialization dimension, we can work out the specific epistemic relations and social relations within this activity, which form two parameters for the construction of the individuals' identities. We maintain that values of epistemic relations and those of social relations combine to create socio-cultural identities. In accordance with these socio-cultural identities, different semantic resources will be allocated to individuals, who, after developing the same identities, will allocate the same semantic resources to others through affiliation in the future. This process of individuation ultimately contributes to the reproduction of the same socio-cultural identities as well as the same coding orientations. To unlock the myth of coding orientation reproduction, we may need to understand what specific kinds of epistemic relations and social relations are at work in this social activity.

In the formation of coding orientations, both epistemic relations and social relations mainly relate to discursive interactions between adults and children. The epistemic relations are concerned with how the outside world is experientially represented, and highlight the question of *what* can be described as the legitimate experiential representation of the outside world in interactions; the social relations are concerned with those who carry out the verbal representations and highlight the question of *who* can claim to be a legitimate interactant in social interactions between adults and children. Epistemic relation orients the child to the adult's way of representing the outside world, while social relation orients the child to the adult's way of reacting to interpersonal relationship. The adult's verbal representation about the outside world can be distinguished along the scales of experiential classification and framing (C+/-; F+/-); those who carry out the verbal representations can be

distinguished according to the degrees of classification (C+/-) and framing (F+/-) with which they enact interpersonal relationships of power and control with their children. To sum up, the epistemic relations in the formation of coding orientations can be described as experiential classification/framing in which the outside world is either strongly classified and framed or weakly classified and framed through the adult's verbal representation; the social relations can be described as interpersonal classification/framing in which interpersonal relationships of power and control are either strongly classified and framed or weakly classified and framed in the adult's social interaction with the child.

The identities of individuals can be specified with reference to their respective values along the two axes of legitimation: epistemic relations featuring experiential classification/framing and social relations featuring interpersonal classification/framing. Conditioned by their own identities, the individuals will obtain corresponding social semiotic resources which will enable them to form different coding orientations. The formation of an elaborated code depends to a large extent on a higher degree of experiential classification/framing and a lower degree of interpersonal classification/framing in terms of power and control; the formation of a restricted code can be attributed to a lower degree of experiential classification/framing and a higher degree of interpersonal classification/framing in terms of power and control. And we believe that the coding orientations are cultivated as the result of the two legitimation parameters operating in the two spheres of socialization. Figure 3 summarizes the features of epistemic and social relations and the coding orientations they are more likely to generate.

		Relation to power and control	
		C/F+	C/F-
Relation to experiential representation	C/F+		Elaborated Codes
	C/F-	Restricted Codes	

Figure 3. Epistemic and social relations in the formation of coding orientations

5. Linguistic interpretations of epistemic and social relations

As shown in Figure 3, an elaborated code is more likely to be cultivated in interactions featuring a strongly classified and framed experiential representation

of the outside world and a weakly classified and framed interpersonal relationship of power and control between adults and children. On the other hand, a restricted code is more likely to be cultivated in interactions featuring a weaker experiential classification and framing and a stronger classification and framing of interpersonal relation. To help a child develop a specific coding orientation, caregivers need to have a sociologically informed linguistic framework. As Painter (2017: 620) says, the adult plays a guiding role in the child's mastery of language. With a roadmap for developing coding orientations, adults can be made more aware of the coding orientations they may unconsciously cultivate and more able to nurture an educationally viable code in their children. The following discussion is devoted to working out the codes of legitimation for the formation of coding orientations.

5.1 Experiential context independency as epistemic relations

Halliday (1995: 139—140) finds out that in comparison with the restricted code, in the elaborated code more experiential and interpersonal grammatical metaphors are used. Ideational grammatical metaphors are concerned with individuals' construal of the experiential world and hence can embody epistemic relations. According to Martin & Matruglio (2013: 84), ideational grammatical metaphors (especially nominalizations) can contribute to a sense of context independency. For example:

(1) a *Wealthy families manufactured garum in Pompei.*

(1) b *Wealthy families controlled the manufacture of garum in Pompei.*

In sentence (1)a, the experiential construal by the discourse is congruent with the experiential reality; in sentence (1)b, the material process is reified and construed incongruently as an abstract thing. As can be noticed in the two examples above, there exists a relationship of iconicity between the experiential reality and its discursive construal. According to Martin & Matruglio (2013: 84), the iconicity can be regarded as one parameter for ranking experiential context independency: a greater degree of iconicity corresponds with stronger experiential context dependency and a lower degree of iconicity corresponds with stronger experiential context independency. Considering the definition of the elaborated code, we think that experiential context independency is a linguistic feature for distinguishing different epistemic relations in the formation of coding orientations. Semantic

resources featuring stronger experiential context independency can enable discursive interactions to realize stronger classification and framing in the representation of the outside world, whereas those featuring weaker experiential context independency can only realize weaker experiential classification and framing. The more strongly the experiential representation is classified and framed, the more abstract and context-independent the language becomes. More abstract and context independent ways of meaning can help children develop their ability to reason logically and orient them to an elaborated code. It can be said that the varying dependency of the experiential reality representation on a specific context contributes to the formation of coding orientations. Stronger and weaker experiential context independency can be respectively written as ECI+ and ECI-.

Certain caution is deserved when we use the term of experiential context independency. Any use of language is dependent on contexts. Drawing on Halliday's (1978: 144—145) distinction between first-order and second-order features of context, we define the term *context* in the term of experiential context independency as a first-order context which refers to a concrete world of actions where language mainly serves an ancillary function. When meaning becomes independent of its first-order context, it may gradually depend on its second-order context where language serves a constitutive role and meaning has to be encapsulated within a coherent and textually-constructed organization. This may motivate the child to step out the immediate control of the concrete context and organize his meaning in a coherent text, which can contribute to the development of an elaborated code.

5.2 Interpersonal subordination independency as social relations

Interpersonal grammatical metaphors concern interpersonal relationships between individuals and hence can embody *social relations*. For example:

(2)

Mother: Little boys don't play with dolls. (Why do you want to play with the doll?)

Child: I want the dolly.

Mother: Dolls are for your sister. (They are so boring.)

Child: I want the doll (or he still persists with the doll).

Mother: Here, take the drum instead. (Why not play with the drum?)

According to Bernstein (1971: 157), the mother's first utterances are characterized by a restricted code while the second utterances (italicized and underlined parts) by an elaborated code. The second utterances adopt interpersonal grammatical metaphors, such as "Why do you want to play with the doll?" and "Why not play with the drum?". Rather than using imperatives, she uses *wh*-questions and disciplines the child's behavior through demanding information instead of giving orders. Compared with imperatives which realize behavior discipline through demanding services, interpersonal grammatical metaphors may demonstrate more of the parents' respect for their children's ego and self-esteem. Hasan (1993: 99) finds that such expressions can effectively conceal the mother's control over the child and free the child from interpersonal subordination.

The mother can also realize interpersonal subordination by regarding the child as an "extension of themselves" (Hasan 2005: 225). For example:

(3)

Mother: Do you love daddy?

Julian: Mm...

Mother: Do you love Rosemary?

Julian: No...

Mother: Why don't you love Rosemary? (Julian laughs.) Why don't you love Rosemary? (Julian continues to laugh.) You're a ratbag? (Mother realizes Julian is teasing.)

In this dialogue, negative interrogatives carry the presupposition that the mother and her child share the same experience, expectations and ideology (Hasan 2005: 222—223). When the mother uses the negative expressions, she presupposes that her daughter Julian should love Rosemary and share the view with her. This presupposition imposes interpersonal subordination on the child.

According to Hasan (1993), the more the child can be freed from interpersonal subordination in socialization, the more likely the child will develop an elaborated code in meaning. Based on the discussion above, we maintain that the independency from interpersonal subordination is a linguistic feature for distinguishing social relations in the formation of coding orientations. Semantic resources featuring weaker interpersonal subordination enable discursive interactions more likely to realize weaker classification and framing of the interpersonal relationships

between adults and children. Those featuring stronger interpersonal subordination are more likely to realize a stronger classification and framing of the interpersonal relationships. In the first case, the child is made aware of his/her importance. There is an equal relationship in which adults will not seek dominance over the child. Under such circumstances, a weaker presence of interpersonal power and control can provide children with a more democratic and less suppressive social atmosphere, making them more willing to communicate with adults. In the second case, however, there could exist a strong and keenly-felt presence of interpersonal power and control and the child is dominated by the adult. Since the interpersonal relation is strictly classified and framed, adults and children are more likely to be positioned in a rigid power structure with a rigid internal control which will hinder the communication between them. It can be said that the varying degrees of interpersonal subordination independency contribute to the formation of coding orientations. Stronger and weaker degrees of interpersonal subordination independency can be respectively written as ISI+ and ISI-.

An interpersonal environment featuring weaker interpersonal subordination is especially crucial for a child's language development and his/her development of coding orientations. Halliday (1993: 103) suggests that the interpersonal metafunction serves as an initial entry point into new language development where new meanings are first construed in interpersonal contexts. Painter (2004: 138) even puts forward the "Interpersonal First" principle by driving home the idea that language development depends crucially on the child's impulse to share emotions and the communicative need to engage in dialogue with others. The child's emotional engagement, the verbal negotiation of behavior and the dialogic interaction with adults (Painter 2004: 138) all rely on free and equal communication. A strongly classified and framed relationship may seriously hinder this communication and deprive the child of the interpersonal gateway to developing linguistic systems. It may lead the child to develop a restricted code.

5.3 Semantic resources for the formation of coding orientations

Based on the features of epistemic and social relations, as is shown in Figure 3, we can work out how children's identities in the formation of coding orientations are specified in discursive interactions and what semantic resources are distributed in accordance with the identities to enable children to develop different coding orientations.

Different identities correspond to different modalities in the specialization codes for the development of coding orientations. In Figure 4, each of the four modalities is structured through a specific arrangement of epistemic relation in terms of experiential context independency and social relation in terms of interpersonal subordination independency. The four modalities are conducive to the formation of either elaborated or restricted code.

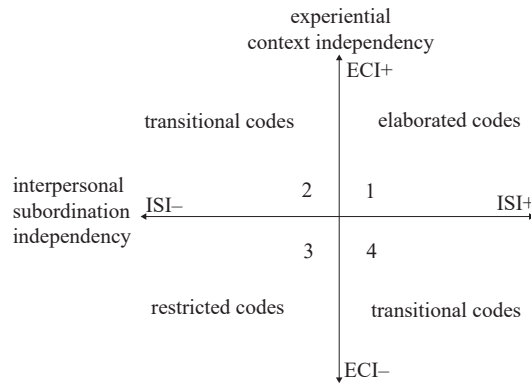


Figure 4. Epistemic and social relations in the formation of coding orientations

As Figure 4 shows, individuals' socio-cultural identities in the formation of coding orientations can be classified into four types: Identity 1 (ECI+, ISI+), Identity 2 (ECI+, ISI-), Identity 3 (ECI-, ISI-) and Identity 4 (ECI-, ISI+). Every type is defined by a specific combination of values in terms of experiential context independency and interpersonal subordination independency, which forms a specific specialization code in the development of coding orientations. When individuals take up Identity 1 and participate into its corresponding activity, they will be allocated with the semantic resources which will promote the development of the elaborated code; when they take up Identity 3, the allocated semantic resources will lead to the development of the restricted code; when they take up either Identity 2 or Identity 4, the allocated semantic resources will help them form a transitional linguistic code featuring either ECI- and ISI+ or ECI+ and ISI-. The formation of the elaborated code depends on the fact that educators have attached great importance to the allocation of semantic resources featuring both strong experiential context independency and strong interpersonal subordination independency when the children take up Identity 1 in socialization; the development of the restricted code is related to the fact that educators have deemphasized the allocation of these semantic resources when the individuals take up Identity 3 in the socialization process. The

difference in educators' attitudes to these two types of semantic resources reflects the difference between the specific specialization codes which underlie the four types of socializations in the formation of coding orientations.

6. Conclusion

The complementarity between individuation and specialization codes is one important topic in the fourth stage of dialogue between SFL and Bernstein's sociology of education. It aims at clarifying the inter-relationship between individuation and identity. The Specialization dimension in Maton's LCT provides a crucial tool for the further development of Martin's theory of individuation. The specialization tool can specify the formation of identities in the distribution of socio-semiotic resources and hence connect such distribution closely with individuals' socio-cultural identities. Epistemic and social relations in the dimension of Specialization offer two parameters for specifying individuals' socio-cultural identities. In the formation of coding orientations, specific epistemic and social relations combine to form different socio-cultural identities. Against these identities, individuals will gain corresponding socio-semiotic resources which will enable them to form different coding orientations. By working out the specific specialization codes for the coding orientation formation, we are better equipped to carry out constructive pedagogical intervention during the critical period of nurturing either a restricted code or an elaborated code in a child. By disclosing the mystery of elaborated code development, we can be more efficient in our efforts to achieve a balanced redistribution of pedagogically significant literacy resources. The earlier the intervention in the development of coding orientations is in language education, the more efficient the literacy resource redistribution will be, and the more contributions can be made to educational justice.

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