

THE GLOBAL INTERROGATIVE INTONATION AS A SOCIAL INDEX IN PARMA LINGUISTIC COMMUNITY

A study of the production and perception of the global interrogative in the local variety of Italian in Parma has been conducted within the theoretical framework of the AMPER project (*Atlas Multimédia Prosodique de L'Espace Roman*). Such a framework, inspired by the superpositional approach introduced in Rossi (2001), leads to the identification of the prototypes of affirmative and global interrogative intonational patterns through the collection and analysis of a previously defined set of isolated sentences. Such sentences are elicited from the informants through words represented by images. The syntactic structure of the sentences is SVO, with O being a Noun or a Noun + Adjective group. The prototype of the global interrogative of Parma features a rising-falling base-structure, where a V-shaped bi-tonal falling-rising fundamental frequency contour occurs on the last stressed vowel. This *intoneme* features three main *allotones* which are judged by the informants as equally representative of their local variety. The AMPER acoustic-perceptive framework requires identification tests to validate the prototypes. The performed tests, based partially on previous works from Romano (1998) and Interlandi (2004), include a grammatical modality identification experiment and two experiments centered on diatopic and diastratic sociolinguistic dimensions. The grammatical modality experiment has suggested clear indications of the importance of the last stressed vowel acoustic correlates (LSV, and its preceding and following vowel) in carrying modality-related information of the entire sentence. The diatopic and diastratic experiments described in this work, performed by 40 informants born and living in Parma with different gender and age characteristics, use prosodic-only synthesized sound files extracted from recordings of actual linguistic production of 15 informants selected with sociolinguistic criteria (gender, age, education, social network). Depending on the specific task required by the tests, the synthesized files may feature artificial modifications, introduced by the researchers, in the LSV and its surrounding vowels.

The diatopic experiment consisted of two tests. In the first the informants had to listen to a number of prosodic-only sounds extracted from speech of many Italian cities, including Parma, and tell if these sounds are from their language community or not. The researchers also modified the duration of the LSV of Parma prototypes in some *stimuli*, both shortening (down to the 30% of the original value) and lengthening it (up to the 200%). Such a test delivered two important results. First, the informants can easily separate prosodic-only sounds of their community from those extracted from others geographical areas (with accuracy percentage of 83%). Second, in modified sounds, while there is a lower limit for the duration of the LSV under which (about 70% of original duration) most of the informants are not able to recognize Parma sounds as coming from their own community, such a strict limit does not exist if the vowel is lengthened. Indeed, sounds with lengthened LSV, up to 150% of the original figure, are still correctly recognized as Parma sounds by the 70% of the informants. In the second diatopic test the informants had to listen to a number of synthetic sounds and isolate Parma sounds. Synthetic *stimuli* were created as follows: the LSV Parma prototypes were modified through the insertion of the values of F0 first, then of duration, and finally of both; the same was done on the LSV preceding and following vowel. The values of F0 and duration are those peculiar of neighboring and distant regional varieties. These progressive modifications let the researchers analyze the F0 and duration acoustic correlates alone and combined in order to identify those parameters that may represent geoprosodic indices for the community. The test suggested that while F0 alone is sufficient for the discrimination of those varieties that feature opposite movements in the

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modality final contour (MFC, i.e. the LSV plus the following vowel), the interaction of F0 and duration create the typical speed of intonation movement on the MFC of Parma local variety of Italian language, that can be considered a geoprosodic index for the community.

Experiments in the sociolinguistic area of diastratic variation are, as well, composed of two tests. During the first test the informants listen to prosodic-only synthetic sounds of Parma speakers, featuring normalized F0 (150Hz), with or without modified duration of the LSV (again, up to 200% of original value). They are requested to associate to the sounds a “degree of Parma typicality” chosen from a closed list of 4 cases. In the second diastratic test, intended to verify the reliability of the first one, the informants are requested to perform the same task with the synthetic sounds featuring a flattened F0 profile on all the vowels, except those in the MFC. Such a test, confirming the results of the first one, underlines the importance of the informations conveyed by the MFC alone. The diastratic experiment provided several further relevant suggestions. First, two different prototypes for the global interrogative intonation structure coexist in the same linguistic community: one for the 18 to 30 age group and one for the 60 to 80 age group. These prototypes differ mainly in the MFC typical F0 and duration combination. Second, informants’ social networks influence their behavior with respect to intonation: e.g. while the informants with narrow social networks tend to use more conservative intonational patterns, those that feature broad social networks use innovative, non prototypical patterns. Finally, the duration of the LSV may be treated as a sociophonetic index in the local community, since the researchers observed that the more the length of this vowel is artificially increased the more the whole structure featuring this extra long vowel is judged by the most part listeners (especially by older female listeners) as typical of the local variety.

In order to automate the operations on the prosodic material used in the tests, a MATLAB® script has been developed (© The MathWorks, Inc.). It receives as an input AMPER-formatted text files containing the prosodic data extracted from the recordings and lets the user to perform manipulations of the duration of single vowels and of fundamental frequency, both on a large scale (e.g. resetting to a specified Hertz value the mean fundamental frequency of all the sentence) and on a small scale (e.g. changing the F0 contour of a single vowel, operating with semitone scale values). The outputs of the script are AMPER-formatted text files, containing the modified data (that can be reused as input for the script thus generating further modifications) and wave sound files that can be used in perception tests.

This analysis of the global interrogative in Parma corroborates the validity of AMPER as a prosodic research framework. AMPER prosodic-only synthesized and normalized sounds, although not directly accessible to conscious competence of the speakers, turn out to be well accepted and recognized as good representations of actual speech intonation during perception experiments. Furthermore, the analysis suggested that certain acoustic features, especially those extracted from the LSV and the neighboring ones, behave in fact as carriers of diatopic and social status-related information. On a perceptive point of view, a geoprosodic and a sociophonetic index have been identified for the Parma community in a situation where a clear interaction between social and geographical dimensions is present.

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SELECTED REFERENCES

- Contini, M., Lai, J. P. & Romano, A. (2002a), La géolinguistique à Grenoble: de l'ALiR à AMPER, *Revue belge de Philologie et d'Histoire*, vol. 80 n. 3, 931-941.
- Contini, M., Lai, J. P., Romano, A., Roullet, S., de Castro Moutinho, L., Coimbra R. L., Pereira Bendiha U. & Secca Ruivo, S. (2002b), Un project d'Atlas Multimédia Prosodique de l'Espace Roman, *Proceedings of the 1st International Conference on Speech Prosody 2002*, Aix-en-Provence, France, April 11-13, 227-230.
- Felloni, M. C. (2010), *Uno studio sociofonetico sull'intonazione. Produzione e percezione della interrogativa globale nell'italiano regionale di Parma*, Tesi di Dottorato, Dottorato in Linguistica (XXII ciclo), Dipartimento di Linguistica Teorica e Applicata, Facoltà di Lettere e Filosofia, Università degli Studi di Pavia.
- Interlandi, G. M. (2004), *L'intonazione delle interrogative polari nell'italiano parlato a Torino.: tra varietà regionale e nova koiné*, Tesi di Dottorato, Dottorato in Linguistica (XV ciclo), Dipartimento di Linguistica Teorica e Applicata, Facoltà di Lettere e Filosofia, Università degli Studi di Pavia.
- Lai, J. P., Romano, A. & Roullet, S. (1997), L'analisi prosodica di alcune varietà linguistiche d'Italia: proposta per un approccio metodologico unitario, *Bollettino dell'ALI (Atlante Linguistico Italiano)*, 21, 23-70.
- Romano, A. (1998), *Analyse des structures prosodiques des dialects et de l'italien régional parlés dans le Salento (Italie): approche linguistique et instrumentale*, Tesi di Dottorato in Scienze del Linguaggio, Centre de Dialectologie, Université Stendhal Grenoble 3.
- Romano, A. (2001), *Analyse des structures prosodiques des dialects et de l'italien régional parlés dans le Salento (Italie): approche linguistique et instrumentale*, Lille, Septentrion Presses Universitaires.
- Romano, A. (2005), Utilisation des donnée AMPER pour une description de la variation linguistique: test de perception et controles statistique, *Geolinguistique*, 3, 39-64.
- Rossi, M. (2001), L'intonation. Prémisses, théorie, statut, in *Actes de Journées Prosodie 2001*, Grenoble, France, Octobre 10-11, 13-41.
- Sardelli, E. (2006), Due realtà linguistiche urbane a confronto (Roma e Milano): quali parametri prosodici per un modello plausibile?, in *Analisi prosodica. Teorie, modelli e sistemi di annotazione. Atti del II Convegno Nazionale dell'Associazione Italiana di Scienze della Voce (R. Savy & C. Crocco, a cura di)*, Salerno 30 novembre-2 dicembre 2005, Torriana, EDK,
- Stuart-Smith, J. (2009), Recent Research in Sociophonetics. Evidence from Scottish English, *Phonetic Phonologici Dies 3, Seminario di Fonetica e Fonologia* (A. Vietti & L. Spreafico, a cura di), Libera Università di Bolzano 9-12 marzo 2009.