

## Language Externalization\*

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### Abstract:

*The phenomenon of language externalization can be summarized in three aspects: the trans-humanist development of language acquisition and use; the trans-societal development of semiotic function of language and the vicissitude of language identity function. Language use that features man-machine dialogue heralds transcending its biological boundary; linguistic activities dominated by foreign language learning neglects the social nature of language and the manipulation of language identity featuring language planning show the nature of artificial nature. The current phenomena of a wide range of language externalization show the inadequacy of existing linguistic theories: the biological foundation of language restrains the development of language technology; the semiotic nature of language dissociates itself from social reality and the cultural aspect of language disregards the dynamics of language development. The discussion of language externalization is conducive to understanding the mechanism of human language emergence and development, predicting its developmental pathway in the future.*

**Key words:** language externalization; man-machine conversation; foreign language learning; language identity; linguistic theory

### Introduction

Language internalization could be associated with language externalization<sup>1</sup>. Externalization, formally, could be defined as the treatment of a certain entity beyond its boundary/scope. For instance, language, in its original sense, is specific to human beings, thus it is a typical phenomenon for mankind to acquire languages, which is an internal treatment. However, any attempt to orient chimpanzees to acquire human languages represents a phenomenon of language externalization. If this attempt of chimpanzees acquiring human language is an individual attempt, which turns out to be a failure, then the more noticeable and prevalent phenomenon rest upon the endeavor to guide robots to learn human languages

It is widely acknowledged that human language acquisition is a phenomenon of internalization (Negueruela-Azarola, 2012), which is a well-accepted definition in terms of sociolinguistics. In other words, language itself is external, but the acquisition is an internal process. In spite of the theory that human has an innate Language Acquisition Device (LAD)<sup>2</sup>, internalization of an external language is essential for gaining competence in this specific language. Thus our enquiry is what should be encompassed in language externalization besides the endeavor to guide non-human beings to master human languages.

To approach language externalization theoretically, it is essential to define the original boundary of languages before detecting the way of operationalizing language externalization. Thus, specifying language boundary ought to be preceded by defining what language indeed is. In other words, it is imperative to make the definition of language clear. Otherwise, not only the concept of language externalization could be clouded, but more confusion might also

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1. Linguistic researchers are familiar with the concept of INTERNALIZATION, as related theories posit that language acquisition is a process of internalization.

2. Language Acquisition Device by generative linguists also mentions internalization, but it is only confined within a psycholinguistic perspective. This issue can be elaborated on in another paper. The theoretical prerequisite for this paper is that language is a social phenomenon and one of the facilities in a speech community.

be incubated. With respect to the definition of language, a widely accepted version of the term ‘language’ is ‘a means for human beings to communicate’.

Some more refined but relevant definitions include: ‘language is a semiotic sound-meaning system which is unique to human beings and is used to convey thought and ideas’, ‘language is the deposit of human history and culture, which functions as a social cohesion and communication’, and so on. The aforementioned definitions are refined with different focuses; nonetheless, their core viewpoints remain basically consistent, especially in defining features, such as mankind, society and culture. In this sense, we could start from these characteristics. For instance, transcending the human boundary of language acquisition and language use is deemed as a facet of language externalization. Another case in point, moving language out of its social boundary or dissociating language with society is another manifestation of language externalization. Still a further example, if language itself is a cultural phenomenon, then the development of de-culturalized language could be another way to externalize language.

In the following sections, we will discuss language externalization from several major aspects, and we therefore draft the themes as follows: the trans-humanist development of languages, the trans-societal development of language and the trans-cultural development of language. Our best effort has been used to extensively exemplify each theme, analyze and pinpoint the nature of externalization. Further, we discuss the cause of emergence and development of language externalization before looking at the challenges and implications of language externalization upon theoretical and applied linguistics. We therefore divide the article into six sections. Section one is the Introduction. Section two focuses on the trans-humanist development of languages. Section three looks at the trans-societal development of language. Section four concerns the trans-cultural development of language. Section five is devoted to the background and cause of language externalization. Section six discusses the challenges and implications of language externalization upon theoretical and applied linguistics.

## ***II. Trans-humanist Development of Languages***

In the first place, the issue of how language is defined should be clarified. It is essential to discriminate the so-called ‘language’ from the one in its own right and not entangle the two. For instance, computer language is actually defined as mathematical expression that denotes a semiotic system describing mathematical concepts; the saying ‘we have common language’ refers to the shared thought and mentality; philosophical language and post-modernist language point to a parole system, and so on. All these above-mentioned “languages”, regardless of their relevance to language, are not the ones that are designated by linguists, nor are they the languages signified by the common sense. These languages, as they are called, are only languages in metaphorical sense; they are thus neither language in its own right, nor the phenomenon of language externalization. Instead, these are no more than the extension of the actual concept of language, rather than the development of externalization of language itself.

Although computer language, a constellation of program instruction codes, is not a natural language, plenty of software is invented based on computer language to analyze natural languages. Some function quite well and reach the capacity to generate communicable language with human beings. In this sense, the unique human faculty of using language to convey information has, to some degree, been acquired by computer. Language acquisition and language use are no longer confined to mankind, as machines can, to some extent, successfully replace individuals to conduct man-machine dialogue<sup>3</sup>. The current development of language technology, both according to experiments and researches and according to applications readily available in the market, blurs the boundary between “genuine” and “created” languages, reaching an unprecedented height where it is difficult to distinguish between languages of both mankind and machine. It is therefore predictable that with the application of in-depth learning techniques, jobs related to human language use could be increasingly substituted by machine in the foreseeable future and more interactions between mankind and machine will adopt the interface of natural languages.

As a semiotic, coding, and information system, language has been already partially applied and loaded on man-made devices, rather than exclusively accessed, retrieved and operationalized by mankind. In this way, language boundary, as conceptualized within pure biological phenomenon in the past, has already been transcended. If human languages are confined within their own boundary-mankind themselves, then the current development shows signs of emerging trans-humanism. Admittedly, these also derive from human activities. Thus, it is a typical phenomenon of externalization, manifested in the form of human creativity.

The existing language functions transcend its original means of realization, for example, interlocutory function can be accomplished by devices loaded with corresponding software. Additionally, the newly emerging language function could also be deemed as an example of language externalization by which the denotation and connotation of the concept-language have been expanded. A case in point is that man-machine dialogue could still be categorized into human use of language. If two robots meet and converse with each other in English, the defining

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<sup>3</sup> . A chat software, developed by a Russian research team in 2014, named Eugene, modeled on a 13 year old Ukrainian boy, successfully passed the test and its interlocutor believed it was a real man.

nature has been changed further. Inter-computer correspondence, in terms of using computer languages, could only be an analogue.

However, computer correspondence has utilized human languages, albeit an incomplete substitution of the latter. It is therefore more plausible to redefine language as a communicative tool between human beings and human-made intellectual entities than a communicative tool. In fact, regardless of in virtual or actual world, mankind is attempting to have dialogue with aliens. It is reported that scientists have already devised a grammar system that can converse with aliens based upon a multitude of human languages to cope with emergencies. Thus, the conceptualization of language has surpassed not only the scope of human beings and human-made robots, but also to any intellectual entities that have the potential to converse with. It is certain for us to naturally associate language with the communication between mankind and animals. As a matter of fact, many communications between human beings and their accompanying animals are partially realized via human languages. Undoubtedly, the verbal communication between mankind and animals is largely one sided in human-centered life activities, and animals could not be able to convey information and address mankind in human languages. Nevertheless, the newly available product 'translating device of dog language' breaks the confinement, which is another manifestation of language externalization.

### **III. Trans-societal Development of Language**

Sociolinguists emphasize that language is not a biological phenomenon in a sheer sense; instead, it derives from human society. Individuals may not need languages to communicate with themselves. Nevertheless, those who lose contact with society tend to lose their language ability. Furthermore, language is not individual-specific, rather, it spins out of society. Only those who live in a specific community are able to acquire the related language; therefore, the claim that language acquisition is an internalization process emerges. What we wish to ask is whether language can exist independently of society. Generally speaking, it is not possible for this case. However, some attempts, both successful and unsuccessful, have been made to facilitate language development beyond societal scope.

It is essential to note, firstly, that individualized language is conceptually implausible if not referred to the metaphorical claim of idiosyncrasy and style of individual language practice. This is due, after all, to the fact that language belongs to society. Even if there is only one remaining person of a community who uses a certain language, the sample that they could offer still represents the community language, rather than his/her personal language.

Language is dependent upon society. Specific languages exist in specific communities. In this sense, endangered languages could be attributed to the abandonment by community, or in other words, the language of a to-be-disintegrated community. Nevertheless, if we document a dying or dead community language, then is it still a language or a part of language for what has been recorded?

We are able to record the phonological, grammatical, lexical and semantic system, exemplars, pronunciation, and even a whole chunk of interlocution. Are these language itself? Or at least are these parts of a language? What defines language? Is it a living language which is used and constantly evolving in a community, or does it encompass both the living languages and the dead ones? Quite obviously, numerous linguists hold that language is a semiotic system that includes phonology, grammar, and lexicon. If it is still in use, then a living language; if none in the living people uses it, then a dead language. For those linguists, both living and dead languages fall into the category of language. In this sense, language has been made so abstract that it could survive independently of society.

The abstract language that linguists refer to is a de-socialized language, extending the scope of the definition of language. This extension, i.e., deeming the findings of these linguists as one part or all parts of a language is a case in point for language externalization. However, for language prior to the emergence of linguistics, linguistic findings fell outside of the category of language. Therefore, one important achievement of modernization may be steering language in a linguistic direction. It appears to be the case that not just linguists' advice is advocated, but the description and prescription of linguistics constitutes the indispensable parts of this language as well when identifying languages.

Taken altogether, rendering languages increasingly linguistic and categorizing non-socially bound semiotic systems into language are representations of language externalization. In line with this thought, a new campaign of foreign language learning emerges. Foreign Language Learning is to study a non-existing language in the societal environment, and what is learned is no more than the knowledge of the grammatical system. If what has been learned is deemed as language, then foreign language learning typically represents one aspect of language externalization in terms of 'language development beyond society'.

The concept of foreign language learning not only dissociates itself with the nature of societal interaction (Xu, 2014), but stands against the socialization process of language acquisition. Basically, this kind of learning could not achieve the desired outcome.

Nevertheless, foreign language learning sometimes works, and this is often due to the fact that the status of the language being learned falls between foreign language and community language, thus benefiting from the para-community language environment, or language learners transform the language knowledge into language competence after immersing into the target language community (Xu, 2013).

We, therefore, could introduce more detailed debates and discussions on language socialization. The present massive wave of migration creates the intricate relationship among language, speech community and community; therefore, speech community dissociates with community; language dislocates with speech community (Xu, 2015). A language is a facility for a certain speech community, and is created through community interaction, for the community, and shared by the community members. However, urbanization reshapes the structure of communities so that the previous community language is introduced into a new place. This language may disseminate, gradually gaining the status of a universal language in the new community. Alternatively, the language is maintained as a home language or a domain language after entering the new community, instead of being disseminated.

All the above-mentioned cases could be grouped into the description and analysis of language urbanization (Xu, 2015). However, the changed two-in-one language-community status could also be deemed as one manifestation of language development beyond society. The difference lies in that the one that dissociates with the previous community does not fully separate from society, instead, it just dislocates from part of the social structures where it was created and maintained. The language that separates from its original community may have been transferred to another speech community; it could also stay away from the community, pushing the language to the verge of extinction.

Related to this is that modern communication technology renders it possible for the diaspora to maintain relatively frequent contact with their original community members. The interaction intensity may even be equal to that in the original speech community, creating discrepancy between speech community members and the eco-geographical members (Xu, 2015).

In summary, language development beyond society can be divided into two categories: one is that a language is forced to separate from society, i.e., the knowledge about language de-socialization and its implication. This is one representation of language externalization, breaking the boundary of language as a social function. Aside from this, the language variants, such as ethnic languages and regional dialects, still keep their vitality despite separation from the original societal structure, still representing and manifesting the externalization of a specific language.

#### ***IV. Transcultural Development of Language***

The nature of language that carries culture and its cultural function also undergoes changes. Culture is created in society, thus separating language from society could correspondingly trigger cultural dislocation. Therefore, it is also a de-culturalization activity to deem languages only as semiotic systems. Nevertheless, not only linguists separate language from culture, but language planners also play a role. Politicians and administrators purposefully adjust and expand languages' communication and identification functions, causing many distinctive facets of language in modern society to stay away from its original feature as a by-product of human evolution. Language constitutes part of culture, and is closely related to the emergence and development of nationalities and nations. In modern politics, language becomes a tool for politics.

Modern technologies allow us to record the sound of languages. Previously, characters and words serve as a main means to keep record of languages, thus the communicative means of writing and reading emerge. Prior to words recording languages, speech communication was only confined to mouth-to-ear mode; therefore, when people started to expand the scope of language to written form, it was indeed a process of language externalization; the subsequent words processing techniques further contributed to the language externalization. As such, language externalization is a relative conception. Therefore, languages underwent externalization at the time of evolving into modern languages.

Modernization can be defined as a series of societal transformation on a global basis, including industrialization, urbanization, secularization, as well as corresponding development of technology, change of market/economic mode, and the establishment of modern countries, and so on (Havilland et al. 2014). Nevertheless, these were changes several hundred years ago, a much shorter time span compared with the several hundreds of thousand years for the emergence and development of languages, a human-specific phenomenon and a civilization representation. However, it was during these several hundred years that linguistics came into existence, and the concept of languages emerged, as represented by ethnic languages. It was also during the time span that language planning activities, propelled by political purposes, and language dispersion, pushed by economic factors, were created. Asides from these, language cognition and practice beyond human being and society also emerged.

The emergence of modern languages, as a language externalization form, redefines the original languages as the one prior to modernized languages. Modern languages feature nationality, politics, and economics.

In the following section, we will discuss three issues: language nationalization and beyond nationalization, language politicization, language dispersion driven by economic and technological factors.

We first look at language nationalization and trans-nationalization. Human history can be traced back to between several hundreds of thousands and several million years; nevertheless, it is believed that human beings was not endowed with speaking capacity until 200,000 years ago. However, speaking is not equal to language. Contemporary people could speak a specific language<sup>4</sup>, so one may ask whether human beings at the initial stage also spoke one specific language. We are not in the position to question the complexity or stability of the original sound-meaning system, but to compare the differing functions of languages at different stages of human history. The fundamental function, communication, remains unchanged throughout; the purpose of communication is to cooperate. In this sense, the communicative role of languages also serves as a defining function; therefore, speaking is equal to using languages based upon these two points. However, studies of origin of language posit that the aforementioned language originated from the initial face-to-face interaction within a small group of people. It is from this that language diversity could be deemed. Do languages show diversity at its emergence? If yes, does the associated identification function exist?

The languages studied in modern linguistics basically point to language diversity with respect to research contents and objects. Regardless of its historical evolution, classification, description, explanation, summary or trace of underlying principle and innate law, all focus on the issue of diversity. Although some take it as an end point, others deem it as a starting line. In other words, if languages were not diversified, there would be a high chance that modern linguists would have nothing to do.

One byproduct of language diversity is the identification function. One fundamental feature of modern language is that it is treated as an identity mark and an identity tool. In this sense, it appears to connote that the identity function of modern languages may be unique, distinguishing themselves from non-modern languages. It is thus conceivable that upon the emergence of language in primitive tribes, language evolution had already existed, and individual language variability could also be used as an identity mark; however, it has not developed into a regular functional driving force. First, it is unnecessary to adopt indirect means to identify interlocutors in face-to-face communication. Second, the nature of language communication is achieved by conquering individual difference to convey meaning, so that interlocutors automatically filter out non-systematic variance. Therefore, individual variance plays no role even in the primitive languages. In addition, individual identity in primitive society itself is a conception in question.

The study of modern language identity is part of sociolinguistics, based upon the conception of social identity. The study on language evolution/variance focuses on group-based changes, reflecting the social structure of a speech community. However, early language identity is geographical in nature, i.e., the accents and dialects identity; the most entrenched secular concept is language identity, which is basically manifested in a negative way, i.e., language non-identity. This socially infers that if a person speaks a language that others cannot understand, they are an outsider. From the perspective of social identity, regarding one as an outsider has yet been the most negative identity, as both the ancient Greek and ancient Chinese demote foreign languages as non-human languages or abnormal languages, and this again adds to the negativity of language identity.

If one sees another group that is incapable of communication as an outsider, this serves as indirect evidence that primitive language cannot function as an identity instrument. This might also be evidence supporting monogenesis theory of language origins. The idea behind this time-honored concept is that only those who can communicate and convey thoughts and emotions are in-groups; people are used to living in a monolingual community. However, language always causes diversity regardless of monogenesis or multi-genesis. Even if in a homogenous community, context-bound speech interaction constantly shows special features, and language flexibility not only satisfies the need at a specific time and location, but also contributes to the diachronic transformation. Language and dialect genealogy are both subject to theory of monogenesis and language typology and creole theory may be more compatible with multi-genesis hypothesis. Nevertheless, all these seemingly contradicted theories have provided evidence from different facets for language being inevitably diverse.

Living in a monolingual speech community for a lifetime may create a misconception that community language equals human language. However, this outdated concept has been nullified and discarded due to societal progress. In the meantime, concept of specific language identity emerges, so that in some languages, for instance, English, one language's name is often equal to an ethnic group's name<sup>5</sup>.

In other words, the ethnic identity can be confirmed almost by language. The uniqueness of an ethnic group is basically represented by its unique language. This, certainly, is an outdated and oversimplified concept, but its impact still persists.

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<sup>4</sup> Here, we also note the recent Translanguaging Theory, which argues for the dislocating phenomenon between speaking and language (Li Wei, 2015). This theory focuses on the speech activities confined within the framework of language identity.

<sup>5</sup> The word Chinese is of polysemy, likewise, Japanese and Portuguese, and so on.

Human language identity has progressed to a new milestone in a positive way, shown by recognizing language diversity, acknowledging languages in other communities, and accepting/adapting to the co-existence of multiple languages. However, the segregation function has been perceived, serving as a means for establishing a society, thus co-construction of language and nationality/ethnicity emerges. Due to co-construction of language and community, language planning has become an important tool of community establishment. Historical records show that proactive language dissemination and language planning had commenced in both Roman Empire and the China's First Emperor of Qin Dynasty periods, matching up, maintaining and consolidating feudal rules in the field of ideology. In contrast, awareness of ethnic languages and communities has gradually been strengthened with the emergence and development of nationalism in recent centuries, whereas ethnic languages become a salient phenomenon as ethnic nations were established around 300 years ago. Therefore, to a large degree, it is safe to assume that ethnic language is the product in the practice of ethnic establishment in an ethnic nation. In other words, it is produced by language planning in ethnic nations.

According to speech community theory (Xu, 2004; Xu, 2015), new language variants may naturally come into being in naturally-formed speech community. Traditional speech community overlaps with enclosed and directly interactive speech community for community members, whereas urban speech community is indirectly interactive. Nevertheless, a larger speech community requires purposeful planning and construction, including facility construction, in which language is the first to be established. This constitutes the ontological design in language planning.

Two parts are designated in traditional language planning theory: status planning and ontology planning. Updated language planning theories encompass many other facets, but still centers around the above two parts. Purposeful language planning essentially commenced from the time when a number of newly independent countries set to establish their national and official languages after WWII. Status planning is defined as the establishment of different language variance functions and the context of use via legislation and administration. Ontology planning, which echoes status planning, includes formulating and applying language norms, especially for the language variants of national language, official language, and standard language.

According to speech community theory (Xu, 2004; Xu, 2015), language planning is a speech community design, as the aim, object, and scope are all set within a specific community. Generally, an established aim is to convert a political community into a speech community. As stated, it is an integral part of ethnic construction in ethnic nation, whose philosophy is that an ethnic group is a community, which brings a culture and a language.

Under the guiding principles above, not only is the concept that an ethnic group constitutes a monolingual community translated into practice, but also the close relationship between language and ethnic culture gets due attention before being theorized; this theory is thus disseminated with ethnic countries' support. As modernization advances, modernized languages develop accordingly. Modernized language refers to nationalized and politicized language, which is planned in nature. This kind of language is both a communication and identity tool. The most publicized cultural difference rest upon national culture. Moreover, since language is the product, carrier and inheriting means of culture, language becomes the soul of a nation and an important means of national identity.

The socio-historical background of the emergence of linguistics is embedded within the societal environment where a nation comes into being and develops. Therefore, the basic unit is regarded as a national language. Subsequently, with the support of politics, the continuum of dialects is divided into respective ethnic languages as per political boundary. Correspondingly, when a country is forced to accept the reality of multiple language ethnicities, national language and official language are established, thus differentiating the political status of languages.

During this process, the function of language identity has been elevated and has been involuntarily nationalized, whereas language variance which cannot be promoted as a national language may end up as a dialect or erased in the process of standardization. Due to its super powerful role of national identity and local cultural identity, language acquires the function of political mobilization, serving as a political tool. On a positive note, it is the language unification that strengthens political identity; on a negative note, language conflicts may emerge.

The defining feature of modern languages in the 21<sup>st</sup> century is the significant development of language's group marking function, political symbolism, institutional denotation and language totem (Shi, 2015). However, new development in the 21<sup>st</sup> century has brought new phenomenon of language externalization, which includes, among other things, the reverse development of the above stated process, i.e., de-nationalization, de-politicization, de-identification in language development.

As a globalized language, English greatly weakens the function of its national identity, as ascertaining a speaker's nationality and ethnicity in recordings is increasingly difficult. Quite obviously, English, as an international working language, does not solely represent UK or US. The concept of national common language is another attempt for language de-nationalization. As an identity tool, the successful implementation of national languages cannot be

guaranteed; however, both successful and unsuccessful practices are manifestations of language externalization. Additionally, the progress of foreign language learning and language specialization have both impacted and weakened the role of cultural identity of language. Furthermore, the development of language de-humanization also intensifies the trend.

It is claimed that the 20<sup>th</sup> century witnessed the nationalization and politicization of language, whereas the 21<sup>st</sup> century should be an era of language de-nationalization and de-politicization. Far-sighted language planners are supposed to notice the trend. Recent data suggests that the momentum of language dissemination and development increasingly rely on technology and economy, shattering the shackle of politics, transcending cultural tradition and educational support. Not only have we noticed the phenomenon of language internationalization, but also the de-localization of dialects as well as the emergence of internet language and the development of language's multi-function and multi-register.

In summary, the trans-cultural development of language could be divided into two parts: one is that one language variance, as a national language, has been purposefully stripped of national culture features so as to facilitate its internationalization; another is that an ethnic language is used beyond the boundary of its cultural community as a common language for another ethnic group, or a common language spoken in a multi-ethnic nation. Moreover, both the communication and identity functions can be magnified in languages whose scope has been widened.

#### ***V. Background and Cause of the Emergence of Language Externalization***

Discussing the issue of externalization, it is necessary to notice the relativity for the division of being internal and external. Since its emergence, language has undergone numerous significant changes, in which what refers to externalization may have shifted to what points to internalization, thus not suitable to be dealt with in the previous external way.

Therefore, all externalization issues are constrained by conditions. Specific contents could be externalized according to concrete conditions. For instance, so far, mankind still regards language as a unique human endowment and under this prerequisite, human-machine dialogue could be deemed as a manifested language externalization; it is predictable that when it becomes a common practice for robots and mankind to share human languages, human-machine dialogue would have no bearing on externalization.

Asides from breaking the confinement that only human beings are able to speak, what is essential at present encompasses de-socialization and de-identification of languages. Examples will be presented in the following section.

The reason why foreign language learning, as a de-socialization language activity, has become language externalization is twofold. Firstly, the normal state of language is perfused in the interaction in the community language, and community activity constitutes the realm of language. Secondly, foreign language learning, which is independent of community language practice, is still assumed to be language activity; however, it could be interpreted and treated as a typical form of internalization without the first condition; foreign language learning could also be considered as one form of non-linguistic activity without the second condition. Therefore, only by combining the two conditions can we define foreign language learning as a phenomenon of language externalization.

Mandatory language identity, as exemplified by status planning, is based upon two conditions to be categorized as language externalization. Firstly, language identity is generated in speech community interaction, and language identity inside the speech community is a common content. Secondly, although mandatory language identity does not emerge in a spontaneous way and lacks objectivity, it still exerts some influence. The two conditions are complementary in nature: without the first, internalization and externalization could not be differentiated; without the second, association with language cannot be established.

In the 200,000 years' history of human languages, specific historical contexts and given causes result in the emergence of the aforementioned three kinds of language externalization: Firstly, the trans-human language development is just in its infancy, which is set in the background that human beings enter the era of information and globalization, reaching the point where computer science and artificial intelligence have highly developed. Demands for overcoming language barrier and using natural languages in the information age have been ever increasing in this era. Language processing technologies, such as natural language processing and machine translation, satisfy the demands. Secondly, the development of linguistic de-socialization and its implication in application feature the 20<sup>th</sup> century linguistics. As sociolinguistics progresses, this linguistic skewing trend has been reversed.

Foreign language learning and impractical foreign language education have gradually phased out against the backdrop of globalization. Globalization has reduced almost all languages to community languages, and language ability could be acquired via community practice. Thirdly, at present, it is an important trend for language to develop beyond national culture, which is set in the background that the national political system is weakening and human activities become increasingly specialized and internationalized. Therefore, the previous speech community that overlaps with national/ethnic ones start to show signs of loosening and disintegrating; previous language

identity that perfused in national identity show signs of independence. As a result, the current language de-identification is accordingly positioned at the initial state, and the full de-identification of language is still unpredictable. However, it is an inevitable tendency to decouple with national identity. To summarize, language externalization that develops beyond human beings may reverse the direction from being external to being internal. In the foreseeable future, language will no longer be a biological phenomenon. Linguistic activities that transcend society are a misunderstanding, which can only be considered as a failed attempt for language externalization. However, with the development of language beyond human being and de-identification, this may become true in the future. The division and separation of language and culture is a new development trend depending on political and economic momentum, and it remains yet unknown as for its prospect. However, excessive externalization does not correspond to the laws of nature, and those who wish to alter languages should be measuredly cautious depending on concrete situations.

#### ***VI Linguistic challenge and Implication of language externalization***

Language externalization presents major challenges to existing linguistic theories; moreover, it offers implications for developing new ones. It also confers new opportunities for extending and developing applied linguistics. Discussion of language externalization is especially facilitative to deepening our understanding of current and historical language phenomenon, avoiding shallow, partial, and stereotyped interpretation.

The most influential in the modern linguistic theories can be divided into the following categories: biological linguistics, semiotic linguistics, and cultural linguistics. It is easy to find the correspondence between the above language domain concepts and theories without even understanding the ins and outs of a specific theory. Biological linguistics refers to the domain where language is unique to human being. Semiotic linguistics maps the domain where language is a semiotic system composed of phonetics, grammar, and lexicon. Cultural linguistics matches the domain where language is believed to carry the ethnic culture.

Developed in the mid-20 century, generative linguistics is featured by the critical period of language acquisition, reasoning that individual human beings is endowed with innate Language Acquisition Device (LAD), and this is a typical example of biological linguistics. Its related theories are corroborated by subsequent findings in psycholinguistics and pathological linguistics; therefore, this school gains support from neurological and genetic studies to differentiate human being and animals<sup>6</sup>. Credited as the beginning of modern linguistics, structural linguistics emerges in the early 20<sup>th</sup> century. Linguistics along this line is underpinned by its semiotic structural system as research base. The shared characteristics of structural linguistics, generative linguistics, and other schools of formal linguistics lie in conducting research by separating languages from society. Its scientific merits, on one hand, lie in the link to explaining human brain and cognition; on the other hand, it could illustrate the systematicity and complexity of the semiotic system. With respect to its application value, the advantage consists in solving encoding and decoding issues and the engineering issues in artificial intelligence. Nevertheless, semiotic linguistics neglects the issue of language symbols or codes constrained by society, rendering itself more abstract and dislocating from language facts, thus weakening its explicability, testability, and applicability.

Cultural linguistics could also be referred to as ethno-cultural linguistics, emphasizing that language is the essence of ethnic culture and proposing that language determines worldview. Cultural linguistics explains language identity optimally before the emergence of sociolinguistics. A consensus has been reached that the relationship between language and culture is undisputable: language constitutes and represent culture and serves as a carrier of culture.

With respect to externalization, we find that biological linguistic theorizing corresponds to the fundamental fact and concept -humanness of language. Semiotics in structuralism is important; however, it is groundless to deem phonetic and semantic system as language itself. Ethno-cultural linguistics is consistent with the current national language classification and complements each other. Nevertheless, it blurs the boundary between the language, which is created in ethnic and historical culture, and the one, which emerges from political systems.

Although biological linguistics basically reflects the previous fact, the emerging facts could outdate it. Semiotic linguistics typically deviates from language fact, but it is an important attempt for externalization. Cultural linguistics corresponds to part of facts, but is not compatible with the rest: the former part is the language created in speech communities in a spontaneous way; the latter is the one established by modern countries on an artificial basis.

Biological linguistic theories facilitate our understanding on the revolutionary nature of the development of language technology. Here externalization is represented outside the theories. Semiotic linguistics itself is an attempt for externalization, but has been proven to be a failure, thus helping us understand the social nature of language from an opposite perspective. Cultural linguistics sets the boundary of natural languages, which is similar

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<sup>6</sup> Some doubts arise, holding that language acquisition and use are lack of full independence and uniqueness in terms of biological foundation and thinking mechanism.



to biological linguistics. Spontaneous language possesses automatic cultural identity; therefore, it is essential to distinguish between languages which fall into the category of automatic identity, and which are political identity (lack of automatic identity). The latter is apparently an attempt for externalization. It is thus safe to assume that it is an inevitable phenomenon to establish national speech community; however, it is still precocious to assert that it is a sole developmental trajectory for human languages. In spite of this, political language planning, based upon cultural linguistic theorizing, is another attempt for language externalization.

To summarize, linguistic theories can accurately map the modes of language externalization; with some offering baseline for differentiating internalization and externalization, and others as an attempt for cross-domain practice. To put it differently, some are the summary of current knowledge; others are the deduction for transcending reality.

Aside from the theoretical challenges and implications, language externalization also presents opportunities for applied linguistics. By deepening our understanding of biological, semiotic and ethnic nature of languages, we can try something new in its application.

If the drastic mutation in human genes constitutes the underlying basis for the emergence and development of human language, then science and technology in the 21<sup>st</sup> century offers the opportunity for the development of human languages beyond its biological nature.

If the emergence of modern linguistics 100 years ago signifies the start of language development beyond society, then the current interdisciplinary trend of linguistics seems to bear preliminary fruit.

If the function of language identity emerges with modernization, then the advent of post-modernization propelled by globalization could weaken or even terminate this role. Together with the trend is the gradual change of issues in language planning: despite its politics-oriented start, language planning will focus on economy in the future.

Looking forward, we can see that language diversity can develop externally, and previous diversities may be substituted for new ones. As biological, social and cultural entities, human languages may undergo changes to embrace a new nature under the influence of various external factors, or their boundaries may be erased so that new focuses could come into attention.

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