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TECHNOLOGY AND THE WORLDS OF INTERPRETING

In 1935, Pavlov's introductory statement at the 15th International Congress of Physiology in Leningrad was interpreted simultaneously into French, English and German (Chernov 1992: 149). It may be argued that this use of the simultaneous interpretation technique was to have as great an impact on the world as did Pavlov's dogs.

The very first meeting at which simultaneous interpretation was used opened at 10:30 on the morning of Saturday, June 4, 1927, a session of the International Labour Conference in Geneva. Its use was calculated to have saved the ILO a total of £32,700.¹ Further use of the Hushaphone system occurred in 1929 at the Scientific Organization Committee (Geneva) and the International Chamber of Commerce (Amsterdam)

At ILO meetings in the 1920s, Boston businessman Filene, one of the employers' representatives, finding consecutive interpretation excessively time-consuming, had asked an ILO official to find some way of allowing delegates to listen to a "telephone translation" (Bourgain 1991: 18). IBM was approached, and Filene helped finance development work. Gordon Findlay, an IBM employee, invented a multi-channel system, which became known as the IBM Hushaphone Filene-Findlay system (Gaskin 1990: 43).

¹ See: Telephonic Interpretation - The System of the Future?, *L'Interprète*, Vol. 1, No. 5, (Aug./Sept. 1946), pp. 2-4. After the war the ILO used a simultaneous interpreting system in Geneva (Tusa 1984: 218). Bourgain gives 1926 as the year in which the Hushaphone was patented.

In the Soviet Union, the earliest use of simultaneous conference interpreting dates back to 1928, the 7th Comintern Congress. The interpreters, literally draped with clumsy contraptions over their shoulders to support the mastodon microphones of the time, sat in armchairs beneath the rostrum. They wore no headphones, instead listening directly to the sound (Hofmann 1963: 20). It was not until 1933 that the first booths and headphones appeared, at the 13th Plenary Meeting of the Comintern Congress (Chernov 1992: 149). Following the 1935 physiologists' conference, another attempt to use simultaneous interpretation was made in 1937 at the 17th International Congress of Geologists in Moscow.

The first recorded use of the system in Germany was in 1930, when the firm Siemens used it at the World Power Conference in Berlin (Koch 1992: 6, quoting Muzika 1957: 54). In 1931, a form of simultaneous translation was introduced at the League of Nations (Bourgain 1991: 18). Pretranslated speeches were read in various languages at the same time as the original was being delivered, with listeners selecting the channel corresponding to the language version to which they wished to listen (Gaskin 1990: 43).

Jean Herbert describes a personal experience in the early 1930s at a French-English ILO meeting in Belgium, with the interpreters straining to understand what came over loudspeakers and "whispering into a sort of box called a Hushaphone" (Herbert 1978: 7). The absence of booths and headphones for the interpreters added to the strain of interpreting.

Belgium, with its dual-language situation, quickly realized the advantages of the new system. Belgian trade unionists in the ILO ensured that the Belgian Trade Union Movement bought a Hushaphone system for its congresses on a national and an industrial level, such as the book industry, metallurgy, textiles, and so on. Also convinced, the

Belgian Labour Party borrowed the Trade Union Movement's system for the Socialist Party's congresses. In this way, French and Flemish speakers could be treated equally (Bourgain 1991: 18).

Some of the Belgian labor leaders were also members of the Belgian parliament, and in 1936 they managed to have the system introduced into the country's upper and lower houses. The system was known as "oral translation." In 1938 the Hushaphone system was used at Scheveningen in the Netherlands (Koch 1992: 6).

Eventually, these pre-war innovations led to the now widespread use of simultaneous interpreting. Like many developments in the pre-Second World War era, however, its dissemination was slow. Not until the 1945-46 Nuremberg International Military Tribunal (IMT) did its possibilities receive public attention. Until then, interpreting (the verbal rendering in one language of a statement spoken in another language at a formal or informal meeting or in a conference-like situation, according to the International Association of Conference Interpreters (AIIC: 1987)) had generally been a non-electronic and often virtuoso performance. Notes for consecutive renderings of lengthy speeches are said, perhaps not entirely apocryphally, to have been written on the back of a postage stamp. Memory was a crucial factor. Technology was not.

Without the system of electronic equipment (made available free of charge by IBM) for the simultaneous "broadcasting" of different language versions, the Nuremberg trials could not have taken place at all. Since most of the judges at the IMT proceedings had no language in common, they were forced to rely on the interpretation not only to follow testimony, but also to understand each other. A special room was set up in the courthouse where the judges could meet in private to consider requests by the prosecution and defence. Alfred Steer, administrative head of the language division in Nuremberg, reports that a special miniature

simultaneous system was set up in a small room in order to provide interpretation for the judges. Much use was made of this facility, which was staffed by particularly gifted and discreet interpreters (Gaskin 1990: 87).

By modern standards, the physical conditions for the provision of interpreting services at Nuremberg were primitive. The courtroom was full of trailing wires. The booths were tiny, and were not soundproof - indeed, they were open at the top and back. Other aspects of interpreting at the IMT reflect the almost experimental use of the simultaneous mode. Practically none of the interpreters had experience in the new technique. It was assumed, rightly, that speakers' speed of delivery would be a major factor in determining the feasibility of the exercise. The figure of 60 words a minute was chosen as the "speed limit." While speed in the booth, as on the roads, can kill, this was taking things too far, although given the lack of experience with the technique, it was an understandable assumption. Today, a rate of delivery of 100-120 words per minute is normally acceptable (Jumpelt: 82). At this speed, an individual interpreter actively processes the equivalent of somewhere between 56 and 90 typewritten pages a day (Jumpelt 1985: 83, referring to Seleskovitch (1968)).

The technical set-up at Nuremberg was a far cry from the standards set today by AIIC and ISO. The facilities included two features not normally found in today's installations. The red button triggered a "stop" sign, which signalled the Presiding Judge to bring the proceedings to a temporary halt, if an interpreter had to be unexpectedly replaced or was having a coughing fit. The yellow button gave a "slow down" signal (Gaskin 1990: 38).

It is no exaggeration to say that without simultaneous interpretation, the Nuremberg war-crimes trials could never have been held. After the

trial started, Hermann Goering was overheard to say, prophetically, "This system is very efficient, but it will also shorten my life!" (Ramler 1988: 438). The twelve Nuremberg trials that followed the IMT proceedings were held in German and English only.

If the technology was somewhat primitive, the quality-control arrangements at Nuremberg were on a high level. The first head of the interpreting team, Eisenhower's personal interpreter and professor Colonel Dostert, held tests for potential interpreters, first in the United States and later in Paris and London (Koch 1992:2). Alfred Steer scoured Europe for potential simultaneous interpreters (Gaskin 1990: 39). In the end, 36 interpreters were recruited before the first trial began. Hasty training was carried out before the proceedings opened by holding mock trials. As the proceedings went on, a team of reviewers checked the shorthand record in each language for accuracy (Gaskin 1990: 39). Glossaries of legal terms were compiled. For each language, a monitor constantly vetted each interpreter's performance, using a pair of dual-challenge headphones where the original language could be heard in one ear and the interpretation in the other (Gaskin 1990: 43). Back-up teams of interpreters sitting in the radio room next to the courtroom listened to the proceedings through headphones (Gaskin 1990: 38, 45). The entire team was changed every 90 minutes.

In contrast to the meticulous planning and implementation of language services at Nuremberg, the arrangements and caliber of the interpretation services at the extended 1946-1948 Tokyo International Tribunal were at a far lower level, and the outcome on the whole less fatal for the defendants (Harries 1987). Some of the difficulties were a result of the differences between the Japanese and English mindset (see Katagiri 1988); some were caused by the absence of individuals fluent in both languages; some resulted from the particularly great difficulties of

rendering Japanese into English (see Wakabayashi 1991, Uchiyama 1991). A Japanese government official involved in post-war liaison work between the Japanese and Americans describes how at the time the local interpreters entirely rejected any possibility of providing Japanese-English simultaneous interpretation into English, because of the almost entirely reverse word order. Thus interpretation at the international war crimes tribunal was almost entirely consecutive. Only when a prepared text was translated and provided to the interpreters was there a form of simultaneous interpretation, as there had been in the League of Nations from 1931 onwards (Nishiyama 1988).

Some 40 years later, Gile (1988) has analyzed Westerners' persisting difficulties in learning Japanese well enough to practice conference interpreting from it (see also Chin and Obana 1988). On the other hand, Japanese interpreters have learned to interpret simultaneously to great effect. Indeed, the simultaneously interpreted Japanese telecasts of the Apollo missions to the moon may be considered a historic landmark in the advancement and awareness of simultaneous interpretation in Japan (Nishiyama 1988).

The technology that was introduced at Nuremberg did not immediately conquer the international conference world. In fact, the fledgling United Nations were suspicious of the newcomer. At the 1946 Paris Conference (where the peace treaties with Italy, Rumania, Bulgaria, Hungary and Finland were drawn up and finalized), all the proceedings were held in consecutive in English, French and Russian, on both the plenary and committee levels. However, at the second part of the first session of the General Assembly, held at Lake Success, Long Island, in September 1946, the former head of the Nuremberg interpreters, Colonel Dostert, had two rooms equipped with booths (Cru 1992: 21-22).

Pressure for change had come from the grassroots, in the form of a Ukrainian Bolshevik called Manouilsky who drew attention to the use of simultaneous interpretation at Nuremberg, and called for observers to be sent there to see how the system worked with an eye to adopting it for the UN. His proposal was approved unanimously. Hedging its bets, for a while the new organization chose to have its meetings interpreted both simultaneously *and* consecutively (Herbert 1978:8). At the time some interpreters were still arguing that a speech could only be well interpreted after it had been heard in full and its logical structure understood. Disdainfully, they called the practitioners of simultaneous interpretation "telephone interpreters" (Cru 1992: 22). In 1947 the UN, holding its General Assembly at Flushing Meadows, asked all its interpreters to ensure that they were skilled in both techniques (Thorgevsky 1992: 33). Finally convinced of the new technique's worth, the United Nations eventually opted for simultaneous as its standard mode of interpretation.

Half a century after Nuremberg, international meetings now take for granted the provision of instant "language-switching" in multiple languages. Without the technology that allows simultaneous interpretation to be provided, the overwhelming majority of today's multilingual international meetings would be out of the question. Consecutive interpretation, although still taught by the most prestigious interpreting schools, is largely a thing of the past. Even after-dinner speeches are often rendered in the simultaneous mode. It is almost no exaggeration to say that without technology, there is no conference interpreting.

Ironically, though, technology has made very few breakthroughs in the very field where simultaneous interpreting made its premiere - legal proceedings. In this respect, major exceptions are constituted by the 1961 Eichmann trial and the 1987-1988 Demjanjuk trial, both held in

Jerusalem, Israel. At both of these trials a range of interpreting techniques was applied, including consecutive, simultaneous and whispering. In contrast, the overwhelming majority of legal proceedings throughout the world where interpretation is required are conducted without any use whatsoever of technology for the provision of interpreting. Full consecutive interpreting lengthens proceedings inordinately, thereby increasing court costs. In an attitude reflecting suspicion of the untrustworthy foreigner, consecutive interpretation is also said to give some linguistically competent witnesses an advantage, since the repetition of the question twice gives them extra time to prepare their answer.

Bilingual judges in Canada have commented on other, more pertinent, drawbacks of the consecutive mode. For example, Manitoba Chief Justice Monnin has said: "This back-to-back translation is slow, tedious, tiresome and does not allow for an uninterrupted cross-examination which is so vital to the proper conduct of a trial" (*Robin v. Collège de St-Boniface* (1984) 15 D.L.R. (4th) 198 at 208-209).

Today in some courts in the United States, increasing use is being made of technology, whether by the authorities or by individual interpreters, in order to improve efficiency. The use of mini amplifiers, lapel microphones, and headphones enables interpreters to be more readily heard by their clients, particularly where more than one individual requires assistance. Similarly, the use of amplification allows interpreters to hear more clearly, reducing strain and improving quality.

Despite the major advances that computers have brought about in the world of written translation, the human element is still very much present. Machine translation, expected in the fifties to be attained within a short span of time, remains a goal which seems to recede as fast as progress is achieved in other spheres. Human post-editing is still an

indispensable part of the process of achieving readable, accurate translations. Only in the case of specific language pairs and carefully controlled use of language (such as in the area of French/English weather forecasts in the Canadian context) can machine translation be considered to be at all practicable at this stage. Yet word processing, computerized glossaries and communications software have changed practically every translator's life out of all recognition in as little as ten years.

In one sense, technology came to the world of interpretation much earlier than to translation. Even if seated in a soundproof booth, listening through headphones and speaking over a microphone, in 1995 interpreters are far closer to their counterparts of 60 years ago than are their translator colleagues. The technology used to relay sound today may be infra-red, and state-of-the-art transistors and chips may have replaced the valves and other components of yesteryear, but the interpreter's work as such has been very little affected by recent technological advances. Data banks, CD-ROMs and other terminological aids may assist in preparing a meeting, but essentially the same dilemmas and challenges remain. The interpreter must still instantly produce a version of as high a caliber as possible, even when speakers' output is excessively fast, sometimes inaudible, uses terms and concepts which are unfamiliar to the interpreter and at times delivered in regional accents or including substandard usage. Technology cannot solve any of these problems. Indeed, the "slow-down" button of the Nuremberg setting has long since become obsolete in today's high-speed interpreting world, where the human element is largely ignored by clients.

Although the essence of interpreters' work has not changed, technology has clearly impacted on their performance. The original Hushaphone system provided earphones for delegates only. The addition

of headphones for interpreters and booths, particularly enclosed soundproof ones, enables interpreters to concentrate more, with less interference by outside stimuli including their own voices. Such technological innovations reduce the strain on interpreters and concomitantly increase the ability to produce quality output.

Like early automobiles, the original cramped, open-topped booths have given way on the whole to more spacious, soundproofed and air-conditioned installations which are the subject of international standards (Jumpelt 1985). In the conference room and the booth alike, trailing wires have been replaced with safer, more reliable, sometimes almost entirely unwired setups. Even temporary installations can achieve high standards of sound reproduction for both delegates and interpreters. Delegates can receive interpretation via a compact portable receiver that they can wear around their necks. The story - not apocryphal - is told of a delegate who genuinely believed that such a receiver was an independent interpreting unit and enquired where he could buy such a device.

In today's world, interpreters may not even be present in the same room as delegates. Although not normally desirable, booths may be situated outside the conference room, as long as interpreters can see speakers clearly on closed-circuit television screens. Taking this principle further, remote or tele-conferencing can be serviced by interpreters located in a different location from the meeting, as long as video links are provided to give interpreters an adequate picture of the proceedings. Documents can be made available by modem and high-speed printer, or by fax.

In an extreme application of technological possibilities, in an emergency interpretation can be provided via a telephone link, whether video (preferably when picture quality is improved) or audio. Using conference call technology, for example, an interpreter in one location

may assist in a conversation between a prisoner and a probation officer in a second and perhaps third location. In a police station setting, interpretation which is urgently required (for example, in order to comply with procedures concerning suspects' rights) may be provided by telephone if there is no practical way for a competent interpreter in the appropriate language to be available in person. Such arrangements should, however, always be considered a stop-gap or "first aid" option.

The world of community interpreters - normally defined as those who work in public service settings, such as health care, the education system, the social services and the legal system - is generally very far removed from the high-pressure, multilingual, high-budget world of conference interpreting. In the public-services context, the norm is always a form of interpreting which does not involve technology. However, even in this area technology can assist.

The work of community interpreters and translators is extremely important in ensuring equality of access to public services. The material is often extremely important to both service providers and their clients, The professional terminology is often highly specific to a given culture and field, making it difficult to convey in the various target languages across what may be a major cultural barrier. A fairly high degree of standardization of terms is desirable within individual languages.

As in all areas of interpreting, community interpreters need to be familiar with the material with which they will be dealing. Even though non-technological methods of interpreting are used, technology can assist greatly on the level of preparation. Electronic means can be vital in searching for and accessing background documents and other reference material in the two languages involved. Contact can be established with language and other professionals in order to clarify issues.

Moreover, in all areas of community language services, more efficient use can be made of scarce resources by pooling translation output and efforts. Currently different local authorities often translate the same centrally produced original-language document innumerable times and with varying quality into a given language. A viable alternative is for a single high-caliber target-language version to be produced by means of drafting and then polishing through multiple input. It would then be accessible to all using file transfer over the Internet. Similarly, the quality of translations of specifically local material can be enhanced if translators and editors can consult glossaries and other reference works over the Internet.

Remote conferencing by means of electronic mail discussion groups over the Internet, once thought to be the prerogative of a small select group of individuals, is now rapidly becoming a feasible option for many organizations and individuals worldwide. Language professionals' queries about terms (such as "what does a four-piece bathroom include in Canada?") are often answered within a short space of time on discussion groups such as LANTRA-L. Professional issues can be shared and discussed. For example, on TERPS-L, the sign-language interpreters' discussion group, a typical day's mail may include job openings, professional status issues, dilemmas in conveying English idioms in sign language, dealing with negative client reactions, maintaining signing skills, a discourse analysis-based approach to teaching sign language interpreting, and so on.

In times past, the numbers of those who could hear an interpreter's performance was finite, limited in an absolute sense by acoustics, regardless of whether the technique used was consecutive or a whispered "instantaneous" version. It was rare for more than one interpreted language version to be provided at any one time. Today,

individuals can tune into almost unlimited numbers of interpreted versions of an original utterance at the same time as it is being given. Telecasts of moon-landings (Nishiyama 1988) have been simultaneously interpreted. An interpreted version of war-crimes proceedings has been broadcast round the world (Morris 1989).

Today, it is not unusual at international meetings for four or even five interpreters sit in the soundproofed comfort of a large booth, between them rendering 12 source languages into a single target language. They listen to the original through lightweight headphones. An automatic volume control protects their hearing. Airconditioning provides an even temperature. Each interpreter has a state-of-the-art microphone. At the flick of a switch they can tune into any of the other booths.

Yet despite these technological advances, the human element in interpreting remains primordial. Recent advances in voice recognition and synthesis, although useful in a wide range of fields, have brought technology no closer to replacing the human interpreter. Opinions differ about how close the goal of machine-assisted translation really is. The crucial difference between written translation and oral interpretation, however, is that human post-editing is always possible in the written exercise. In the area of simultaneous interpretation, the very instantaneity characteristic of its performance makes such post-editing an impossibility. Technology can modify the modalities of the interpretation exercise. Other than in the realms of science fiction and advertising, it cannot eliminate the human element.

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