Teaching alpine structural geology in French

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Abstract

The graduate course in alpine tectonics given in the fall of 1959–1960 at the University of Illinois, designed to provide specialized training in structural geology, was also utilized to give experience in discussing geology in French. Lecturing was carried on in two languages for six weeks; gradually the English was reduced and finally was dropped almost entirely. Most students took their notes chiefly in English, with side notes in French, or conversely when their knowledge of French was sufficient. Each student read widely in the French literature of the Alps, and presented two written reports. A final examination tested the students’ ability to analyze contrasting hypotheses presented in a lengthy French essay which they had not seen previously. The course was successful and will be repeated in alternate years.

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ABSTRACT. The graduate course in alpine tectonics given in the fall of 1959-1960 at the University of Illinois, designed to provide specialized training in structural geology, was also utilized to give experience in discussing geology in French. Lecturing was carried on in two languages for six weeks; gradually the English was reduced and finally was dropped almost entirely. Most students took their notes chiefly in English, with side notes in French, or conversely when their knowledge of French was sufficient. Each student read widely in the French literature of the Alps, and presented two written reports. A final examination tested the students' ability to analyze contrasting hypotheses presented in a lengthy French essay which they had not seen previously. The course was successful and will be repeated in alternate years.

Ignorance of foreign languages, particularly French and German, remains a point of great weakness in the training of our graduate students in geology.

The effects of such a situation are clearly displayed in the geological literature by the repetition of discoveries, bibliographical misquotations, and distortions of all kinds which delay the progress of our science. Russian has not been mentioned because it is becoming the most-translated foreign language. To what extent the translations are reliable is a question on which I am no judge; in any case we remain confronted with the problems of German and French.

It is obvious that the best translation will never replace the direct reading of the original. A well-trained geology student should be able to read such German and French classics in structural geology as Stille, Kober, Von Bubnoff, Staub, Kraus, Goguel, Argand, Lugeon, Gignoux and Moret during his years of graduate study. The required reading and translation examinations for the Ph.D. which are standard in most of the universities of this country are really a test of translation capacity—I would say of temporary translation capacity—and nothing else. In my opinion, these examinations come much too late in the curriculum, because a student should be able to read a foreign language well before the doctorate level to get most of the profit out of it. Really the problem should be taken care of, as in Europe, at the high-school level.

These Ph.D. examinations, moreover, by their very nature treat the subject as a dead language, and appear often to be an end in themselves and just another obstacle to overcome on the way to the degree. They do not correspond to an
assimilation of the language, not even of its technical terminology, because they are not integrated with the rest of the curriculum.

What a graduate student needs is precisely such an integration, represented, for instance, by being exposed to spoken scientific French, in order to add to his translation ability the capability of understanding a foreign geologist or of participating in a discussion at an international congress.

It was with this idea in mind that, in the fall semester of 1959-60, I tried at the University of Illinois the experience of teaching a graduate course in alpine tectonics in French. The course was designed to provide first of all a specialized training in structural geology and second to offer a possibility to the students to hear spoken French and discuss geology in French. The class consisted of ten graduate students who had already passed the Ph.D. French reading examination. It met twice a week, for a total time of about 30 hours. All students were taking the course for credit, and no auditors were admitted in order to keep the class down to a small efficient group.

The technical terminology naturally was the first major obstacle. It was overcome in two ways. The first was by putting strong emphasis on visual aids, such as structural cross-sections drawn on the blackboard, geological and tectonic maps, and color slides. The second was by the previous preparation and distribution of a European stratigraphical column, and of an informal French-English vocabulary in alpine geology. This list of about 600 technical terms appeared to be very useful to the students, who always faced the problem of choosing in dictionaries what could be the geological sense among several given for a certain word. In such a choice, the chances are great of not picking up the correct geological meaning of a word.

Here are some examples taken from translations completed during the course:

**Terrain:** translated as piece of ground, ground, soil, earth, position, site, field instead of *geological formation*.

**Niveau:** translated as level, standard, horizontal instead of *bed* or *stratum*.

**Gouffre:** translated as gulf, abyss, whirlpool, pit instead of *sinkhole*.

**Décrochement:** translated as action of unhooking, disconnection instead of *tear-fault*.

**Eaux de fonte:** translated as smelting, iron, cast-iron, iron-bearing waters instead of *melting waters*.

**Actuel:** translated as actual, real, effective instead of *of the present time*.

**Hauts-fonds:** translated as thick deposits, great depth instead of *shoals*.

**Classement:** translated as stratification instead of *sorting*. 
Se coucher: translated as lying flat instead of becoming recumbent.
Se laminer: translated as to flatten instead of crushed tectonically.
Sillon: translated as furrow, groove, gouge instead of valley or canyon.

At the beginning, the lectures were given in two languages. Each sentence was first spoken slowly in French, the main words being written on the board and translated one by one, and finally the whole sentence was repeated and translated into English. This method of teaching was carried on during six weeks, until most of the technical vocabulary had been assimilated. It corresponded in the course to the nomenclature of structures, the principles of the analysis of tectonic maps, and a discussion of sedimentation and stratigraphy from the beginning of the alpine cycle in the Triassic to the Tertiary orogenic phases.

This introduction took care of almost the entire technical terminology for the rest of the course, and at the same time provided a bridge between the previous knowledge of the students and the new field presented to them. Needless to say, these first weeks were hard on everybody, particularly on the instructor, whose main defect was to lecture too fast. Gradually the situation eased, and the emphasis could be shifted from terminology and syntax to geological discussion.

The English translation was first reduced to short summaries of several French sentences, then to abstracts of paragraphs. Finally, lecturing was given almost entirely in French with the exception of short comments in English wherever special clarification was required. After the introduction on terminology and stratigraphy, the course dealt with the structures of the foreland, the two geosynclinal troughs, the median mass, and the hinterland.

The reaction of the students varied considerably and was a function of their personal knowledge of French. Most of them, after several attempts at French, took their notes in English, with side notes in French intercalated in the text or written in a second column. Others, whose knowledge of French was sufficient, took their notes in that language with side notes in English; and some created a hybrid language which could be understood by themselves only.

Each student had to choose from a list of papers dealing with alpine geology two works of his particular interest to be translated into English and turned in before the end of the semester. These translations were analyzed in detail with the instructor during personal meetings. Unfortunately, lack of time prevented a discussion or presentation of them to the class.

Credit was given after completion of the two translations and a three-hour final examination. The latter consisted of a lengthy essay on alpine tectonics written in French, in which were hidden numerous erroneous structural and stratigraphic statements. The first assignment was a direct translation into English, and the second was the correction of the erroneous statements and the restoration of the right geological significance. Dictionaries were allowed during the final examination.
The semester results were very encouraging; half of the class was in the A range and the other half in the B range. From a teaching point of view, the adopted method worked out well and the course was a fascinating and challenging experience, though quite hard to conduct in its initial phases because of the difficulties in terminology and the lack of previous experience in such bilingual lecturing.

From a student point of view, the course was considered extremely profitable after the initial hardships had been forgotten. It was interesting to notice that, after about four weeks, the students requested the gradual dropping of English, which in their own words was confusing them. This happened much earlier than had been anticipated by the instructor. The course will be repeated every other year and modified according to the results already obtained.