Emerging Phonology Under Language Contact: The Case of Sino-Russian Idiolects

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Abstract

The main aim of this study is to examine what kind of phonological system emerges because of language contact wherein adult speakers of L1 (Chinese) attempt to speak L2 (Russian) without any previous instruction in L2. The main findings of this study are as follows: a) The speakers of L1 largely adopt the phonetic inventory and phonotactics of L2 and b) the only underlying (distinctive) features in the emerging phonological system are those of place of articulation while voicing plays no distinctive role in the emerging phonological system of Chinese speakers. Moreover, the speakers of L1 faithfully replicate the stress system of L2, even though L1 (Chinese) is a tonal language and L2, Russian, is a stress language. The most important finding of this study is that speakers of L1 discern the entity 'word' in L2. The emerging phonological system is geared towards assuring the identifiability of words in L2 rather than towards consistency of phonological rules.

Keywords

emergence of phonological system – articulatory features – phonotactics

1 The Aim and the Scope of the Present Work

The main research question of the project of which this study is a part is what kind of language is created by immigrants, who are forced by circumstances to communicate in a language other than their own, without any formal or informal education in that language. The immigrants use the vocabulary of the language of the new community. But do they pick up the language structure, i.e., the grammar of the language of the new community? Is the new language like the native language of the immigrants? And the most interesting question: Does the new language contain characteristics that are not present in either the native language of the immigrants or the native language of the new community? If the new language of the immigrants contains such unaccounted elements, where do they come from? Are they products of creative solution to certain communication problems? Are there other reasons for the existence of forms and meanings that do not occur in either the native language of the immigrants or the language of the new community?

1.1 *The Object of the Study*

The present study examines the questions listed above with respect to ‘Sino-Russian idiolects’, a term we adopted after Bernard Comrie’s suggestion (p.c.). Sino-Russian idiolects are spoken by native Chinese speakers who make their living in the Far-East Region of Russia and must communicate with speakers of Russian without having had any formal or informal education in Russian. Narrowing the scope of the study to speakers without such education is particularly important. Educational systems aim to instill the grammatical rules of the new language, and students strive, some more successfully than others, to apply those rules. The most important difference between the use of the language by schooled vs. non-schooled speakers is that acquiring the new language is an aim for the first group, while acquisition of the new language is not the aim for the second group. The aim for the second group is to earn a living in a new place, in which people happen to speak a different language.

1.2 *The Novelty of the Study*

The novel nature of our study, and a crucial sociolinguistic fact, is that the language in which the immigrants communicate with the hosts is not used in

communication among the immigrants. Moreover, hosts do not use this language when communicating with immigrants. The language that we are studying is thus not a type of pidgin, as reported in many parts of the world. Instead this project studies idiolects, whereby each adult speaker creates a language to communicate with hosts. These idiolects are subject to change when confronted with the language of the hosts but not when confronted with the idiolects of other speakers. One might conceive of those idiolects as pre-pidgins in that, given a longer period and possibly a larger number of immigrants, these idiolects might merge into a single pidgin. But so far, they have not, and there is no synchronic indication of the merger of idiolects into a pidgin.

Bickerton (2016) characterizes pidgins, as opposed to creoles, as varieties of language that have no structure. Even though the idiolects that we study are not pidgins, this raises questions about the languages under study. The notion of 'structure' first needs to be defined. If the lack of structure means that anything goes, i.e., every form is allowed, then this characterization is not true with respect to phonological components. The inputs into the phonological component of the Sino-Russian idiolects include: the phonological component of Chinese; the phonological component of Russian; and potential universals of language design, as argued for in Kiparsky (2006) in his discussion of Blevins (2006). By studying the emerging phonology, we may not only assess the roles of any of these three inputs but we may also discover whether there are any other factors that affect the form of the phonological component. Most important, our study provides the largest description so far of the phonological components of Sino-Russian idiolects.

The analysis we present here demonstrates that the phonetic system of the idiolects under study consists of a finite number of segments. These segments match some of the features of phonetic segments of Russian, with only occasional matching of segments from Chinese.

The study also demonstrates that we cannot establish the existence of underlying segments with a full range of distinctive features, such as can be established for the underlying segments of Russian or the underlying segments of Chinese. One can nevertheless establish a set of underlying segments whose only distinctive characteristics involve the place of articulation. This set appears to constitute the kernel of the phonological system. Other features, such as manner of articulation, e.g., voiced vs. voiceless and stop vs. continuant or affricate, are subject to considerable variation not only among different speakers but also within the speech of individual speakers.

The emerging phonological system shares many phonotactics characteristics of Russian, including syllable and word structures. It shares relatively few phonotactics constraints with Chinese. The emerging phonological systems

of Sino-Russian idiolects are much more motivated by the functional requirements of communication than by some putative principles of Universal Grammar. Our data point to systems whose fundamental function is to enable the listeners' recognition and identification of lexical items used in communication. The segments deployed in the identification of a given lexical item may differ in features that are distinctive in Russian from speaker to speaker and may even differ in the speech of the same speaker. The phonological systems that emerge point to a hierarchy of features with respect to their adaptation into the new language. The first features that are adapted are places of articulation. This is followed by a distinction between stops and continuants. The value of the feature [voice], plays no role in the systems even though it is a fundamental distinction in Russian. One of the reasons for the low function of the feature [voice] is that it is not a distinctive feature in Chinese.

2 The Data

All data for this study represent natural speech. Hence there are no data resulting from questions of the type 'how do you say X?', where X is supposed to elicit some function, construction, or word in Sino-Russian. As a result, all items analyzed in the present study represent the production in connected speech rather than the words in isolation. The importance of natural speech data is that the speakers do not produce them for the sake of the production of language. There are no prompts of any kind to obtain some specific lexical items, meanings, or constructions. The narratives were obtained by asking speakers to describe some custom, to tell a story, or to share their impressions of life in Russia.

The bulk of the narratives were gathered in Ussurijsk, Primorskij Kraj.¹ In total there were 12 texts gathered from seven speakers. One text was produced by an anonymous speaker and was distributed by him on social media. The narratives are between two and five minutes long and were produced by both men and women between the ages of 32 and 50. Most speakers resided in Russia from 8 to 20 years. We do not have information about the speakers'

1 The narratives were gathered by Karpenko, Gurian and their students at the School of Education, Far Eastern Federal University. In most cases a linguist asked a speaker to tell a story, describe a custom, or share impressions about the life in the area. The text by Anonymous was an audio recording distributed by the speaker over social media. The narratives, along with the audio recording by Anonymous, were subsequently analyzed by the whole team, including Frajzyngier. The narratives were analyzed using (Elan and Praat). Translations are the team's best interpretation of what the speakers said.

educational level in Chinese. Most of the speakers speak a northern variety of Chinese. We refer to their native language as 'Chinese' rather than Mandarin or some other variety. The different amounts of time spent by the speakers in Russia allows us to examine the effect of the duration of language contact on the persistence of phonological features that are different from those of native Russian speakers.²

In our study, words in Russian are referred to as 'targets [of speech production]'; although we are fully aware that the target of the speakers is not to reproduce the word in Russian but rather to convey, in one way or another, the information carried by the Russian word. Recall that our speakers are not students (or former students) of Russian but people who happen to use Russian words for business purposes.

3 State of the Art With Respect to Language Contact

The current literature on language contact is very large. Most studies deal with effects of language contact that have been taking place over hundreds, or even thousands, of years. During such extensive language contact, the speakers of language L1 are exposed to at least two sources of L2: Speakers of L2 and speakers of L1 who communicate in L2. This is a situation in which pidgins emerge. The other situation, the one in which we are interested, is the situation in which the speakers of L1 are exposed to L2 only as it is produced by the native speakers of L2. This is a situation that explicitly involves only two languages in contact and is limited to short-term language contact, where speakers have been exposed to direct language contact experienced by only one generation of speakers. The only other study, apart from other studies of Sino-Russian language contact, whose scope is constrained to this situation is Klein and Perdue (1997) and the studies mentioned in that work.

2 The narratives are referred to by the first names of the speakers who provided the narratives. All names are replaced by pseudonyms. Anonymous – a male speaker. The time spent in Russia unknown, age unknown, education unknown, the area in China where he grew-up, unknown. Judging from his message, most probably a businessman.

Sveta – spent about 18 years in Russia, age 47, factory worker, female, speaker of Putonghua, the standard spoken in Beijing. Nina – spent about 20 years in Russia, age 49, a businesswoman, originally from Northern China.

Lyuda – spent about 20 years in Russia, 44, a businesswoman, originally from Northern China.

Ivan – has been interacting with Russians for about 10 years in Suifenhe, a Chinese town not far from the Russian border, age unknown, male, possibly from Northern China. He probably spent only a few years in Russia, if any.

Lida – spent about 10 years in Ussurijsk, age 38, female, a merchant.

Klein and Perdue (1997), the classic work about the language of immigrants, argues that the language of immigrants in four European countries provides some evidence for the existence of a 'basic variety' language, which would display putative characteristics of what Noam Chomsky called an 'internal language', i.e., structural principles that humans genetically transmit from one generation to another. Although Klein and Perdue's study, a product of many years of research, engendered other studies Hendricks (2011), the basic question about the emergence of structures that are not represented in the native language of hosts or the native language of immigrants remains open. The resolution of this question will shed light on one of the fundamental problems in linguistics: how grammatical systems emerge in the speech of individual speakers (see also Siemund, 2004).

The sociological situation of the Sino-Russian idiolects has the following important characteristics, some of which make those idiolects different from pidgins:

Type of language contact with the local language: Immediate immersion without any educational preparation.

Duration of the life of the language – never exceeding the first generation of speaker, often no more than 20 years.

Language interaction – only with speakers of Russian (explicitly not with speakers of other Sino-Russian idiolects).

No language transmission from the older to the younger generation.

And finally, and most important:

No imposition of the grammatical structure of Russian on the language of the first-generation speakers. At best one can talk about the reduction of functions coded in Chinese, but this is not the effect of the grammatical structure of Russian but rather of the paucity of formal means available to Sino-Russian speakers.

4 State of the Art With Respect to Russian Spoken by Chinese Speakers in the Russian Far East

Studies of the language of Chinese immigrants in Russia are rather numerous. As reported in Oglezneva (2007b), the first linguistic descriptions of the Russian-Chinese pidgin, as the language is commonly referred to in the Russian literature, date from the end of the 19th century, in the works of Aleksandrov (1884) and Schuchardt's (1884) comments on Aleksandrov (1884). For the history of

subsequent scholarship, see Oglezneva (2007a). Contemporary works include Shprintsyn (1968), based on fieldwork from the 1930s; Perekhval'skaya (2003a and b; 2004; 2006; 2008; 2014); Oglezneva (2007a and b; 2009; 2010); Fedorova (2011); Shapiro (2012); and, most recently, Zhdanova (2016). According to Oglezneva (2007b), Chinese merchants at the end of the 19th century were required to learn Russian and pass an exam before they could trade with their Russian counterparts. Oglezneva states that at one time this language was spoken by about one million people. We have no evidence that this language was ever used among Chinese speakers. Moreover, travelers to the area reported that the language was used only by Chinese merchants when interacting with Russians, while their Russian counterparts spoke standard Russian. Hence, the use of the 'Russian-Chinese Pidgin' was different from the use of pidgins in multilingual societies, where speakers use the pidgin among themselves and not just when interacting with speakers of the politically or economically dominant language. This Russian-Chinese pidgin has apparently completely disappeared because of changed political situations.

Our study points to a rather nuanced picture with very different language usage, where the speech of a given speaker not only differs from that of other speakers but also exhibits a large degree of variation within the speech of the individual speaker. An important, and rather unexpected, overall conclusion is that, for the idiolects we studied, one cannot talk about the existence of a phonological system, i.e., a finite number of underlying segments and a finite number of phonological rules responsible for the realization of underlying segments.

With respect to phonology, previous scholarship has noted constraints on the word-final consonantal ending (as early as Schuchardt, 1884; Oglezneva, 2007b) and the vacillation in assigning voicing and some *r/l* alternations (Zhdanova, 2016: 63–65; Shapiro, 2012).

5 Stress Assignment

According to Zhdanova (2016: 63–65), Perekhval'skaya (2013: 334) asserts that speakers of Chinese tend to treat every syllable in Russian words as a tone-bearing unit and that consequently every syllable is treated as stressed. We did not observe this tendency in our data. In our data, the Sino-Russian speakers usually reproduce the Russian stress assignments for individual words. This is rather unexpected given the fact that the stress in Russian can fall on different syllables in the word.

In the present study, all Sino-Russian words have their stress marked by “’” placed before the stressed syllable. In the great majority of Sino-Russian words the stress occurs in the same place in which it occurs in the Russian word. The evidence that stress assignment in Sino-Russian is identical with stress assignment in Russian is provided by every Sino-Russian word in our data. Here is a selection of examples in which the stress assignment in a Sino-Russian dialect is identical to that in Russian. The stress in Russian words is indicated by acute accent on the vowel, as is done in Russian orthography when it is possible to have different stress assignments for the same segmental structure. All monosyllabic words in Sino-Russian are stressed, as they are in Russian. We present here examples with stress assignments on different syllables.

(1)	Boris	Russian
	<i>’drasv’id’e</i>	<i>zdrástvuj’t’i</i>
	<i>si’vɔn’a</i>	<i>s’ivódn’e</i>
	<i>k’i’daj</i>	<i>k’itáj</i>
	<i>ban’i’maju</i>	<i>pən’imáju</i>
	<i>dru’zja</i>	<i>druz’já</i>

The stress assignment follows the Russian pattern even if the vowels have been considerably reduced.

(2)	Sveta	Russian
	<i>ʃtʃ’i’daju</i>	<i>ɕ:ɪ’tájʊ</i> or <i>ʃtʃ’r’tájʊ</i>
	‘count:1SG:PRES’	
(3)	Anonymous	Russian
	<i>’kuratʃ’gah</i>	<i>kúrocka</i>
	‘little hen’	
(4)	Boris	Russian
	<i>gə’dɔriə</i>	<i>katóryj</i>
	‘which’	
(5)	Ivan	Russian
	<i>pa’tɔmə</i>	<i>patóm</i>
	<i>’mnɔgə</i>	<i>mnógə</i>
	‘then’	
	‘many’	
(6)	Lida	Russian
	<i>lalə’mənə</i>	<i>narmál’nə</i>
	<i>’mala</i>	<i>mála</i>
	<i>ta’gɔje</i>	<i>takój</i>
	<i>la’bɔdi</i>	<i>rabóta</i>
	‘normal, o.k.’	
	‘a few’	
	‘such’	
	‘work’	

The stress assignment follows the Russian pattern even if the Sino-Russian word has a syllable structure different from that of the Russian target.

- (7)
Lida		Russian
<i>ˈgɒlədə</i>	‘town’	<i>górət</i>

When the Russian construction consists of a clitic and a following word, the stress falls on the word, not on the clitic. The same structure is reproduced in the Sino-Russian idiolects.

- (8)
Anonymous		Russian
<i>iˈdagə</i>	‘and so’	<i>iták</i>
- (9)
Lida		
<i>pə</i>	<i>ˈstə</i>	<i>luˈbləj</i>
PREP:ON	hundred	ruble:PL:GEN
‘It costs 100 rubles.’		

Out of some 1000 lexical items in our Sino-Russian data, only the following had a stress assignment distinct from that of their Russian sources.

- (10)
Lyuda			
<i>ˈpírə</i>	target	<i>bíˈla</i>	‘be:SG:FEM’

Note, however, that the form *ˈpírə* may actually be *ˈbíːl* with the final vowel *ə* as epenthetic, in which case it would have the stress assigned as it is in Russian.

- (11)
Sveta			
<i>méˈriitʃi</i>	target	<i>ˈmˈerˈitˈ</i>	‘measure’
- (12)
Lida			
<i>ˈlublʲi</i>	target	<i>ruˈblʲi</i>	‘ruble:PL’

The stress would be in the ‘wrong’ place only if the intended target is plural. Given the fact that number is not systematically marked in Sino-Russian, the form may represent the stress system of the singular *rublʲ*. In a few cases, the Sino-Russian words have two stresses, while their Russian targets have only one stress.

- (13)
Lida			
<i>ˈwɒsˈimˈnats</i>	target	<i>vəsˈiˈmnafʃ(ː)ətˈ</i>	‘eighteen’
- (14)
Sveta			
<i>ˈvɒtˈka</i>	target	<i>ˈvotkə</i>	‘vodka’
<i>praˈtukˈti</i>	target	<i>prɐˈduktə</i>	‘produce’

The existence of less than a dozen stress assignments in Sino-Russian that are distinct from the stress assignments in the Russian target forms does not change the fact that the stress assignment in Sino-Russian preserves, to a large extent, the stress assignment of Russian words. The faithful retention of the Russian stress on individual lexical items is even more interesting when one considers the numerous changes in the realization of segmental morphemes. Most likely the reason for this retention is that stress is the main marker through which the individual words are perceived. Words, in turn, are the main means of conveying meaning in Sino-Russian idiolects. The idiolects have no inflectional or derivational systems, and the linear order plays only a marginal role.

6 Segmental Structure, Constraints and Rules of Chinese

Information about the phonology of Chinese is mainly drawn from San Duanmu (2007). Chinese does not have a distinction between voiced and voiceless stops or between voiced and voiceless affricates. It does distinguish between aspirated and unaspirated stops and affricates. Chinese has a single series of continuants, again with no voice contrast. With respect to place of articulation, Chinese has a series of retroflex affricates and continuants (San Duanmu, 2007: 24).

TABLE 1 Chinese consonants

	Labial	Dental	Retroflex	Velar
Stop	p, ph	t, th		k, kh
Affricate		ts, tsh	tʂ, tʂh	
Fricative	f	s	ʂ, ʐ	x
Nasal	m	n		(ŋ)
Liquid		l		

Chinese has a tonal system with four tones. Li and Thompson (1981) list 23 phonetic vowels. With respect to the effects of language contact it is the phonemic system rather than the phonetic system of Chinese that matters, because we assume this is what the speakers of Chinese bring into the language contact situation. San Duanmu (2007: 35) gives the following list of vocalic phonemes.

TABLE 2 Chinese vocalic phonemes

high	i	y	u
mid		ə	
low	a		

The phonotactics of Chinese do not allow consonant clusters in word-initial position. Consonant clusters are allowed within compound words. No syllable in Chinese, and consequently no word, can end in a consonant other than the velar or dental nasal (Li and Thompson, 1981; Třísková, 2011; San Duanmu, 2017).

7 Segmental Structure, Constraints and Rules of Russian

The segmental structure of Russian is represented by the following table, modified from Table 2.5 in Timberlake (2004: 53). The segmental system of Russian includes a series of voiced and voiceless stops, affricates, and continuants in the labial, dental, palatal, and velar regions. There is no velar voiced continuant. We represent palatalization by C', where C represents a consonant.

TABLE 3 Russian consonant phones

	Bilabial	Labio-dental	Dental	(alveo-)palatal	Velar
voiceless stop	p p'		t t'		k k'
voiced stop	b b'		d d'		g g'
voiceless affricate			c'	c	
voiced affricate			dz	dʒ	
voiceless fricative		f f'	s s'	ʃ	x x'
voiced fricative		v v'	z z'	ʒ	
glide					
nasal stop	m m'		n n'	j	
lateral			l l'		
trill			r r'		

There is no tonal system in Russian, but there is a stress system. The position of stress is lexically determined. The vowel system of Russian includes

TABLE 4 Russian vowel system

i	ɨ	u
e		o a

(TIMBERLAKE, 2004: 31)

six stressed vowels. The contrast between underlying vowels is neutralized in unstressed positions, where all vowels undergo various degrees of reduction (see Timberlake, 2004).

The phonological status of the high central vowel is somewhat controversial in that some would analyze it as an allophone of the high front vowel *i*. As will be demonstrated, the phonemic status of the high central vowel, or for that matter of any segment, is not particularly important in the situation of language contact under study. The distinction between the stressed vowels of Russian is neutralized in unstressed position. One product of neutralization is schwa, and the other product is the high front vowel *i*. The speakers of Chinese are thus exposed to the stressed and unstressed vowels.

There is no voice contrast in the phonetic structure in word-final position, but there is voice contrast in word-final position in the underlying structures. Two- and three-consonant clusters are allowed in word-initial, word-medial, and word-final position.

8 The Sino-Russian Segmental Inventory

The speakers of Sino-Russian idiolects must reconcile the system of phonemic distinctions and constraints in Chinese with the system of distinctions and constraints in Russian. This reconciliation may involve the discovery of the segmental structure of Russian, possibly including its distinctive contrasts, its constraints, and the rules for overcoming the constraints. The speakers of Sino-Russian idiolects thus have the option of either imposing the segmental distinctions and constraints of Chinese on their production of Russian words and phrases or accepting the distinctions and constraints of Russian. The following table represents the phonetic consonantal segments of Sino-Russian culled from the recordings we obtained. As can be seen, this table is almost identical with the consonantal system of standard Russian, with just minor additions in the retroflex area and no deletions.

Chinese has many more phonotactics constraints than Russian does with respect to syllable-initial and syllable-final consonant clusters. No clusters of

TABLE 5 Sino-Russian consonant phonetic segments

	Bilabial	Labio-dental	Dental	Ret-roflex	(alveo-)palatal	Velar
voiceless stop	p p'		t t'			k k'
voiced stop	b b'		d d'			g g'
voiceless affricate			c'	tʂh*	c	
voiced affricate			dz		dʒ	
voiceless fricative		f f'	s s'		ʃ	x x'
voiced fricative		v v'	z z'		ʒ	
glide						
nasal stop	m m'		n n'		j	
lateral			l l'			
trill			r r'			
approximant				ɭ		

*SOME SINO-RUSSIAN SPEAKERS USE THE RETROFLEX *tʂh* FOR THE TARGET PALATALIZED *d'*.

obstruents are allowed in Chinese in syllable-initial or syllable-final position, while clusters of obstruents are allowed in syllable-initial, word-medial and syllable-final position in Russian. In Chinese only the velar and dental nasal are allowed in syllabic coda, hence in word-final position. All consonants, except for phonetically voiced segments, can occur in word-final position in Russian. The Sino-Russian idiolects display some preferences as to which phonological structures of Russian are incorporated without modification and which are modified. There appears to exist a hierarchy of more readily and less readily accepted structures. It is an open question whether the implications of this hierarchy are specific to the contact between these two languages or have more general validity.

In the present work, we study language use and, based on our findings, determine what kind of processes are involved when speakers use foreign language resources without any explicit instruction and with input limited to the speech of native speakers of the language. Anticipating the results of our investigation, we propose that instead of acquiring the phonological system of Russian, the speakers of Chinese acquire only the sound correlations necessary for the native speakers of Russian to recognize the lexical meanings being conveyed. The realization of segments with respect to voicing, and in some cases even with respect to place of articulation, is not subject to phonological rules. Alternations are numerous and unpredictable. The influence of Chinese phonotactics constraints on the production of Sino-Russian idiolects is negligible.

The existence of a finite set of underlying phonemic distinctions represents an interesting hierarchy between the distinctions most often observed and the distinctions less often observed.

9 The Category ‘Word’

It is a non-trivial fact, from the point of view of language structure, that one of the products of parsing the stream of speech used by the Chinese speakers is the category ‘word’. The universally valid definition of the category ‘word’ is still elusive. In Chinese, it is particularly difficult to isolate. Chao (1968: 136–143) discusses difficulties in defining words in Chinese and prefers to use the term ‘morpheme’. Sun Chaofen (2006) states: “[T]he notion of ‘word’, known as *cí* in Chinese, is neither a particularly intuitive concept nor easily defined” (2006: 46).

We can only guess what types of clues the speakers of Chinese use in parsing the Russian stream of speech, but the result is that the entities in the Sino-Russian stream of speech never represent more than one word in Russian, i.e., they never cut across word boundaries. We did observe a few cases in which Russian prepositions followed by pronouns were interpreted as one word in Sino-Russian idiolects. These were cases where the preposition plus pronoun represent one phonological word in Russian as well.

- (15) Sveta
 kn’i’mu
 /*kn’i’mu*/
 ‘to him’
- (16) Lyuda
 u’mn’a
 /*u m’i’n’a*/
 ‘I have’ (lit. ‘at me’)

These entities represent word units in the Sino-Russian idiolects, as evidenced by the prosodic breaks before and after the entities. The strong representation of the category ‘word’ in Sino-Russian idiolects is not trivial, given that linguists have great difficulties in finding an adequate universal definition of the category ‘word’. In Russian, language-specific criteria in defining the category word involve the presence of at least one stressed vowel and pauses. In Chinese, the criteria involve the phonological structure of entities and prosodic means, but the notion of ‘word’ in Chinese is not as neatly defined as in Russian. And yet, the entities produced by the speakers of Sino-Russian idiolects correspond to what Russian speakers (and linguists) characterize as words rather

than as some other units. The semantic content of these units in Sino-Russian idiolects does not overlap with the semantic content of their corresponding entities in Russian. A Russian word usually contains a large amount of grammatical information coded by inflectional markers. This information, which varies for verbs, nouns and other lexical categories, is almost completely absent in the Sino-Russian words. The nature of the semantic information encoded in the Sino-Russian words will be described in forthcoming studies. For the time being we want to make it explicit that the entities from which we draw data for phonological analysis are words occurring in natural discourse, never in isolation, and that these words most often do not carry the Russian morphological markers. Even if there is a phonological trace of a morphological marker, this trace does not appear to play a morphological role. As stated in Section 2 above, we refer to the Russian counterparts as targets. It should be kept in mind that the semantic content of the target is of broad categoriality. For verbs, for example, the semantic content may be limited to the meaning of the verb and the action involved, without the inflectional characteristics carried by the Russian equivalents. Similarly, the semantic content of nouns may be limited to the category noun and the entity involved, as opposed to the Russian forms with full inflectional characteristics. As an example, the target of the Sino-Russian form [bal'fɔj] is the adjective meaning 'big', without the gender and number distinctions that are marked in Russian. Some Russian targets are closer to spoken Russian than to standard literary Russian. For example, the verb *nraivitsa* 'please' has two spoken variants: *nraivitsa* and *nraitisa* which are not always used in standard Russian. Speakers of Sino-Russian idiolects have access to the spoken language and some speakers produce all three variants in their speech.

Our data indicate an interesting distinction between the expressions that the Sino-Russian speakers learned as one entity and reproduce as such, and expressions consisting of several words that Sino-Russian speakers generate themselves. For the phrases that have been learned as one entity, the form of the expression often reproduces the Russian grammatical coding and often preserves Russian phonological contrasts. An example of such an expression is the greeting [fʂ'em pri'vɛd] target [fʂ'em pri'vɛt] 'greeting to everybody' (lit. everybody:DAT greeting). For these expressions, we gloss grammatical markers even though these markers do not necessarily constitute part of the grammatical knowledge of Sino-Russian speakers. For expressions that are generated by the speakers themselves, the grammatical marking of Russian is largely non-existent, and the speakers impose their own interpretations of the form of the Russian words. Since these expressions represent most speech production, we leave them unmarked.

The main question, namely how it is that speakers of Chinese with no education in Russian have apparently, no difficulty in isolating the category 'word'

in Russian, may direct one to search for some yet unexplained properties of language as such (cf. the ‘Basic Variety’ in Klein and Perdue, 1997). But the explanation may lie elsewhere. Huang, Li, and Li (2009: 3) rely on syntactic properties to define the category word in Chinese. They take the word to be a separate entity in syntax (p. 15). Our explanation partially follows the Huang, Li, and Li approach, in that the entity ‘word’ in Sino-Russian is, in our approach, the chief way to convey meaning.

10 **How do the Sino-Russian Speakers Cope with Constraints
Non-Existing in Chinese?**

10.1 *Organization of Presentation*

We first discuss the issues involved in voicing, then the issues involved in syllable and word structure, and then the remaining issues in phonotactics. Recall that in Russian all obstruents may be voiced or voiceless in all positions in the underlying structure, and the voicing contrast is preserved in word-initial and word-medial position but neutralized in word-final position. Voice is not a contrastive characteristic of obstruents in Chinese. Chinese exploits the distinction between aspirated and unaspirated obstruents. Aspiration plays no role in the Russian phonological system.

10.2 *Voice Feature in Stops*

The assignment of voice to a stop depends to a certain degree on the place of articulation of the stop. Voiceless labial stops in target words are more likely to be preserved, and voiced labial stops in target words are more likely to be devoiced, in Sino-Russian idiolects (here and in the rest of the text, even if examples involve individual words, these words have been culled from running natural texts. Their Russian equivalents are labeled ‘targets’). The left column represents a Sino-Russian idiolect, followed by approximate meaning. The right column represents the phonetic transcription of the target word either in the standard or spoken Russian.

(17)	Sveta			
	<i>rʼiʼpʼənək</i>	‘child’	target	<i>rʼiʼbʼonək</i>
	<i>ʼpapʃka</i>	‘grandma’	target	<i>ʼbabuʃkə</i>
(18)	Lyuda			
	<i>laʼpəti</i>	‘work’	target	<i>raʼbotəla</i>
	<i>ʼpirə</i>	‘be:3f:past’	target	<i>biʼla</i>

- (19) Anonymous
 p'in'z'ina 'gasoline' target *b'm'z'in*

The voiced dental or dental stops can be devoiced, and the target voiceless stops may be voiced in the same position, including intervocalic position. In addition, the value of the feature voice in the target word can be preserved in the Sino-Russian idiolects. Hence, the following changes can all apply in the speech of the same speaker.

Russian	Sino-Russian
C →	[+voice]/V__V
[-voice]	
C →	[-voice]/V__V
[+voice]	

The value of the feature voice can also be preserved.

C →	[α voice]/V__V
[α voice]	

Devoicing of the initial dental stop.

- (20) Lyuda
 tvats 'twenty' target 'dvatsət'

Retention of the intervocalic voiced dental stop.

- (21) Lyuda
 prə'dara 'sell' target *preda'la*

Voicing of the intervocalic voiceless stop.

- (22) Lyuda
 para'd'intsə 'towel' target *pəla't'entsə*

Devoicing of the intervocalic dental stop.

- (23) Lyuda
 at'i'jaara 'blanket' target *ad'r'jalə*

- (24) Sveta
 'nata 'it is necessary' target 'nadə
 'tv'era 'door' target dv'er'

- (25) Nina
 'let'i 'people' target 'lud'ɪ

The target palatalized dental stop can become retroflex in Sino-Russian idiolects.

- (26) Nina
kava'letʃʃ 'say' target *gəva'r'it'*
- (27) Sveta
kav'ritʃʃ 'say' target *gəva'r'it'*
tapa'flaʃʃe 'add' target *dəba'vlat'*

It appears that target dental voiceless stops are more likely to be voiced in the Sino-Russian idiolects than labial stops. Thus, *t* in intervocalic position is voiced as in the following example, which has two target voiceless consonants, *k* and *t*, and yet only *t* is voiced in the Sino-Russian speech.

Stop voicing rule.

- (28) Sveta
pə k'i'dask'i 'in Chinese' target *pə k'itask'i*

Stop devoicing rule.

- (29) Sveta
pə t'i'la 'on business:PL' target *pə d'i'lam*
t'en'g'i 'money' target *d'en'g'i*
p'l'uta 'dishes' target *bl'udə*

The evidence that the phonological system ruling the realization of various segments has little role in Sino-Russian idiolects is provided by examples where the speakers voice the target voiceless dental stop *t* and preserve the target voiced labial stop *b*. The phenomenon was observed in the speech of the same speaker, who devoiced the word-initial voiced dental and labial stops. We may see here a tendency by this speaker to voice intervocalic stops and preserve the voicing of intervocalic stops in the target words.

- (30) Sveta
ra'bɔdaju 'work:1S-G:PRES' target *ra'botaju*
ku'da 'where' target *ku'da*
- (31) Nina
va'da 'water' target *va'da*

The palatalized voiced stops become voiced or voiceless affricates even in intervocalic position.

- (32) Nina
l'u'z'e and *l'u'z'ej* 'people':GEN target *l'u'd'ej*

It may well be that the change from [+stop] to [-stop] is associated with the feature palatal of the stop as attested in the speech of another speaker.

- (33) Sveta
t'i'v'er 'now' target *t'i'p'er*

The palatalized voiced stop, when preceded by a voiced continuant, becomes a voiced palatalized continuant.

- (34) Nina
zz'es' 'here' target *z'd'es'*

Some speakers preserve the voicing of a dental stop when it is the second segment in a cluster of consonants. This phenomenon is most likely motivated by the Russian constraint that in a cluster of consonants, the consonants must have the same value for the feature voice. In the following examples, the bolded segments have the same values for voicing in the Sino-Russian idiolect from which they were taken as well as in Russian.

- (35) Nina
*'vɔ**zdu*** 'air' target *'voz**dux***

- (36) Anonymous
***zda'**ɣv'je* and 'health:GEN' target ***zda'**rov'ja*
***zda'**ɣwja*

The voiceless dental stop is voiced by some speakers even in word-initial position, which indicates that the speakers know about the voicing feature but do not know which lexical items have a voiced segment and which have a voiceless segment.

- (37) Nina
dɔs 'also' target *'tozə*

Further support for the hypothesis of primacy of the place of articulation over the feature voice is provided by the fact that some speakers not only preserve the feature voice in the target segments but also voice the target voiceless dental stops.

Preservation of the feature voice.

- (38) Anonymous
'd'ɔzɔva 'cheap' target *'d'ɔfivə*

Voicing of the target voiceless dental stops.

- (39) Anonymous
i'dagə 'so' target *r'tak*

The same speaker not only voices the target voiceless dental stops in intervocalic position but also does it in word-final, clause-final position. Thus, the target noun *pr'v'et* 'greeting', phonetically [pr'v'et] is realized by Anonymous as [pr'v'ed]. This is contrary to what one would expect in word-final position (Kiparsky 2006). Note that the same speaker preserves the voiceless target initial labial stop *p* and the target voiced intervocalic stops *b*, *g* and *d*. The same speaker voices target voiceless affricates, as in '*luzi* 'better' target '*lutʃʃij*', but does not voice the target voiceless dental stop in *p'i'tuh* or *p'i'tuha* 'rooster', target *p'itux*.

Note that the same speaker who preserves the voicing of the target dental stop and voices the target voiceless dental stops also preserves the target velar voiceless stops and devoices the target voiced labial stops.

Preservation.

- (40) Anonymous
paku'pat'i 'buy' target *paku'pat'*

Devoicing of labial stops.

- (41) Anonymous
p'in'z'ina 'gasoline' target *b'm'z'in*

Although the dental stops show a slight tendency to be voiced, the data indicate that the same speaker can preserve the target voiceless dental stop, change the intervocalic voiceless stop to a voiced stop, change the word-initial voiceless stop to a voiced stop, and preserve the target voiced dental stop in the cluster, all in the same utterance. Here is an illustration of those possibilities, drawn from just one utterance by Nina.

Preservation of voiceless consonants.

- (42) Nina
pa'tɔɔm 'then' target *pa'tom*
'eta 'DEM' target *'eta*
l'et 'years:GEN' target *l'et*
'skɔka 'how many' target *'skoka*

(In colloquial speech, instead of the standard Russian ['skol'kə], Russian speakers often produce the form ['skoka], the form that we use to represent the target word 'how many'.)

Voicing of the target voiceless stop.

- (43) Nina
dɔs 'also' target *'toʒə*

The optionality of voicing of stops is further illustrated by the target noun *'babuška*, which is once pronounced as *'papška* and another time as *'pabiška* in the same utterance. Intervocalic position favors the preservation of voicing but does not have to, as evidenced by the target word *t'ɪ'b'a* '2SG.ACC', realized as *t'ɪ'p'a* by the same speaker in the same utterance.

10.3 Voice Feature in Continuants

Target voiced dental continuants most often preserve their voicing in the Sino-Russian idiolects. The preservation of voicing applies to both palatalized and non-palatalized segments.

(44)	Anonymous			
	<i>dəlu'z'ja</i> and <i>dru'z'ja</i>	'friends'	target	<i>dru'z'ja</i>
	<i>tɔʒə</i>	'also'		<i>tɔʒə</i>

(45)	Nina			
	<i>ɔ'ʒɛ</i>	'already'	target	<i>u'ʒɛ</i>

Note that the same speaker produces a flap *r* instead of the voiced palatal affricate before a dental nasal.

(46)	Nina			
	<i>'mɔrna</i>	'can'	target	<i>'mɔʒnə</i>
(47)	Sveta			
	<i>ʒɪ'v'ɔtsa</i>	'live'	target	<i>ʒɪ'v'ɔtsa</i> 'live:REFL'
	<i>z'd'es</i>	'here'	target	<i>z'd'es'</i>

(48)	Ivan			
	<i>'pl'aʒi</i>	'beach'	target	<i>'pl'aʒi</i>

Some speakers devoice the target voiced continuants in word final position.

(49)	Nina			
	<i>dɔs</i>	'also'	target	<i>tɔʒə</i>

Some speakers devoice voiced continuants in the target words even when the voiced continuant is followed by another voiced continuant, with the result that the consonant cluster has different values for the feature [voice]. Thus, the target word [z] is devoiced and becomes [s], but the following [v] is not devoiced.

- (50) Sveta
 'svat'e 'call' target *zvat'*
 'rasnəj, 'rasnije 'different' target 'raznije
 and 'rasnəa

Hence, the speakers of Sino-Russian not only devolve a target consonant, which is not particularly unexpected, but also violate the Russian constraint of having the same voicing value for a cluster of obstruents.

10.4 Affrication

Some speakers affricate the voiced dental continuants and make them voiceless.

- (51) Lyuda
 ətsa'vutə 'call, name' target za'vut
 'tsamifʲt 'married (about target 'zamuʒim
 woman)'

The result of the affrication may be a consonant cluster with different values for the feature voice.

- (52) Lyuda
 'ts'd'es'i 'here' target z'd'es'

The labial voiced continuant *v* of the target is sometimes preserved between sonorants and in word-initial position.

- (53) Sveta
 kav'r'i 'say' target gəva'r'it 'he/she
 says'
- (54) Anonymous
 'kl'ova 'cool' target 'kl'ovə
 'd'ʒova 'cheap' target 'd'ʒivə
- (55) Sveta
 vab(ə)'fʲfe and vav'fʲfe 'at all' target vaap'fʲfe (standard),
 vap'fʲfe and
 va'fʲfe (colloquial)

The palatalized voiced continuant *v'* is sometimes realized as a labial palatal glide.

(56)	Anonymous			
	<i>ʹobuwe</i>	‘footwear’	target	<i>ʹobuvʹ</i>
	<i>zdaʹɣɔwja</i>	‘health:GEN’	target	<i>zdaʹrovʹja</i>

10.5 *Conclusions About Voicing*

The Sino-Russian speakers’ realization of the voiced-voiceless distinction indicates that the speakers perceive that there is a distinction in Russian, but they do not know how exactly this distinction operates. Moreover, the reaction to the voicing distinction is different for stops and continuants. The data indicate that, with respect to the voicing of stops, there exists a hierarchy whereby the target labial voiced consonant stops are devoiced more often than the target dental voiced stops. As expected, the intervocalic position favors preservation of target consonant voicing more often than the word-initial position. We thus have two contradicting processes because of coping with the Russian voiced-voiceless distinction with respect to stops: The voicing of target voiceless stops and the devoicing of target voiced stops. In addition, we see the preservation of both voiceless and voiced stops. The co-existence of three processes, two of which contradict each other, indicates that speakers of Sino-Russian idiolects do perceive that there is a distinction in Russian between the voiceless and voiced stops, but they do not know which segment is inherently voiced and which segment is inherently voiceless. The voicing distinction between continuants is preserved more often than the voicing distinction among the stops.

11 *Phonotactics*

Freeman, Blumenthal, and Marian (2016) claim that speakers of L2 transfer the phonotactics of L1 into the new language. For our case study the issue is particularly important, as the phonotactics of Russian are drastically different from those of Chinese. Chinese has no consonant clusters in word-initial and word-final position; Russian has them in all positions. Chinese allows only two nasal consonants in word-final position; Russian allows all consonants in word-final position. Moreover, Russian requires the same values for the feature voice in clusters of obstruents, a constraint that we have seen is violated in Sino-Russian. The discussion of phonotactics is limited to issues concerning consonants. We start with word-final position, then discuss word-initial position, and then word-medial position.

11.1 *Consonants in Word-Final Position*

Recall that in Chinese no word can end in a consonant other than a velar and dental nasal. In Russian, all consonants can occur in word-final position. Moreover, two and even three consonant clusters can occur in word-final position.

Speakers of Sino-Russian idiolects deploy three strategies when confronted with targets containing a final consonant. One strategy is the replication of the final consonant; another is the deletion of the final consonant; and the third one is vowel epenthesis, as already noted by Schuchardt (1884). All three strategies can be deployed in phrase-internal and in phrase-final position. Moreover, all three strategies can be deployed by the same speaker. There is, however, a difference in frequency with respect to which consonants are more often deleted, which consonants are more often replicated, and which consonants are followed by an epenthetic vowel.

11.2 *Replication of the Final Consonant*

All Russian word-final consonants, but not consonant clusters, can be replicated in the Sino-Russian idiolects. Whether the target word that ends in a consonant receives an epenthetic vowel depends to a certain degree on the type of the consonant. Dental and alveo-palatal stops, can be preserved.

(57) Sveta
 pasra'fl'aat' 'congratulate' target *pəzdra'vl'at'*

(58) Nina
 ʒit' 'live' target *ʒit'*

When the target word ends in the palatal glide *j*, this ending can be replicated or followed by an epenthetic vowel [e] sometimes by the same speaker of Sino-Russian idiolects.

(59) Sveta
 at'krɔj 'open:IMP' target *at'kroj*

(60) Anonymous
 k'i'te 'China, Chinese' target *k'i'taj*
 bal'ʃɔj 'big' (in target *bal'ʃɔj*
 clause-final
 position)

(61) Nina
 da'vaj 'let' target *da'vaj*

11.3 *Addition of the Epenthetic Vowel*

The nature of epenthetic vowels after the last consonant of the target depends on the consonant to which the epenthetic vowel is added. If the word ends in a palatal stop or the palatal glide and the epenthetic vowel is added (it does not have to be added, as shown above and below), the epenthetic vowel is – [i] or [e].

(62)	Sveta			
	<i>stu'tfat'e</i>	'knock'	target	<i>stu'tfat'</i>
	<i>'svat'e</i>	'call'	target	<i>zvat'</i>
(63)	Anonymous			
	<i>paku'pat'i</i>	'buy'	target	<i>paku'pat'</i>
	<i>li'gɔje</i>	'river:INSTR'	target	<i>r'i'kɔj</i>
(64)	Sveta			
	<i>tfu'zɔje</i>	'stranger'	target	<i>tfu'zɔj</i>
	<i>at'krɔj</i>	'open:IMP'	target	<i>at'krɔj</i>
(65)	Nina			
	<i>'nafə</i>	'1PL:ACC'	target	<i>nas</i>
	<i>'zɛs'i</i>		target	<i>'z'd'es'</i>

Not all targets with a final palatalized consonant have a high front or front mid epenthetic vowel in Sino-Russian idiolects. If the final consonant is de-palatalized in Sino-Russian, the epenthetic vowel is often – *a*, as already analyzed by Schuchardt in 1884. In the following example, the target *d'v'er* 'door' drops the palatalization in the Sino-Russian idiolect and adds an epenthetic [a].

(66)	Sveta		
	<i>'tv'era</i>		'door'
(67)	Anonymous		
	<i>'tʃajz'eɭa</i>		'Chaser'

In some cases, the epenthetic vowel is high central rather than *a*. The conditions under which the epenthetic vowel is high central or *a* are unpredictable, as either vowel can occur after the same consonant.

(68)	Sveta			
	<i>'vɔk'hə</i>	'wolf'	target	<i>vɔlk</i>
(69)	Lida			
	<i>s'e'sazi</i> and <i>s'azi</i>	'now'	target	<i>s'ijtʃas, ʃtʃas</i>

- (70)

Ivan

tʃeləˈvʲeka

‘man’

target

tʃilʲɐˈvʲek
- (71)

Anonymous

iˈdagə

‘so’

target

iˈtak

11.4 Deletion of the Word-Final Consonant

Deletion of the word-final consonant is relatively rare in comparison to the replication of the final consonant and to the addition of the epenthetic vowel. The deleted word-final consonants in our study include labial nasal *m*, palatal nasal *nʹ* and the dental stop *t*.

- (72)

Sveta

pa tʲiˈla

‘on errand:PL:- DAT’

target

pə dʲiˈlam
- ˈɔʃi*

‘very’

target

ˈɔʃinʹ

The deletion of final dental stop.

- (73)

Sveta

kavˈrʲi

‘say’

target

gəvaˈrʲit ‘he/she says’
- (74)

Anonymous

karˈiʃa

‘pal’

target

kərˈiʃan

The phonological system of Chinese, if it had any effect, would favor the deletion of the final consonant. The fact that these consonants are preserved, either through the replication or the addition of an epenthetic vowel, indicates that the reason for their preservation is functional, namely the need to preserve the identifiability of the lexical item.

11.5 Consonant-Clusters in Word-Final Position

Our recordings do not contain consonant clusters in word-final position in the Sino-Russian idiolects. The Sino-Russian speakers deploy two strategies to deal with target word-final consonant clusters. One is consonant reduction, where either the second or the first consonant of the cluster can be reduced. In the following example, the word-final cluster *kt* is reduced to *k*.

- (75)

Sveta

praˈtuk

‘produce’

target

prɐˈdukt

The underlying *t* is retained in intervocalic position in the plural form of the word.

(76)	Sveta			
	<i>pra'tu'kti</i>	'produce:PL'	target	<i>pre'dukti</i>

Reduction of the first consonant.

(77)	Sveta			
	<i>ʋɔkʰə</i>	'wolf'	target	<i>volk</i>

The other strategy deployed by Sino-Russian speakers is vowel epenthesis, the frequent strategy when the target word ends in a consonant. The added vowel is identical with the vowel of the preceding syllable.

(78)	Lida			
	<i>usu'lisk'ii</i>	'Ussurijsk'	target	<i>usu'rijsk</i>

11.6 Consonant Clusters in Word-Initial Position

In most examples in which the target contains word-initial clusters, these clusters are preserved in the speech of Sino-Russian idiolects regardless of their structure. Thus, the sequences continuant-stop, continuant-continuant, obstruent-sonorant, including stop-sonorant, sonorant-sonorants, and stop-stop (when both stops are nasals) have all been recorded. The importance of these clusters is that they all run against the constraints of Chinese which does not allow consonant clusters in any position in the word. Here is an example in which the target word-initial sequences /t/ and /s/ are preserved, and where the speakers also produce the cluster with different voicing values, VS. for the target cluster /s/ after a word ending in a voiced stop as well as in clause-initial position.

(79)	Anonymous			
	<i>ʒdɔbi</i>	'opt'	target	<i>ʃtɔbi</i>
	<i>ʃs'ɔɔ</i>	'everything'	target	<i>ʃs'ɔ</i>
	<i>ʃs'em</i>	'everybody'	target	<i>ʃs'em</i>
	<i>pr'i'v'ed</i>	'greeting'	target	<i>pr'i'v'et</i>
	<i>zda'ɬɔwja</i>	'heath:GEN'	target	<i>zda'rov'ja</i>

(80)	Anonymous			
	<i>kl'ɔva</i>	'cool'	target	<i>kl'ovə</i>

The sequence [pr] is preserved, albeit sometimes realized as [br], in the speech of the same speaker and in the same utterance.

(81)	Nina			
	<i>pr'i'vikəl'i</i>	'get used'	target	<i>pr'i'vikl'i</i>

- (82) Sveta
pr'i'v'ikl'ut'e 'get used' target *pr'i'v'ikl'ɪ*
- (83) Lyuda
prə'dara 'sell:SG:PAST:PRF' target *preda'la*
- (84) Anonymous
'pɫaz'n'ikə 'holiday' target *'prazn'ik*
bɫi'hɔd'etə 'comes' target *pr'i'xod'it*

Other consonant clusters attested in word-initial position include continuant-stop *st*, *sm*, *vm*, and stop-stop, with the second stop sonorant, *kn*.

- (85) Sveta
stu'tʃat'e 'to knock' target *stu'tʃat'*
sma'tri 'look:IMP' target *sma'tr'ɪ*
kn'i'mu 'to3M.SG' target *kn'i'mu*
vm'es' 'together' target *'vm'est'ɪ*
'skrɔmnəə 'modest' target *'skromnɪje*
- (86) Nina
'nraitsa 'like' target *'nrav'its ə*

The same speaker has consonant clusters in word-initial position.

- (87) Nina
'znaju 'know:1SG:PRES' target *'znaju*
ska'zat' 'say' target *'ska'zat'*

Other clusters recorded in the speech of several speakers include.

- (88) Nina
'starən 'old' target *'starix*
sva'ja 'own' target *'sva'ja*
plɔx 'bad' target *plɔx*
'mnɔga 'many' target *'mnogə*
'glana 'important' target *'glavnəje*
- (89) Lyuda
'tvats'l'etə 'twenty years' target *'dvats(:)ət'l'et*
'tsd'es'i 'here' target *z'd'es'*
prda'vaj 'sell:SG:IMP-F:IMP' target *prədə'vaj*

(90)	Ivan			
	<i>'krabə</i>	'lobster'	target	<i>'krabə:ACC</i>
	<i>ɣʌ's'ivə</i>	'beautiful'	target	<i>kre's'ivij</i>

The same target sequence of obstruent followed by a sonorant, *dr*, is realized by the same speaker in two different ways in the same text. In one case an epenthetic vowel is inserted after *d*, with *r* realized as *l*, and in the other case the sequence *dr* is pronounced as in the target word.

(91)	Anonymous			
	<i>dəlu'z'ja</i> and <i>dʌu'z'ja</i>	'friends'	target	<i>dru'z'ja</i>

11.7 *Geminated Consonant in Word-Initial Position*

We have recorded several instances of geminated consonants in word-initial position. This gemination results from assimilation of the stop to the preceding continuant.

(92)	Boris			
	<i>zz'es'</i>	'here'	target	<i>zd'es'</i>

Recall that Chinese does not have any word-initial consonant clusters. And yet, all clusters that occur in the Russian target words occur in the speech of Sino-Russian idiolects. Hence, the phonotactics in word-initial position in Chinese has no effect on the speech of Sino-Russian speakers. Most important, the absence of the reduction of word-initial consonant clusters points to the need to preserve the phonological identifiability of the word as the motivation for the preservation of these clusters. While one could expect the use of an epenthetic vowel to break the word-initial consonant clusters, there are very few cases of such epenthesis. This fact indicates that the constraint in Chinese on word-initial consonant clusters is not a major factor in the Sino-Russian phonological system.

11.8 *Consonant Clusters in Word-Medial Position*

Chinese may have consonant clusters in word-medial position when a lexical item is a compound. Most consonant clusters in word-medial position in the target words are replicated in the Sino-Russian idiolects.

(93)	Anonymous			
	<i>'ʌuzg'i</i>	'Russian'	target	<i>'rusk'ʌ</i>

The deletion of a vowel in the target word may result in the three consonant-cluster stop-continuant-stop, *pfk*.

- (94) Sveta
'papʃka 'grandmother' target *'babuʃka*

Other variants by the same speaker include *'pabiʃka*.

A speaker who has a tendency to voice consonants can voice target-word clusters such as *ʃk*, *n'k*, or *l'ʃ*, or keep the sequences voiceless, all in the same text.

- (95) Nina
'bavʃkam'i 'grandmothers' target *'babuʃk'i*

- (96) Anonymous
d'i'd'iʒg'e 'children: target *d'i'tiʃki*
DIMIN'

ng and *nk*

- (97) Anonymous
'maling'ee and 'small' target *mal'm'kij*
'mal'en'k'i

l'ʒ

- (98) Anonymous
bal'ʒɔje 'big' target *bal'ʃɔj*

In another utterance, the same speaker keeps the sequence *l'ʃ* voiceless.
l'ʃ

- (99) Anonymous
bal'ʃɔj 'big' target *bal'ʃɔj*

ɬb'

- (100) Anonymous
tuɬ'b'ina 'turbine' target *tur'b'ina*

mn', gd, pr

- (101) Sveta
'pɔmn'u 'remember: target *'pomn'u*
1SG:PRES'
kəg'da 'when' target *kəg'da*
uta'pr'en'i 'fertilizer' target *uda'br'en'ija*

zr, zd, rn

(102)	Nina			
	<i>razr'i'fæ</i>	'allow'	target	<i>razr'i'fajut</i>
	<i>'vɔzdux 'vɔzdu</i>	'air'	target	<i>'vɔzdux</i>
	<i>'mɔrna</i>	'can'	target	<i>'mɔzna</i>

nr, st

(103)	Ivan			
	<i>pa'nraav'isa</i>	'like'	target	<i>pa'nrav'ifsə</i>
	<i>mas'ti</i>	'bridges'	target	<i>mas'ti</i>
(104)	Nina			
	<i>pastə'jana</i>	'regular'	target	<i>pəstə'janaja</i>

We did observe an occasional change from the stop-stop *tn* cluster to the continuant stop *sn*.

(105)	Sveta			
	<i>pr'i'jaasna</i>	'pleasantly'	target	<i>pr'i'jatnə</i>

The only case of consonant reduction in a two-consonant cluster that we recorded was in the noun *maltfik* 'boy'. Here, the lateral *l* is deleted and replaced by vowel length.

(106)	Sveta			
	<i>'maatfikə</i>	'boy'	target	<i>'mal'tfik</i>

(Note the epenthesis of the vowel *ə* at the end of the word.)

Even the word-internal three-consonant clusters *str* and *tkr*, i.e., clusters with the third consonant being a sonorant, are replicated in the Sino-Russian idiolects.

str

(107)	Ivan			
	<i>'ostrɔvəv</i>	'island'	target	<i>'ostrəf</i>

tkr, vʃtʃ

(108)	Sveta			
	<i>at'krɔj</i> and <i>at'kritaje</i>	'open'	target	<i>at'kroj</i>
	<i>vav'ʃtʃe</i>	'completely'	target	<i>vav'ʃtʃe</i>

The same speaker, Sveta, inserts an epenthetic vowel to break a three-consonant cluster in the target word, thereby producing a voiced consonant: *vab(ə)ʃʃe* ‘completely’.

Even when a target has only a two-consonant cluster, vowel reduction in the Sino-Russian idiolect may result in a three-consonant cluster in word-medial position. Such a reduction is not motivated by the Chinese phonological system, especially if it were to result in a three-consonant cluster.

tpr

- (109) Sveta
pr'etpri'ʒʒat'i 'warn' target *pr'idupr'iz'dat'*

11.9 Conclusions Concerning Phonotactics

Word-medial consonant clusters in the Russian target are largely preserved in Sino-Russian dialects. This preservation runs counter to the phonological system of Chinese and is motivated by the communicative need to preserve the identifiability of the lexical item. The acceptance of Russian phonotactics with respect to word-initial and word-medial consonant clusters runs contrary to the claims made in Freeman et al. (2016), where they postulate, based on experimental study of Spanish-English bilinguals, that “bilinguals’ access to structures across both languages during spoken word comprehension is not limited specifically to phonology, but also applies to phonotactic constraints.” The result from our observation is that there is a different strength with respect to the phonotactics in word-initial, word-medial, and word-final position. The word-initial and word-medial constraints of Chinese are largely ignored. Most of Russian word-initial and word-medial two-consonant clusters are readily preserved by the Sino-Russian speakers. The phonotactics constraints in word-final position of Chinese are sometimes followed by Sino-Russian speakers, in that they add an epenthetic vowel. This constraint can just as readily be violated, with target words with final consonants ending in a consonant in the Sino-Russian idiolects.

The relatively frequent preservation of the word-medial consonant clusters of the target words can be explained by the fact that in lexical compounds in Chinese, consonant clusters are allowed between the adjacent constituents of the compound.

12 The Dental Sonorants: r, l and n Distinction

Chinese has no phonemic contrast between the liquids *l* and *r*, while Russian does. The studies dedicated to Chinese-Russian pidgin have noted problems involving consonants *r* and *l* in Sino-Russian. The speakers of Sino-Russian

idiolects vary in their realization of the liquids *r* and *l* in target words. Many targets that have *r* are realized with *l* instead. The replacement of *r* by *l* is not, however, consistent, whether across speakers or in the speech of the same speaker. The following phenomena take place: The replacement of *r* by *l*; the preservation of *r* and preservation of *l*; and the replacement of *l* by *r*. Hence, the speakers are aware that Russian has a richer system of contrasts, but they do not know which of the segments is a part of the underlying structure of a given lexical item. The presentation of facts follows the three scenarios listed above.

12.1 *Replacement of the Target r by l*

In the following example, two instantiations of underlying *r* are replaced by *l*, in the words *ruskij* ‘Russian’, realized as [‘lusgə] and [‘ɭuzg’i], the target word *dru’z’ja* ‘friends’ is realized as [dɭu’z’ja] or [dəlu’z’ja] by the same speaker, Anonymous.

12.2 *Replacement of the Target l by r*

Some Sino-Russian speakers replace the target *l* by *r*, as in the form ‘*pira*’ ‘be’ (target *bi’la* ‘be:3F’). The following example contains two instances of lateral *l*, one palatalized and the other not, and one instance of a palatalized trill. The palatalized trill and the palatalized *l*’ are sometimes preserved, but the palatalized *l*’ may be replaced by the palatalized *r*’. This fact is the evidence that the speakers of Sino-Russian perceive palatalization as an important feature of Russian.

(110)	Sveta			
	<i>r’eku r’irəvat’e</i>	‘regulate’	target	<i>r’igu l’irəvət’</i>

The non-palatalized *l* is replaced by the palatalized trill.

(111)	Lyuda			
	<i>’pirə</i>	‘be:3SG:F’	target	<i>bi’la</i>

Similarly, in the following examples the non-palatalized *l* is replaced by *r*.

(112)	Ivan			
	<i>rə’v’irə</i>	‘catch:SG:PAST’	target	<i>la’v’il</i>
	<i>’v’id’iraa</i>	‘see:SG:PAST’	target	<i>’v’id’il</i>
	<i>jer</i>	‘eat:SG:PAST’	target	<i>jel</i>
	<i>rad’ivəs’tok</i>	‘Vladivostok’	target	<i>vləd’ivə’stok</i>
	<i>’jezd’irə</i>	‘travel:SG:PAST’	target	<i>’ez’d’il</i>
	<i>’birək</i> and <i>bi’ra</i>	‘be:SG:PAST’	target	<i>’bilə</i>
				<i>bil</i>

- (113) Lyuda
na'tfara 'at the begin- target *sne'tfalə/vne'tfal'ɪ/*
 ning' *ne'tfalə*

But, rather unexpectedly, the target trill *r* is replaced by the lateral *l* by the same speaker.

- (114) Lyuda
'linəka 'market' target *'rinək*

12.3 *Preservation of Target l*

The speakers who replace *l* by *r* also preserve both *l* (whether palatalized or not) and *r* in the target words.

- (115) Ivan
gu'l'ara 'walk:SG:PAST' target *gu'l'al*
ʃfelə'v'eka 'man' target *ʃfila'v'ek*

The same speaker replaced the lateral *l* by the trill *r*:

- (116) Ivan
ʃad'ivəs'tək 'Vladivostok' target *'vləd'rvə'stok*

12.4 *Preservation of the Target r*

The trill *r* of the target word can be retained.

- (117) Sveta
la'rəta 'people' target *ne'rodə*
- (118) Ivan
'krabə 'lobster' target *'krab*
'ribə 'fish' target *'ribə*
- (119) Sveta
t'i'v'er 'now' target *ti'p'er'*

The target sequence *pr* is realized as such in both word-initial and word-medial position.

- (120) Sveta
pr'etpri'ʒʒat'i 'warn' target *pr'idupr'iz'dat'*
pr'i'vikl'ute 'get used' target *pr'i'viknut'* or
pr'i'vikl'i

12.5 *Replacement of n by l*

In a few cases, we have observed the replacement of the dental *n* by the lateral *l*, which is also a dental consonant. Hence, once again, the replacement preserves the place of articulation, and what is changed is the manner of articulation.

(121)	Sveta			
	<i>la'ɾɔta</i>	'people'	target	<i>nɐ'rodə</i>
	<i>pr'i'v'ikl'ut'e</i>	'get used'	target	<i>pr'i'viknut'</i> or <i>pr'i'vikl'i</i>
	<i>fəɫə'rej</i>	'lantern:PL:- GEN'	target	<i>fənɐ'rej</i>

Once again, the changes involving the dental series *l*, *r*, and *n* indicate that the speakers of Sino-Russian perceive the place of articulation as the most important characteristic of segments. The manner of articulation appears to be secondary.

13 *Conclusions and Implications*

The phonological system of Russian populates the segmental inventory of the phonology of the Sino-Russian idiolects. This is most clearly evidenced by the presence of segments that occur in Russian but not in Chinese, viz. voiced and voiceless obstruents, palatalized and non-palatalized obstruents, and the presence of both trills and laterals. The effects of Chinese on the Sino-Russian idiolects segmental inventory are minor when compared to the effects of Russian. We have noticed just a few cases of the presence of retroflex obstruents. We did not observe any effects of the aspirated vs. non-aspirated distinction in the Sino-Russian inventory.

The crucial feature in the perception by Sino-Russian speakers of the segmental structure of Russian is the place of articulation. The manner of articulation by Sino-Russian speakers differs from Standard Russian in the following way: The speakers of Sino-Russian perceive that the feature voice, which has no distinctive role in Chinese, plays an important role in Russian. The speakers of Sino-Russian do not know, however, which target words in Russian have underlying voiced segments and which have underlying voiceless segments. Consequently, the assignment of voicing does not follow the Russian pattern. Nevertheless, the assignment of the feature voice is not completely random:

- i. Labial voiced stops are most often devoiced.
- ii. Dental stops are sometimes devoiced and sometimes voiced.
- iii. Voiced continuants are often reproduced as such and so are voiceless continuants.
- iv. There are no traces of the aspirated/non-aspirated distinction, which plays a contrastive role in Chinese.
- v. The phonotactics of the Sino-Russian idiolects are almost completely dominated by the phonotactics of Russian. Word-initial and word-medial consonant clusters are abundant. Recall that Chinese does not allow consonant clusters in any position.

Chinese does not allow consonants other than dental and velar nasals in word-final position. Russian allows all consonants in word-final position. The Sino-Russian idiolects sometimes preserve the Russian word-final consonants without any changes and sometimes add an epenthetic vowel. The deletion of the word-final consonant in Sino-Russian idiolects is very rare. We interpret that the motivation in the preservation of word-final consonants is the need to preserve the phonetic integrity of the word. That in turn is motivated by the communicative need, viz. the need to be understood.

One of the most intriguing conclusions to be drawn from our study is that the speakers of Chinese perceive the entities which must be characterized as words. These are entities whose boundaries are phonologically marked. The phonological markers of these entities in Russian are stress markers. The evidence that stress is the main criterion by which the word is identified as such is the fact that the Sino-Russian idiolects, in the overwhelming majority of cases, have the assignment of stress faithfully corresponding to that of Russian. This is a non-trivial fact given that the stress in Russian is lexically determined. The semantic content of the entity word in Sino-Russian is an entirely different matter, which we will undertake in forthcoming studies.

It is not clear that the speakers of Sino-Russian idiolects have a phonological system with a finite number of underlying segments, a finite set of rules determining the realization of the underlying segments, a finite set of phonotactics constraints, and a set of rules to override the phonotactics constraints. There is plenty of evidence that the Sino-Russian speakers know what are the places of articulation for the segments to convey a given word. Outside of the place of articulation, there exists a considerable margin in the realization of segments.

With respect to the phonotactics of clusters, the Sino-Russian speakers do not follow the constraint that clusters of obstruents must have the same value for the feature voice. The violation of this constraint is in harmony with the

fact that the voiced-voiceless distinction is not a feature of Chinese, and for Chinese speakers it is a secondary characteristic of segments.

In the data that we have gathered there appears to be no evidence of the existence of some universal principles of the phonological systems. The speakers of Sino-Russian idiolects produce the segments that occur in Russian, have largely adopted the phonotactics of Russian. They have reanalyzed the feature system of Russian by creating a hierarchy whereby the place of articulation is the determining distinctive feature of segments, with all other features being subordinate. Notice that the preservation of the feature [palatalized] provides additional support for the place of articulation occupying the top place in the hierarchy of features.

In their language production, the speakers of Sino-Russian idiolects are motivated by communicative need and strive to produce lexical items in a form that will be understood by their Russian listeners. Quite unexpectedly, it turns out that the place of articulation of segments constituting a word is a sufficient tool to achieve the desired result.

List of abbreviations

ACC	accusative
DAT	dative
DIMIN	diminutive
F	feminine
GEN	genitive
IMP	imperative
IMPF	imperfective
INF	infinitive
INSTR	instrumental
NEG	negative
PAST	past
PFV	perfective
PL	plural
PRES	present
SG	singular

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