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Some Thoughts on the Societal Impact of Linguistics

Arto Mustajoki

"Not everything that counts can be counted, and not everything that can be counted counts."

—Albert Einstein (*attributed*)

Today, scholars are obliged to justify the necessity of research in their own fields. The purpose of this paper is to discuss the channels of societal impact of linguistic research. In other words, I will try to answer the following question: in what ways is the work of scholars dealing with language(s) useful for society? The paper is based on my articles published in Finnish (Mustajoki 2005, 2011) and on oral presentations in various academic circles. I will first discuss some general ideas concerning the societal impact of research and researchers. I will then try to apply these ideas to linguistics.

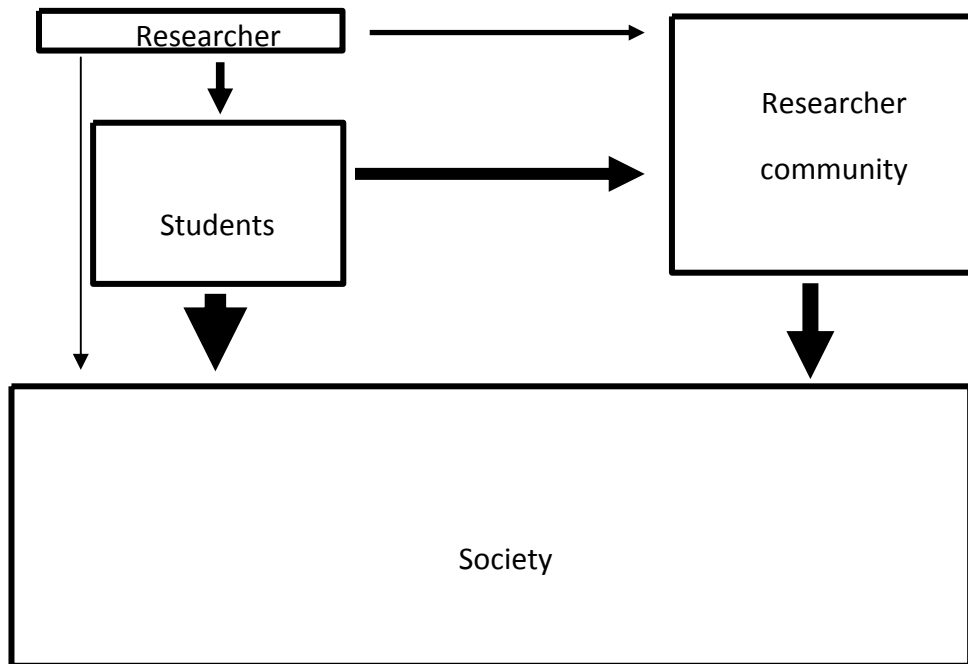
General Mechanism of Societal Impact of Research

Picture 1 shows the main ways in which the work of researchers makes an impact on society. The width of the arrows in the picture symbolizes the significance of the impact of the channel concerned.

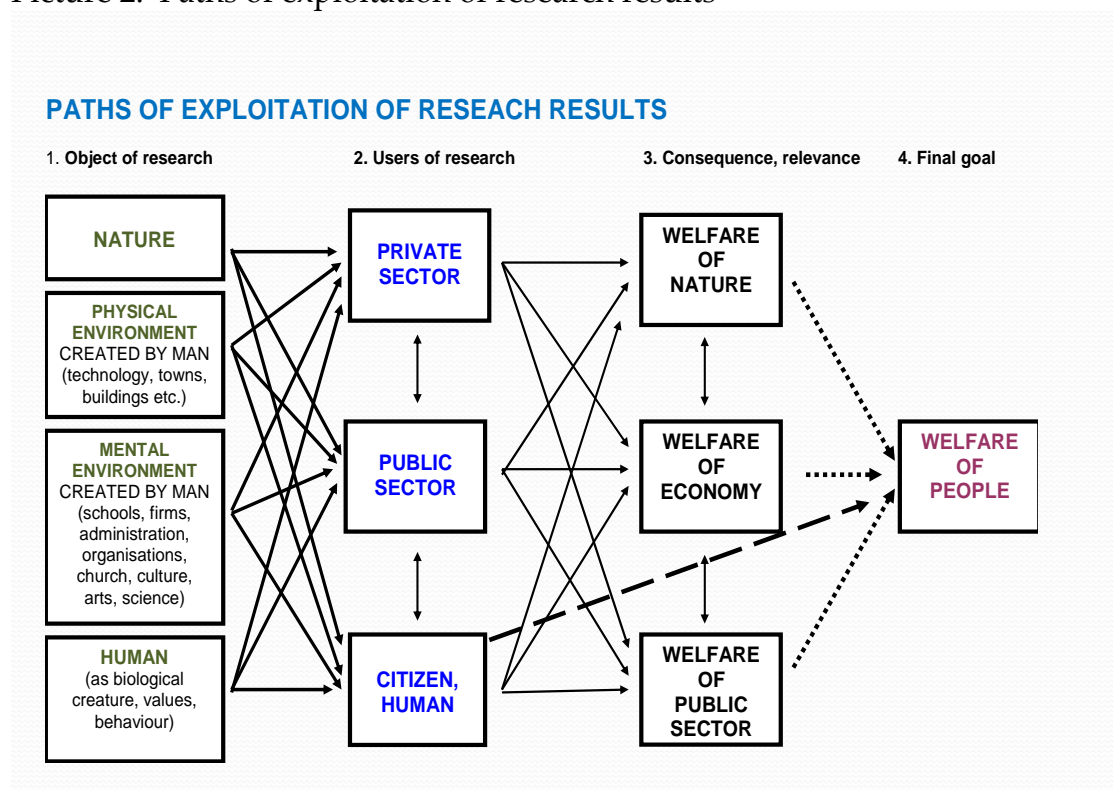
As the picture shows, the most important way in which university researchers can influence society is through their students, who, after graduation, work in various influential capacities in society. A researcher may also have direct influence on society by publishing books for a wider public and by writing newspaper or Wikipedia articles. (S)he may also act as a specialist by giving interviews, by taking part in committee work, and by maintaining personal contact with decision-makers. An active and prominent researcher has a certain influence on the development of global research in the field concerned. This is the very idea of scientific activity: through the joint efforts of scholars, research reaches new results and triumphs which can be used by society.

Picture 2 shows the complexity of societal impact of research. Some issues are important to highlight. First, the results of studies focusing on any of the four main objects of research (Nature, Physical environment, Mental environment, Human) are relevant from the point of view of all three major users: the private and public sectors and individual citizens. Second, all three actors contribute to the welfare of nature, the economy, and the public sector.

Picture 1: Channels of societal impact of research(ers)



Picture 2: Paths of exploitation of research results



Third, the final goal is not the welfare of the economy, of the public sector, or even of nature; it is the welfare of people. Influence does not go from left to right automatically, but needs active measures. In distributing the results of

research to their users, schools and other educational institutions are essential, as are the media.

I will now try to describe different categories of innovations and findings based on research. I will divide them into four types; in each case, some characteristics and examples are given.

1. Production-oriented findings and innovations

Definition: findings are made near to production; they are stimulated by observation of defects in the production process, or by the needs of end-users

Examples: a new model of bucket for an excavator; a new method of indexation; a new service concept for hotels; an updated teaching material distributed by Internet; a computer game

Societal impact: economic prosperity which enables users to “buy” welfare; direct influence on the quality of life

Other relevant factors and conditions: user-friendliness, attitudes of users, design, present trends, compatibility with other products, investment costs, market situation, adjustment to legislation

Time span to benefits: short (from months to some years)

Profits: from some thousands to millions (dollars or euros)

Possibility of measuring societal impact of research: partly possible (patents, earnings of the company, recruitment of employees)

2. Research-oriented findings and innovations

Definition: findings are made in research institutes or universities as a by-product of fundamental research

Examples: a new functional foodstuff; chemical which prolongs the use of an accumulator; a new method of disease diagnosis; a new method in speech recognition

Societal impact: as in 1

Other relevant factors and conditions: as in 1 + knowledge transfer from researchers to producers

Time span to benefits: usually rather long (several years)

Profits: may exceed tens and hundreds of millions

Possibility of measuring societal impact of research: as in 1, but due to the long way from research findings to production, it is difficult to show the significance of research in the final product

3. Impact of research on the work of the public sector

Definition: findings and research results are used in legislation and the everyday work of authorities at different levels of administration and the education system

Examples: prohibition of use of asbestos; restrictions on smoking; public campaign for physical exercise; a new method of teaching math; regulative measures influencing the market economy

Societal impact: better life for people

Other relevant factors and conditions: knowledge transfer from researchers to decision makers + public opinion, "political will", media, people's conservatism, rules of economy (may hinder business)

Time span to benefits: usually decades

Profits: huge indirect impact by savings in societal costs (may exceed billions) or substantial increase in people's knowledge and skills (in the case of education), which has enormous future impact on the way people act as citizens and employees

Possibility of measuring societal impact of research: scarcely possible in any reasonable way, due to the long time span and the fact that research can never be the only condition for implementing new findings and ideas

4. Research improves people's understanding of the world

Definition: new scientific knowledge expands and deepens people's world view: how nature works, how their own behaviour affects their health and well-being, how to identify the real causes and effects of different phenomena

Examples: understanding the basic mechanisms of the universe; knowledge on the impact of genes and the environment on the phenotype of living organisms (including humans); knowledge of basic natural phenomena and impact of different materials and regular habits on human well-being; objective knowledge of other cultures; understanding of the course of history

Societal impact: more objective and complete understanding of the world, which affects people's behaviour as individuals, decision-makers, and employees

Other relevant factors and conditions: as in 3

Time span to benefits: usually decades or generations

Profits: economic impact, as a rule, occurs as very small shifts in different places; as a whole, benefits are enormous

Possibility of measuring societal impact of research: the societal impact is not measurable in concrete terms, but this does not make it less important than other forms of impact

How Research Can Have an Impact on Mechanisms, and be Applied to Linguistics

Linguistics is quite a large branch of scientific research, and languages are one of the biggest educational fields. So we are dealing with a topic that is very important from the point of view of the needs of society. If we look at the

operation of society, the significance of languages becomes even more evident. Both our social life and work are based on interaction between people. Thus, even minor improvements in knowledge about language or in communication skills have a potentially enormous impact on the way society works.

The wide scope of “language research” may also be demonstrated by considering various disciplines within the humanities. We linguists tend to see ourselves as specialists in the study of texts, the realizations of language use. As a matter of fact, we are not the only researchers fishing in these waters: theologians study holy texts; specialists in jurisprudence compile and then interpret legal texts; scholars in literary studies analyse texts created by famous writers; and for historians, various texts are the main source for research. But in comparison with other scholars working in the humanities, linguists can be described as universalists: we study all kinds of texts.

As for the impact of linguists on society, the main channel is, as noted at the beginning of the article, their work as teachers. Usually linguists have a lot of students, who then work in different sectors of society: as teachers, as translators, or as specialists on a particular region in various organizations and enterprises. If they have gained good practical skills, if they understand the mechanism of the language concerned, and if they have a deep, multifaceted knowledge of that culture and society, they are of great benefit to their employers. If they work in the private sector, their work is an important element in profit-making; if in the public sector, they can help the authorities to make decisions that are beneficial to society.

Linguists who do not dedicate themselves exclusively to “pure” research see the possible uses of linguistic knowledge. Bearing that in mind, they take part in compiling dictionaries and textbooks for a wider public and thus make a direct impact on society (Category 1: Production-oriented findings and innovations). In this work they have to be aware of the needs of users; at the same time, they use the linguistic knowledge gathered by the scientific community. From the point view of end users, it is irrelevant whether the author of a textbook or dictionary uses the results of her/his own research or those obtained by other linguists.

Prominent linguists expand our knowledge on languages, on their structure and use, and on the universal features of languages. One cannot see any immediate practical benefit arising from research on, say, deixis, voice, and morphosyntax in Russian. However, this is exactly the way that fundamental research moves forward. Through the collective efforts of linguists, our knowledge of languages increases. Citations are an indicator of the use of a publication by other scholars. So, according to the *Publish or Perish* database based on *Google Scholar*, the article on *Deixis in embedded structures* by

Richard Brecht is cited 51 times. One of those is in RJU Boogaart's dissertation *Aspect and temporal ordering: A contrastive analysis of Dutch and English*, which has been cited 67 times. The chain continues: one of the citations is made by O. Boric in the book *Aspect and reference time* with 128 citations, etc. The scientific community evaluates and selects new data and observations on language, and on that basis, we can make more complete descriptions of languages in more concrete terms: more comprehensive grammars and dictionaries. They in turn can be used in compiling textbooks for language learners, both as a mother tongue and as a foreign language.

During the last few decades, scientific descriptions of languages have also found other applications in the automatic handling of texts: in creating spell checkers and translation engines, in data mining, in compiling semantic webs. During the last twenty years, we have seen fast development of the field but, as a whole, we are still taking only the first steps in turning out new products of this kind. Especially in speech recognition, the big success stories are still ahead. This is an example of Category 2 impact on society (Research oriented findings and innovations). One can only imagine the economic benefits of all these outcomes of research. Sometimes people in computer science think that they can produce effective language tools without the help of linguists, but as a rule, these trials fail.

As for the third category, the impact of research on the work of the public sector, practically oriented linguists play an important role in planning language policy and strategies of language education for the state or minority communities. Of course, a linguist will only take part in these processes if (s)he is interested in the sociolinguistic role of languages. But this is not enough in order to have an effect on these issues; the linguist also needs to have access to those rooms where these questions are discussed and solved. The final decisions are made by politicians, but the role of a researcher may also be significant. Here again the economic benefits are extensive, though they are very difficult to verify and measure.

How, then, can linguists influence people's understanding of the essence and use of languages? According to my observations, we linguists still have a lot of work to do here. Laymen's impressions of language are still rather blinkered and one-sided. Most people lack understanding of variation in language use and language command; many mechanisms of language use are unfamiliar to them.

The question which, to my mind, needs much more attention from linguists is that of communication problems in interaction between people. Insufficient mutual understanding is arguably one of the most serious problems in the world. Given that most human activities are somehow based on communication, success in interaction is of paramount importance. I think

that studying this problem in a more systematic way could multiply the societal relevance of linguistic research. There are, however, some obstacles in gaining that position. I will comment on them briefly.

There are linguists who think that communication and problems in it are not a topic for linguistic research. They are partially right: in studying human interaction, we must also take into account issues such as the psychological and sociological attributes of the communicants (abilities and motivation; behavioural and ideological features). Yet it would be unwise to leave research of (mis)communication only to psychologists and sociologists. To my mind, in investigating this very complex phenomenon, we can reach substantial results only through the joint efforts of researchers from different disciplines.

In discussing the problems of communication with representatives of other fields, I have met the following counter-argument: interaction between people is a unique event and it is therefore impossible to find any systematic features in it. This is a relevant claim. However, it is untenable when we take a closer look. For comparison, let us take another severe problem: cancer. People die from cancer, which is a good reason to make every possible effort to discover the mechanism behind this disease. Thousands of studies have shown that a great variety of factors can lead to cancer and that these factors function differently, depending on the individual. However, by careful and patient research, we have gradually acquired a better understanding of the nature of cancer. By using this new knowledge we are better able to prevent and cure some cancers. Cancer and communication failures are naturally problems of a different order of severity. But there are also similarities between them: in both cases we are dealing with a regrettable, but inherent and inescapable part of human life. With the help of research we are able to reduce the negative effects.

There is a great obstacle to the progress of studies on human interaction: due to the multidisciplinary nature of the problem, researchers work in total isolation. The lack of awareness among researchers can be shown by a single example: a substantial review with more than 200 references made by Berger (2005) is based on a completely different set of studies than another review of interpersonal communication with an equal number of references by Stamp (1999), and it is even more striking that the works of psycholinguists are missing in both of these reviews. In order to solve one of the most serious problems of the human race, troubles in human interaction, we need more awareness of studies conducted by other researchers. It is only in this way that research can be cumulative – a feature that is essential for a scientific approach to any topic of research.

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