

# The Swedish Model of Public Outreach of Linguistics to secondary school Students through Olympiads

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## Abstract

What is it that we want to achieve with our Linguistic Olympiads and how do the contests vary in different countries? The Swedish Olympiad has been running for 7 years now and is primarily focused on public outreach - spreading linguistics to secondary school students. The contest involves not only a test but also lectures, school visits and teaching material. The effort is put on promoting the interest of linguistics to students through fun material and good contact with teachers of languages. This presentation contains an overview of the Swedish version of Olympiads in Linguistics as well as some concrete examples of workshop material on linguistic problems for secondary school students.

## 1 Introduction

This paper presents an overview of the way the Olympiad in Linguistics is run in Sweden and how one can go about public outreach of linguistics to secondary school students. This paper and presentation intends to provide useful tips on how an olympiad of this kind can be organised and also discuss how we in the linguistics community can spread linguistics to potential students and the non-academic world.

The Swedish Olympiad in Linguistics ("Lingolympiaden") started in 2006 as a project within Young Scientists Stockholm. The winners of the Swedish contest have participated in the International Olympiad in Linguistics (IOL) since 2007 and in 2010 Sweden was host country for IOL.

There are a couple of things that set the Swedish contest apart from most other olympiads of linguistics around the world:

1. the contest takes place at the involved universities themselves, not in classrooms in secondary schools
2. the contest is a whole-day event with contest in the morning and lectures in the afternoon

3. there are fewer participants than many other countries participating in IOL
4. the contest has a focus on public outreach rather than finding the best competitors for IOL
5. we engage in other public outreach activities such as school visits, lectures and group assignments for secondary school students
6. the primary audience is secondary school students that study languages, humanities and social science rather than the natural sciences

The aim of Lingolympiaden is to spread linguistics to secondary school students in a fun and educational way. While there are many extra curricular activities for students of the natural sciences: such as the other olympiads, summer schools, exhibitions etc there are relatively few alternatives for students of social sciences. Lingolympiaden intends to fill that void, showing that science does not only consist of the natural sciences and that linguistics is a fun and exciting discipline.

Lingolympiaden is run as a collaborative project between the Young Scientists Stockholm (YSS) and the Linguistics departments at Stockholm University and Lund University. YSS is a youth volunteer organisation devoted to spreading the interest of science and technology to the youth of Sweden (youth <26 years old).

Lingolympiaden is funded by the universities, the county council of Stockholm, YSS and The Royal Swedish Academy of Letters, History and Antiquities.

## 2 The different organisers aims and contributions

The university contributes with rooms and staff for creating and coordinating the problem set as well as correcting. The incentive for the universities to be involved in this is primarily to make secondary school students aware that linguistics exists and potentially acquire more students.

YSS coordinates the entire project, contacts schools, applies for funding etc. YSS also make

school visits, talking about linguistics and problems from the olympiads with secondary school students. The goal of YSS is to encourage the youth of Sweden to be interested in science and technology and pursue college studies. YSS receives funding from the County Council of Stockholm for this.

The Royal Swedish Academy of Letters, History and Antiquities funds Sweden's participation in the International contest. The academy is interested in promoting humanities and the social sciences to the youth and as one of the very few enterprises that actually does this Lingolympiaden receives their funding.

As all of the involved parties in Lingolympiaden are interested in promoting linguistics to secondary school students rather than obtaining the highest scores in IOL our contest is more geared towards sparking interest than finding the best problem solvers. Lingolympiaden is more focused on finding secondary school students that are interested in languages and make them interested in social science and linguistics rather than making students that are already interested in natural science and programming interested in languages.

### 3 Target audience and contact

Lingolympiaden aims to reach secondary school students that are interested in languages and linguistics and encourage them to become interested in studying social sciences, especially linguistics, at university. It has become apparent that students who are interested in the other olympiads and students that are very enthusiastic about natural sciences and programming seem to find the contest even if there has been little effort to reach them. It is much harder to reach secondary school students enrolled in programmes of social sciences and humanities as they are generally less used to there being extra curricular activities for them to be involved in. That being said, Lingolympiaden is of course open to all students (including students of non-theoretical programmes), students from natural science or programming backgrounds are more than welcome - it is just that efforts are put where they seem to be needed (and wanted) the most.

Lingolympiaden would also like to reach more students who come from families with little higher education, but as these students are less likely to choose theoretical secondary school programmes and also less likely to have passionate and driven teachers this has proved a very hard task indeed.

The primary means of contact are teachers of languages at secondary schools. In 2011 the Swedish government initiated a new secondary school programme of humanities that includes a basic course in linguistics as well as more classes in modern languages. We can take no credit for

this, however, Lingolympiaden has established a stable and good contact with the Swedish Language Teachers Association as well as with teachers involved in this new secondary school programme. This has been a very fruitful connection, not only in that the contest reaches the students but also because the teachers have benefited from this in their education.

Lingolympiaden also provides teaching materials in form of slides for classes in general linguistics, an IPA tutorial and adapted versions of old problems from the contest. Teachers and students are also able to ask questions about linguistics over email and Lingolympiaden gives advice on literature and sites (WALS, Ethnologue, Universals Archive, MultiTree, Omniglot, LangDoc, UNESCO Atlas of the World's Languages in Danger, The Linguistics Podcasts by LinguistChris, The Five Minute Linguist-podcast etc.) that are useful to the teachers in their education. In addition to this Lingolympiaden visits secondary schools, giving lectures in linguistics and holding workshops on Olympiad problems for a nominal fee. These services are much appreciated by the teachers and students.

Maintaining an active and good relation with the teachers is crucial in recruiting contestants to Lingolympiaden as well as a perfect opportunity to provide our first and foremost goal, to increase the interest in linguistics among the secondary school students.

### 4 The problems of Lingolympiaden

Lingolympiaden aims to include problems from computational linguistics, general linguistics (primarily grammatical typology), field linguistics, phonetics and psycholinguistics. The staff at the universities are encouraged to construct problems on their area of expertise. Since there are many Ph.D. students who work on language descriptions and linguistic typology at Swedish universities there have been many problems on minor languages such as Kuot of Papua New Guinea and interesting grammatical phenomena such as hodiernal tense. The problem set of the Swedish contest has featured adapted and translated problems from other olympiads and other sources (Speculative Grammarian for example), but as the staff at the universities improve with every year there are less and less of these external problems.

The problem constructors are advised to take into consideration that the problems are to be solvable by secondary school students with no linguistic training, but at the same time the problems shouldn't be based on pure logic alone. This is a tricky balance and it is impossible to make sure that no-one has an unfair advantage.

The problem set for the Swedish olympiad is dependent on who within the university staff has the time to spend construction and testing problems. While the attention is to cover all areas within linguistics it is rare that staff from all sections are able to contribute. This is not a problem that is unique to the Swedish contest, more international collaboration will hopefully improve this situation. Translating Swedish problems into English, Russian, Bulgarian, Italian or German is very feasible.

#### **4.1 Adaptation of problems into teaching material - some examples**

When visiting at school it isn't always possible to use problems from the Swedish or International olympiads directly as they were constructed - many problems need to be modified to better suit the conditions of the workshop. When conducting workshops it isn't the aim to test the students but rather to discuss different approaches to the problem and encourage their interest. Here are some examples of the problems that have been used in workshops at secondary schools.

##### **Lingdoku by Trey Jones**

Lingdoku is an IPA version of the Japanese number game Sudoku. This is very useful type of problem since most students are already familiar with the premises of Sudoku, it gives them a nice introduction to the variables necessary to define consonants and it is great for illustrating different approaches of problem solving. Since students enrolled in the new humanities programme are required to learn IPA this problem is also much appreciated by teachers.

Lingdoku focuses only on pulmonic consonants and two variables, manner and place. The adaptation used in Lingolympiadens workshop has 4\*4 different symbols to place within the grid without repeating the same manner or place in the 4 2\*2-squares or any row or column. The Lingdoku table will have some values filled in and by regulating these one can change the time necessary to solve the problem and also change focus on what part of the problem solving we want to emphasise.

##### **Drehu & Cemuhî by Ksenija Giljarova**

This problem comes from IOL-6 (2008 in Slanchev Bryag). It has proven to be a highly useful and appreciated problem to run with students. It is quite illustrative of the kind of problems one might encounter and it is not solvable by only applying straightforward logic.

The problem consists of two sets of words in two related languages with translations into Swedish in a scrambled order. There are also a few morphemes that are translated are given as related in the two languages but with no Swedish translation. The method of solving it involves applying several ways

of comparing the languages, the students have to be able to identify that the words have developed differently in the two languages and that concepts like horizon, border, wall and beach share a certain semantic component ("boundary"). It serves as inspiration and proof to students that their knowledge, experience and general feel for language and linguistics is directly applicable to solving concrete linguistic problems.

##### **PSG Web Laboratory by Torbjörn Lager**

The Linguistics department at Gothenburg University have developed a simple online tool for creating context-free phrase structure grammars and testing them out. It was developed as an aid in a course on generative grammar and CFGs but it has quickly spread to other departments. It is accessible through any web browser, no passwords necessary. The tool is very useful when one wants to illustrate the concepts of competence and performance as conceived by Chomsky, how syntactic trees can be applied and, if time permits, what CFGs are. This exercise does require a bit more effort as many students are unfamiliar with formal language, but it is quite easy to make it fun since the freedom in defining the lexicon is limitless - something that has proven to be quite amusing.

##### **Arongo, Arongo - why have you forsaken me?**

Patrick Littell constructed a problem about the language on the island of Manam for NACLO in 2008. This problem deals with different ways of expressing location in space, turns out that the language of the island of Manam has a rather unusual system. The students are given a map of the island and some sentences in the language describing the location of certain houses on the map. This problem has been adapted into a small role playing game for the Lingolympiaden workshops.

The students are playing a group of field linguists who arrive to the island to study the indigenous language. There is only one person, Arongo, on the island with whom they have a common language (Tok Pisin). He was supposed to meet them when they arrived, but since they were late due to a storm he has returned to his home. They have to locate him by deciphering what the natives are saying to them, i.e. the sentences from the original problem. They do not receive all sentences at once, they get them in small batches along with other clues (in step 2 they learn that there is a volcano). This gives them smaller amount of text to process at the same time, which makes it look less overwhelming. They also get to share their ideas and conclusions with each other and test their hypothesis on new data. Thus, learning how to approach a complex problem.

If there is plenty of time there is also the possibil-

ity of discussing other problems that field linguists might encounter.

## 5 Conclusions

The aim of the organisers and nature of the secondary school system determine the shape of the Olympiad of Linguistics in a specific country. In the case of Sweden the olympiad is primarily focused on reaching secondary school students with the message that linguistics is fun and they should pursue it further. An Olympiad more geared towards making students of natural sciences and programming interested in languages might look different (but not necessarily).

Lingolympiaden makes use of the expertise competence of the staff at the universities in the problem construction but also for lectures and teaching material, the universities use Lingolympiaden as a way of reaching potential students. YSS, the County Council of Stockholm and the Royal Academy of Letters support Lingolympiadens efforts to encourage the the youth of Sweden to be interested in social sciences and humanities in general and linguistics in particular. Teachers of modern languages and the new humanities programme use Lingolympiaden to improve their classes and provide extra-curricular activities for their students. And lastly: the students of secondary schools in Sweden use Lingolympiaden to try out what linguistics is all about and whether it is fun. It is their interest and their curiosity that is at the core of Lingolympiaden and other projects by YSS.

## 6 Future

As the contest grows there will hopefully be more opportunities to communicate with students and teachers of secondary schools and become more involved in their education. Lingolympiaden is a small contest aimed at providing an all-day outing at the university for secondary school students, but if there is interest there might be local contests at the schools themselves as well.

The Swedish government is right now considering whether or not to support Lingolympiaden in the same way that they support the Swedish Olympiad of Informatics, Lego Robot contest, Chemistry Olympiad etc. If they do, that will be a great leap towards acknowledgement of the value of social and human sciences alongside the natural sciences. Linguistics is an interdisciplinary scientific field that covers classical humanities, social and human sciences, natural sciences like neurology and biology, and computational disciplines. There is no reason why a Olympiad of Linguistics should be excluded from support of Olympiads of Science.

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