

Scientific translation in languages of lesser diffusion and the process of normalisation

Seosamh O'Murchu

Assistant Editor, *An Gúm*, Publications Branch of the Department of Education, Dublin, Ireland.

I will be concentrating in this lecture primarily on the Irish language and the particular circumstances affecting this language in the context of the lecture's title —scientific translation in languages of lesser diffusion and the process of normalisation. The reason for this is simply because it is in the area of scientific material in Irish that most of my professional work is based. My knowledge of similar areas of work in other minority languages is limited and cursory. Therefore it is possible that those of you with far greater experience of languages of lesser diffusion than me may find some similarities between what I will have to say in the Irish context and what you already know to be the case in other languages. I'm sure there may be considerable differences to be noted as well. It is for this reason that I feel that the idea of «the process of normalisation» will have different emphases and implications for different languages and may indeed mean completely different things to people with different priorities and orientation, be these of a political, cultural or educational nature.

«Normalisation» is an extremely subjective concept which will be continually redefined according to the political, social, economic and cultural forces acting on it and by those forces which find themselves dominant in any society at any particular time. «Normalisation» in terms of a «minority» language, or a «language of lesser

diffusion», —and I realise those terms are not entirely synonymous— will be closely linked to how the group of people who speak that language view themselves as part of a linguistic grouping within a larger more linguistically diverse community. The degree of linguistic consciousness of this group will also be important in determining what, for themselves as an identifiable group, will be perceived as «normalisation». It is obvious then that linguistic consciousness and identity and, therefore, the concept of «normalisation» itself, will be moulded and influenced by the historical. History will very often be the arbiter of what the linguistic grouping sees as its frame of reference for normalisation as well as what the wider community sees as being meant by normalisation in relation to the linguistic minority. All of those factors will be particularly relevant to the area of scientific knowledge and therefore to its rendering into any language. Because science is a pure form of knowledge and in this respect can be described as being apolitical or asocial, the way it is rendered in any language and the way in which it will be received will be almost completely dependent on the social, political and historical well-being of that language. Poetry and literature are much better equipped, I feel, to engage the historical legacy of a language and they do this at a much more fundamental level, incorporating it into their subject matter and therefore rendering it much more tangible to deal with for those «receiving» it.

The historical dimension of language is very important then, I believe, and in the case of the Irish language it is indeed crucial. So that we will better be able to understand the difficulties encountered by the Irish language in scientific translation, with which I will deal later, it is firstly necessary, I feel, to provide you with a short account of the historical, and therefore political, social and economic context in which the Irish language finds itself.

After ongoing and everintensified attempts, the political colonisation of Ireland by England was successfully and finally achieved in the early 17th century. Various degrees of success had been achieved in the preceding 500 years but it wasn't until the old Gaelic order was

finally defeated at the Battle of Kinsale in 1601 and the native population almost completely dispossessed of their lands in the succeeding campaigns and «Plantations», most notably the Cromwellian plantation of the 1650s, that the full legacy of colonisation was unleashed. This unleashing went into areas much deeper than political institutions or structures but began to permeate the cultural, social and, above all, the psychological condition of the Irish people. Nowhere has this been better illustrated than by the rapid decline of the Irish language in the following centuries. Up until then there had been a strong literary and intellectual structure in place which regulated and sustained the linguistic supremacy of Irish over almost all the country. The exception being the immediate «Pale» area around Dublin and an area in the southeast of the country which had been successfully «planted» at an earlier date.

Throughout the period leading up to the 17th century the Irish language had been absorbing influences and words and emphases from other languages. From the 6th century the influence was mainly Latin due to the strong monastic and ecclesiastic tradition which grew up in Ireland. In the 12th and the 13th centuries the Norman invasions led to a certain French influence on the language and then in the 15th and 16th centuries English was the main foreign tongue to leave an impact on the language. These influences however had been absorbed and integrated into the language without posing any threat to the existence or supremacy of Irish as the language of the people. Indeed this will be the case with any language whose position is strong and whose use extends across a broad range of areas and events in peoples' lives. A prime example of this is the way in which English is spoken in many different parts of the world and has succeeded in absorbing many national and international influences, has undergone many changes and yet is probably in a stronger position today than at any time before.

The fact that cultural, educational and political institutions existed in which Irish was the primary language in use ensured the language remained in a strong position. An example of this was the

Bardic order which controlled a rigid system of instruction whereby poets were educated in the writing of syllabic verse, in different metres, some of them extremely complex. Each poet had to achieve a degree of competence and had to pass through seven stages before reaching the highest position among his peers. Such a strict order was central to the wider Gaelic political order and many poets were maintained by local chiefs for whom they composed laudatory verses or, on occasion, if the chiefs weren't generous enough in their maintenance, they severely satirised. The interesting thing about this Bardic order from a linguistic point of view is that it maintained through poetry a strictly standardised language from the middle 12th century to the late 16th and early 17th centuries. We therefore find poems written in the early 13th century for instance which are identical in language and grammar and metre to those written in the late 1550's. It is worth noting also that few examples of regional variations exist in this poetry whose territory extended from the very southern part of the island of Ireland right up to the north of Scotland whose language today, Gàidhlig, is of course closely related to modern Irish. The other types of poetry being composed during this period —the Fenian lays and those stories we have from the great heroic cycles, being passed on in a more populist deregulated manner, display all the changes and developments which one would expect to take place in a language over a time-span of a couple of hundred years. But the Bardic order, being intrinsically linked to a strong Gaelic establishment, maintained the psychological moral and confidence of the language throughout this period. When the Bardic order disintegrated as a result of the successful completion of political colonisation in the early 17th century this psychological confidence also rapidly began to disintegrate. [It was in the 17th and 18th centuries that some of the best poetry we have in Irish was written —this poetry was intensely political in nature and suffused with anger and pain and a sense of loss and it constantly mourned the passing of the old Gaelic order. It was written by poets who were now destitute and treated as outcasts by a foreign power, poets whose forbears had held great positions of influence and power and whose craft was held in high esteem. It is in some of this poetry

that we find declamatory references to the incursion of English into the lives of the people and to those who spoke it also, those who entertained «the uncouth ghost of English» as one poet described it.]

By virtue of political and legal suppression as well as due to the shift in wealth from a native Gaelic ascendancy to a foreign English one, English became the language of administration, of law enforcement, of the courts and most importantly of all perhaps, became increasingly used by the merchant class. As a colony of England, Ireland's resources were geared exclusively to supply the needs of the English market —therefore potential indigenous industry and initiative were suppressed, competition with markets in England was not allowed at all or was certainly suppressed. The Irish economy particularly in the 18th and 19th centuries was a subservient economy providing essential raw materials for the burgeoning industrial revolution which was sweeping Britain and the rest of Europe. Only in the northeastern part of Ireland where an indigenous flax and linen industry were developed did the Industrial revolution take root in any form in Ireland.

Though a majority of the population still spoke Irish as a native language by the middle of the 19th century the signs were very ominous, the psychological blow of not having any institutional establishment to sustain the language was one from which the nation fully recovered. The one possible institution which could have fulfilled this role, the Catholic Church, swiftly abandoned any sense of responsibility to the language as soon as it was offered the opportunity of partaking in a limited way in the new ascendancy. The National Seminary founded in 1796 was exclusively an English institution and was purposely designed as such by the coloniser in order to bring the population to abandon Irish, which as their native language was a major weapon of opposition and revolution, through the powerful influence of their priests who, for the first time in centuries were legally allowed to train at home and administer their flock openly — in English. Alongside the economic subservience mentioned above these were powerful factors in the decline of Irish in the 19th century.

Then disaster struck in the form of the Great famine in the 1840s when over a million people died and many more were forced to emigrate on the infamous «coffin ships». The successive failure of the potato crop, the staple diet of the majority of the poor native population was the initial cause of the disaster but the subsequent role of the British government in failing to provide meaningful assistance to starving people while the country was rich in grain, dairy and meat products and root crops is a classic example of imperialist colonisation and underdevelopment at work, a process we can still see in operation today in the countries of the Third World. In many respects the Great Famine was the final death knell for the Irish language in many parts of the country. The population of the country was more than halved in the space of twenty years, those who were left in abject poverty and demoralisation saw only despair and failure in anything to do with their own native experience. The only way out was to emigrate and any progress to be made at home was to be made through English. The establishment of the National school system in the 1830s in which English was the sole medium of instruction and pupils were punished for speaking Irish—though many of them didn't have a word of English—only served to consolidate what was already a growing inferiority complex regarding native culture and tradition.

Thus English became the established language of the market and of business and administration. The Irish language instead became increasingly the language of rural communities and generally began to be pushed ever farther westward—the anglicising wave moving across the country generally in an east-west direction from the fertile land of the east and its more industrialised commercial urban areas to the rugged and beautiful western shore whose communities primarily sought out an existence from a mixture of farming and fishing. Both these ways of life are still very important to the people living in the west of Ireland today where the greatest concentration of native Irish speakers still live.

By the time the nationalist cultural and political revival in Ireland got underway in the late 19th century the debilitating effects of colonialism had already taken place. Though many people began to learn the language during this period and organisations were set up with the aim of reviving the language —most notably *Conradh na Gaeilge* in 1893, which still exists as the largest voluntary Irish language organisation in the country— the political movement which was gaining momentum at the time was to a considerable degree led by people for whom the language was not an essential weapon in their armoury of revolution. There are a number of notable exceptions to this, principally Pádraic Pearse, one of the leaders of the 1916 rebellion in Dublin whose writing on the Irish language and on education was most enlightened and who recognised the need to develop the language in a modern context capable of adapting to all the latest innovations of a rapidly changing world. Pearse himself was an exemplar of this both as a teacher and as a writer. Both Pearse and Douglas Hyde recognised and openly pointed out the effects of colonialism on people's mentality and pointed to the position of the Irish language as a supreme example of this. They were, however, exceptional in this and though many other political leaders at the time openly encouraged people to learn Irish and many did so themselves, it was very often for its symbolic importance as being anti-English that it was encouraged. The language often came to be used as a tactic of opposition to English rule rather than a well thought out and fundamental part of a revolutionary ideology. This symbolic use of the Irish language, alas, was to gain in importance in the next number of years and hung like a noose around its neck. The ruling political ideology which gained dominance after Independence had been won for 26 of the 32 counties of Ireland in 1921, was essentially a bourgeois nationalist one. Within this ideology Irish was seen as symbolically important as a badge of Irishness, hence it was made compulsory for entry into the civil service and taught in all schools primary and secondary; it was, and still is, necessary for entry into the national university. However Irish wasn't the only thing to be invoked by the new state as an identifying symbol —fatally linked with it were the sym-

bols of Catholicism and «Gaelicism» all things Gaelic— games, music, pastimes etc. These came to be regarded as a connected set of images describing the new Irish state but as economic reality hit home and emigration and unemployment increased they became more and more remote as tangible means for people to achieve material liberation. Only the Catholic church maintained its influence throughout and as we have seen this influence was not benign towards the Irish language. Therefore though a proficiency in the language was legally necessary to gain employment in the public service and though it was taught in schools and, in 1937, given constitutional recognition as the first official language, because the political will of the ruling class was not geared towards putting the language on an equal footing with English in terms of material wealth, the decline initiated by colonialism continued into the post-colonial era and to some extent intensified because the English were no longer there to blame. Therefore, though individuals and organisations did their best to revive Irish many found themselves invoking the slogans of anti-Englishness (and what bordered generally on xenophobia in this) as reasons for its revival—in many cases they had no option due to the lack of any materialist context in which to promote the language— it was, and still is, difficult to answer the taunt that «Irish won't put bread on the table».

Prescribed Irish textbooks used in schools did, and still do in many cases, portray the world of Irish speakers as one related solely to the hardships of seeking out a living on rocky soil and dangerous seas where the modern world of new inventions and technology doesn't exist or is seen as something alien. The vocabulary of these texts and therefore that which is/was required for success in examinations is almost exclusively that of the sea or the farm. The perception of the language, even among those learning it, as limited and rurally based was therefore reinforced. A good example of how legislating for the use of a language is meaningless if the political and administrative will and back-up isn't there to enforce and develop that legislation is that the text prescribed for the Irish examination which those seeking to qualify as a lawyer must pass, is one concerned with the way of life

of a farmer and fisherman who lived on a small island at the beginning of the century —itself a classic of folk literature but hardly of much practical use to those defending a civil law case in the high court. This requirement like many others becomes a mere token as a result of no real effort to implement it and does more to ridicule the language than to promote it.

We are left then, in attempting to deal with all the complexities of the modern world with a colonial legacy, which has intensified in the postcolonial period, of extremely deep-rooted and negative perception of the ability of the Irish language to deal with these complexities. Despite the fact that as many people who use Irish as their daily language live now in urban areas as do in rural areas this is still a big problem, though things are beginning to change slowly.

One of the major reasons for the problem was/is the failure to deal with it among those communities where Irish was/is the native language. In an effort to better the standard of living of these communities the government set up an industrial development body to encourage investment in these Gaeltacht areas. Multi-national manufacturing and technological companies were enticed by grants to establish outlets in these areas. This was of course a welcome source of employment for the people of these regions. However in many cases people had to be taught how to use new equipment and machinery and how to operate new technology. This was invariably done by bringing people in from outside the area who knew no Irish to instruct native Irish speakers in running and maintaining industries enabling them to live and work at home—all through the medium of English. The opportunity of educational opportunities for people in the Gaeltacht to acquire skills and highly developed technological knowledge through Irish was extremely limited. Science courses in one university in the west of Ireland are offered bilingually in Irish and English but with increasing unemployment and emigration from the area coupled with almost complete absence of university texts in Irish the demand has fallen off considerably for courses taught through Irish, despite grant incentives.

The effect of this among native speakers of the language in their own community is to produce a selective diglossia whereby certain subjects are discussed in Irish and often other topics related to matters technological or industrial are dealt with in English. A variation of this and probably a more common occurrence is that the Irish language itself as spoken in native communities, groaning under the strain of competition with English, has become infused with English idioms and when it comes to talking about anything connected with technology or industry or commerce even, invariably, I would say, English terminology is used. The fact that Irish terms exist in these subjects hasn't really had any impact on them firstly because of the absence, as I have already pointed out, of any framework within those communities themselves to propagate new terminology in a way that would have any direct impact on people's daily lives i.e. by ensuring that all instruction and work done in any industry based in the Gaeltacht be through Irish. Secondly the lack of impact of the Irish terminology is because it is often viewed as something provided by civil servants in Dublin and therefore could have no bearing on the circumstances of native speakers and is seen as unnatural and clumsy. It must be said that people in these areas have had very bad experiences of civil service Irish, not all the fault of the civil servants, but again related to the absence of identifiable context and jargon in Irish in certain areas such as technology and law, the preserves of the Establishment. Many instances have been recorded of people in Gaeltacht areas returning official forms in Irish and asking for the English version. This has also developed a deep distrust of attempts to standardise the written language.

On the other hand one sometimes finds difficulties among teachers of Irish in accepting new Irish terminology and experiencing problems in applying it in the classroom. There are, I believe, two reasons for this, one I have already mentioned and it is the perception of the language subconsciously inculcated, even in those favourably disposed towards it, of it not really having a role to play in the world they find themselves. Yet they nevertheless for various reasons, political, cultural, romantic or otherwise, feel the language important.

This leads people to take a «preservationist» outlook on the language rather than a «developmental» outlook—for them the language must be preserved in all its purity and naturalness akin to a valuable family heirloom, wonderful to speak and immerse oneself in but not really having any practical or essential role in going about one's everyday life. This idea refuses to see a role for the language initiated by, and stemming from, an urbanised «high-tech», modern environment if it has not firstly come through the spiritual cleanser of the Gaeltacht and thus gained authority. Because of this we come upon the second reason for the acquired Irish speaker's difficulties with new terminology. This is that most middle class learners if Irish will have spent long periods in the Gaeltacht learning the language and will therefore have quite rightly, a respect and reverence for the language as spoken by native speakers. But as we have already seen native Irish as spoken in the Gaeltacht in many cases of dealing with matters scientific or technological or commercial has imported in its entirety English terminology. The learner will often then feel self-conscious and «unnatural», inauthentic using words which he/she has learned from a book or dictionary and which they have never heard being used by native speakers. It is very difficult to deal with this problem which is essentially a «catch 22» situation. I find myself constantly trying to impress on people the importance and necessity of developing the Irish language in all areas of discourse, including the most complex scientific area, if it has any chance of surviving, that preservation of the language as an end in itself will actually help to kill it because such an approach will merely perpetuate the negative, backward associations people often make with the language. I feel there is a great gap to be bridged here between the native speaker and those outside the Gaeltacht communities who speak Irish—it is a gap of understanding about each other. The unconscious speakers of a native tongue on the one hand and those on the other for whom Irish is not their native tongue but who have made a conscious decision for whatever reason to learn and speak Irish. I believe this problem is essentially a political one and its resolution lies in the raising of the political consciousness of both groups of people and indeed of the wider com-

munity to the historical reasons as I have outlined here for the «problems of normalisation» experienced by the Irish language and the very real materialist, sociological and cultural needs of communities in developing their language. Of course the implications of all this being the necessity of those invested with the authority —political authority as opposed to any woolly notions of moral or intellectual authority— and the responsibility of servicing these communities, in this case the Irish Government and, increasingly, the E.C., to make every possible means and resource available to allow these communities and their language fully develop. Otherwise all the posturing and mouthing about cultural diversities and equitable interactions between different traditions and languages and any amount of cultural institutes for «languages of lesser diffusion» will mean nothing —if we really want to save languages from extinction we must address the forces which are propelling them towards extinction. Invariably these forces will be market-led and economic which in turn will be underscored by political ideology. We must always bear this in mind in discussing the role of language in such concepts as the «process of normalisation». Everything is marketable in these days of mass communication and mass accessibility within a market thrives on the availability of diversity within a homogenous system governed by its own rules and I'm afraid that linguistic diversity falls outside these rules. Therefore the dynamic of market forces will mitigate to destroy it.

It is the single most dramatic failure of the Irish government not to have devised a language policy at which such an understanding of linguistic survival was at its centre. Instead thousands of Irish punts, and now ECUs, are being spent promoting Irish through trendy, superficial advertising campaigns trying to appeal to some latent postmodern atavism rather than to a much more relevant and immediate function of language in terms of people's place in society, in its economic, psychological and sociological manifestations.

Despite all this there has been a resurgence of interest in Irish in urban and often working class areas in particular. Now all Irish Kin-

dergarten and primary schools are being opened all the time and these often have to overcome all sorts of financial, bureaucratic and ecclesiastic difficulties to remain open—but they do and this fact is a credit to the parents and teachers and pupils themselves solely and to no one else. This resurgence I believe is, unlike the trendy official advertising campaigns, related to people's recognition of linguistic security and identity and its relevance to economic and intellectual security and independence. The resilience of people shown in the all-Irish school movement proves that it is not a mere fad or passing novelty. Indeed the language for many of these people, particularly in working class and socially underprivileged areas, takes on an often revolutionary role, being seen as something liberating, a living alternative to the moribund and stifling language of officialdom and of the general hypocrisy of the overwhelmingly middle-class system that they have to deal with. The significant thing in the context of this talk is that the people involved in these schools show a great eagerness to embrace and use new terminology and words. There are no hang-ups to be found among them about purity of language as previously spoken in the Gaeltacht—many of them would never have been there. They express a heartfelt desire to speak an urban tongue relative to their own lives. And though the language spoken here will not be as rich or as steeped in lore and tradition as the speech of the Gaeltacht I believe that a major part of the future of the Irish language rests with these people and given real support and the means to develop, the language of west Dublin or West Belfast will, in time, develop its own particular richness and identity. Without support however, of the proper kind it will peter out as a last fling of an oppressed people. At the moment the issue is very much in balance.

Education and the schoolroom in particular has long been surpassed by the mass media as the most influential factor in determining young people's speech patterns and vocabulary. Today television is singly the most influential medium in this regard. Young children's experience of an outside world is much more often firstly encountered through the medium of the television set than the kindergarten. Likewise learning processes for young children outside an immedi-

ate parental relationship will most likely be via television. Television stations and companies are providing more and more material directed at children of all ages and of course children will also be influenced by, and experience learning processes from, programmes not specifically directed at them. Children will therefore have experience of the «institution» that Television has become well before they attend school and will therefore bring many of television's values and perceptions with them into the classroom; certain aspects of their overall ability will have developed to a much greater degree than others as a result of their exposure to television. The likelihood is that visual stimuli will have a much greater influence on them than on children of a pre-television era. This will in turn have an impact good or bad on their ability to engage in more cognitive pursuits. More relevant to our context is that their response to visual and aural stimulus will to a certain degree be conditioned by an identification with the technological artefact that the television set represents. This is also true in linguistic terms —children learn a whole new «language» from television which they bring with them into formal learning situations which they will use among themselves to express feelings and emotions which comply to what are often «set-piece» experiences portrayed on television. This need not necessarily be a bad thing if a way of mediating is found in an educational environment between the particularly abbreviated slang-influenced language of television and the wonderful capacity and richness of language used as a creative liberating way of expressing exactly, or as near as possible, feelings and experiences which are individual. This too is often an uphill battle and may often demand an exceptionally gifted teacher given the cultural dominance of television over today's children.

Another difficulty arises from the situation I have just described, a difficulty which is even more compounded when one talks of normalising in a minority language. This difficulty is the alienating distance and effect the abbreviated, jargonised often «nonsense» language of television (in its worst manifestation of course i.e. its most

popular!) will have on a child's use and perception of formalised and exact terminology. From a basic viewpoint of communication there may be nothing wrong with a child or an adult for that matter talking about T.V. and the modern device used to change the channels commonly referred to as a «zapper» —both the speaker and those initiated in the use of the jargon know exactly what is meant, so effective communication is achieved. But from a linguistic and etymological point of view, which is the point of view continually to the fore in translation, a great deal more information can be conveyed by the words «television» and «remote control device». I'm not stating that all terminology which has a scientific and articulate linguistic basis is pure, it will undoubtedly contain some degree of jargon that will or will have already become jargon by virtue of so many other existing terms being used in it, nevertheless in the case of an acquired language in particular where terms need to impart as much meaning as possible, or at least relate in an informative way to what is already known of the language, such competition is a major problem.

In Ireland the major cultural influences of television via children's programming are Anglo-American, and indeed increasingly American —Mutant Ninja Turtles and Bart Simpson serve as cultural talisman for Irish children just as they do in America, except for American children the language used in these programmes is the language of their streets and neighbourhood and therefore isn't carried around in the same formulated way that is the case among Irish children who come under this spell. In their case the communication blocks are much larger and extend to whole patterns of speech as opposed to clever ways of using words and phrases already in use in the non-television environment. Imagine then the problems posed by this situation when one is teaching children new terminology in a language not their native one or when trying to give new terminology currency in a language which though it may be their native tongue and in use in the household is one which is significantly marginalised in a specific television and foreign culture oriented context. Television in particular and mass communication in general as they have

further been encompassed within the realm of a specific «communications» industry which has less to do with communicating than with the production, processing and indeed manipulating of information, have been a breeding ground for the development of «jargon» which has gained currency very quickly among the ordinary population. Jargon is very much the preserve of the dominant language, culturally and economically. In the Irish context this is of course English. One is therefore faced with a further difficulty in translation in rendering jargon meaningful in a language which is underdeveloped in terms of vocabulary and acceptance in specific areas —the technological or scientific for instance. One is faced with the choice of making a conceptual translation which will in effect be like a condensed word-description of a phenomenon, instantly recognizable in the source language by its jargon. This process though being linguistically and scientifically correct will have a reduced level of acceptance because of its literalness, after all people give names to things in order to recognise them not to describe them. This type of translation will often therefore be very difficult to make current in any habitual use whereas «T.V.» is often the more commonly used oral form. The second choice one is faced with in translation of jargon —and we must note that the «choice» element doesn't always exist— is to try and relate the concept in almost metaphorical terms, which will shift the context or domain of the object to be translated to a domain which has wider acceptance in the target language. This approach can be very successful but is often difficult to achieve particularly in a language which is already under direct influence from a language of wider diffusion. An example of this approach working in the Irish language —and it is only an exceptional example— is the Irish expression which is now widely accepted for an escalator, «staighre beo» or literally «live stairway». It must also be said that this particular example's success was in no small way due to its propagation on a television programme for learners of Irish presented by an extremely colourful and successful language propagandist.

Mostly however in the everyday and ongoing work of scientific translation the only way found of dealing with jargon is to surrender

completely to it in the hope that its resonances from the source language and thus its recognisability in the target language will give it a greater chance of gaining common acceptance. Hence the particularly quaint and colloquial computer term «bus driver» is found to be translated into Irish as «tiománaí bus» —literally «bus driver». In this instance I feel that the Irish version is equally as good as the English for only those with a good knowledge of computers would know in either language that what is meant here is not a person with a peaked cap who brings people from place to place in a large four wheel vehicle. I will be returning to more specific examples of scientific translation and the «process», which I think in reality means «problem», of normalisation a little later on but I just want to firstly mention briefly two other sources of difficulties in this regard which have specific importance in the Irish context.

The scientific tradition in Ireland has been neglected officially in terms of public recognition. Indeed in comparison with the recognition afforded to artistic achievers such as Joyce, Beckett and Shaw one would be forgiven for believing that Ireland produced no scientists of any importance. Yet people like Hamilton, Callan and Boyle made seminal contributions to various areas of science and their work is held in high esteem among scientists all over the world. I suspect that in most countries the scientific tradition doesn't have the same popular attraction as the literary or artistic and therefore tends not to get as much public or media exposure. I think though, that Ireland is probably much worse in this regard than most. There is no National Science Museum for instance, no Science Council of Ireland as there is an Arts Council. Apart from science institutions and universities and private industrial corporations there is very little official financial or resource support for scientists and innovators. It has been suggested that part of the reason for this neglect is that those successful scientists were very often seen as part of the Anglo-Protestant class in Ireland and therefore in terms of the national conscious described earlier were not seen as truly Irish by the official state orthodoxy clinging to its tenets of Gaeldom and Catholicism. Though this negative and regressive, not to mention downright insulting, at-

titude has to all intents and purposes disappeared in the last few decades, the implications of it in the context of this talk have been to further remove Science from the perceived domain of Irish. [In this regard it is ironic that one of the few books devoted to Irish scientific tradition was written in Irish]. A combination of this fact with the others described earlier leaves us in the position today where practically no scientific research or study is being done through the medium of Irish. What is being taught in University College Galway is dependent entirely on translation and those involved in teaching science subjects through Irish otherwise work and publish almost entirely in English. There are but one or two and at most, three exceptions to this and to which I will return later on.

The other point I would like to make in relation to this before dealing with specific situations is that all the aforementioned difficulties serve to create another difficulty when one comes to deal specifically with scientific translation. This is the difficulty of creating a climate in which the process of scientific translation itself is seen as a legitimate and worthwhile practice. One often comes across the attitude that translation of scientific matters isn't really translation at all but merely an act of substitution of artificially constructed words in Irish which «don't sound right» for easily recognisable words in English. Of course it is also a symptom of inferiority and a particular colonial mentality that those who hold this view fail to draw comparisons with other languages. Most languages will naturally have words that resemble each other. In computer terminology for instance, the word «byte» is in use in exactly this form in English, Norwegian, Danish, Swedish, Dutch, German, Italian and Spanish and perhaps in other languages that I'm not aware of also. The Irish word in use for «byte» is «beart», a long-established word in Irish and very adequate in this instance. The view which refuses to recognise translation and looks on it as mere substitution effectively refuses to recognise the possibility of the existence of new words in Irish and more importantly refuses to «learn» new words in Irish. This is an attitude which I have often encountered and is extremely depressing because it immediately consigns the language to a limited and ultimately disastrous

fate. Therefore the practice of scientific translation needs to be the subject of a positive public relations campaign in order to highlight the need for translation and also to establish once and for all the legitimacy of scientific translation and the establishment of new words as an essential part of language development and survival. Such a positive public relations exercise has taken place in reverse almost, in the area of literary translation in Ireland. In this case there has been a lot of public money given to projects in which literature (mostly poetry) in Irish is translated into English and thus brought to a wider audience. Many fine dual-language anthologies have been produced in recent years and while there has been much debate over whether in the long term Irish will profit or suffer from this process there has been no doubt about the legitimacy of literary translation —rather doubts have been expressed about what translation can achieve but of course this is a particularly literary argument which literary people like to discuss at great length. What is needed then in Ireland is a campaign to promote the practice and legitimacy of scientific translation in the public domain from other major source languages into Irish. If the diglossia is such that a particular domain is for the use of English then it is not sufficient to engage in what is seen as substitution of Irish in this area, a legitimate right of Irish or any lesser used language in this area must be established and explained and promoted. It is inevitable that to do this successfully the media must be skilfully exploited.

Given the situation that I have just outlined it is not surprising to learn that the great majority of scientific translation in Irish takes place in the field of education or is channelled through institutions primarily associated with education. Two institutions continually involved in this area of which I have direct first-hand experience are An Gúm, the publications branch of the Department of Education where I work as an assistant editor and An Coiste Téarmaíochta, the Terminology Committee which also functions under the aegis of the Department of Education and whose work is published by An Gúm. An Gúm was initially set up in 1926 by the fledgling state with the

primary aim of making general reading material available in Irish. Most of its efforts in the early years were directed towards translating the classics of mainly English literature into Irish. While these works were of an extremely high standard and add greatly in their richness of language to the literary corpus of the Irish language the plan was not entirely a success as most people interested in reading would have already read those books in the original. An Gúm in the earlier years also produced and fostered creative writing in Irish and provided a sound base from which many independent publishers sprang up in subsequent years to the point today where An Gúm publishes very little original creative work because of the existence of so many high quality independent publishers of books in Irish. An Gúm nowadays concentrates its efforts on providing textbooks for those schools at primary and post-primary level whose instruction is through the medium of Irish —currently standing at about 250 primary schools and 45 post-primary. They also publish a wide range of colourful and high quality books for children for all ages, both original works and co-editions of the most popular works available in other languages. These two areas together with the specific terminology dictionaries of the terminology committee form the bulk of An Gúm's publishing output nowadays. A high percentage of textbooks published by An Gúm are translations into Irish of texts already in use in English editions in schools.

Because, as is the case with all state-aided Irish language projects, An Gúm is grossly understaffed, the workload is enormous and one is constantly trying to catch up with developments in the curriculum and in the area of everincreasing teaching aids. Due to the market orientation of school publishing in English in Ireland the pupils who get instruction through English find themselves with a wealth of materials and texts to chose from and use as support resources. The pupils receiving instruction in Irish are more often left relying on the same textbook year after year and are often forced quite understandably to supplement their study with material in the English language. This problem applies across the board but is particularly acute at second level schooling. Because primary texts are simpler and quicker

to prepare there is a greater supply of adequate text translations in Irish. This is fortunate and crucial in a subject area like mathematics because from their earliest days at school pupils become used to the Irish terminology in a scientific, cognitive area. This will also limit the intrusion of the major language in the process of learning as even basic mathematical and science instruction at school contains concepts and terms not found in current use in other areas of child activity. Therefore specific concepts such as sets, geometry, series, decimals will have a positive diglossia in the language of instruction for young schoolgoing children which might not be as easily displaced by majority language television media as other subjects of more universal occurrence in children's lives. This positive situation however gets undermined if, at the postprimary level, pupils and teachers are forced to refer to majority language materials as a central part of the learning process. Because of the increasing complexity and range of the subjects involved positive and progressive attitudes to the minority language built up during the primary school phase can be undone very quickly. Terminology and thought processes associated with the language of primary schooling will quickly be displaced by the majority language in the absence of adequate and equivalent resources available in the minority language at postprimary level. The range of resources and aids available today adds considerably to this problem. Videos for instance are now in common use in all schools as another study/teaching aid. Only recently has An Gúm, due to financial and staff restraints, started devoting a small part of its work to the production of educational videos with narration in Irish.

In the first 30 years of the independent Irish state scientific subjects were taught through Irish on a much wider basis than today—most people who would have attended second level schools in the 1930's would have had most of their subjects taught through Irish. This was partly a result of Government policy which mistakenly believed that the language could be saved through the school system alone and partly due to people's own enthusiasm for the language in what was left of the euphoria surrounding the achievement of independence. Though the objectives were commendable a major problem

which was later to confound negative perceptions of Irish in the scientific domain was the lack of any systematic structured approach to terminology and the absence of any standardised form of the written language —the standardised form of written Irish in use today was first published in 1958. Teachers were often left to their own devices, sometimes their vivid and very unscientific imaginations, to supply terminology and idioms in the areas of science and mathematics. This very naturally led to confusion and misunderstandings and may have contributed to the abandonment of Irish in those subjects areas so quickly after school. The legacy of this is a great inconsistency in scientific terminology which is only now being finally and painfully normalised by the science sub-committee of the Terminology Committee.

Symptomatic of this problem has been the conflict of using terminology based on words already common in Irish used in non-scientific areas and the use of internationally recognised standardisation procedures of transliteration to create new terms in Irish. The increasing standardisation of terms internationally has moved the balance in favour of the latter approach in recent years —though there are still a lot of scientific terms and concepts found in textbooks and elsewhere in Irish described by a number of different words. Each new textbook will have in the production stage incorporated the latest decisions on scientific terminology and spelling and as soon as this is published it will be regarded as the most up to date authority, but it itself can in no way be regarded as final as the next publication will often supersede it and reflect shifts in thinking and interpretation of certain terms. Because new terms and concepts are constantly coming into use in majority languages the efforts of the minority language will always be lagging behind. It is essential therefore that rules of transliteration, spelling and standardisation be laid down and adhered to so as to expedite the process of providing useable and user friendly terms in the minority language. The importance in practical terms of giving primacy to dictionaries and official wordlists in specific subject areas of knowledge over textbooks as a source of terminology, I feel is important. A dictionary is not like a textbook and has a permanence

and authority which a textbook will not have in the area of terminology. Of course dictionaries need to be revised and added to also after a period of time but if they are compiled in accordance with the aforementioned rules of standardisation and transliteration the task of revising them will be made much easier. A dictionary can be used to correct and update a textbook and is an essential regulator of inconsistency found in textbook as well as being an invaluable source for areas where no texts or background reading exists. Recent publications in Irish of dictionaries of «Computer terms» and «Business studies» have been very well received and are being widely used in schools and educational establishments where related subjects are being taught through Irish but for which no textbooks have yet been produced.

Though a terminology committee was set up in 1927 to provide Irish terms for use in schools primarily its main approach was to seek out words already in use in Irish and revive them in a scientific context. From then on the process of terminology translation in Ireland was somewhat haphazard, guided by a golden rule of beginning with A and working through (to U). One particular committee for mechanical terms sitting in the 1940's got as far as «drift tool» of the letter D and then gave up! It wasn't until 1968 that a permanent terminology committee was set up to systematically and constantly tackle the work of providing terminology in Irish. This committee is still working today and presides over a number of subcommittees working in specialist areas. A great deal of valuable work is being done by these committees, understaffed and starved of proper resources though they are, and major achievements have been made on the standardisation of terminology and approach.

The approach of this committee to the provision of terminology in Irish today falls into three areas of choice when faced with a new term. (1) An attempt is made to give a new meaning to an existing word in Irish. (2) A compound word is formed of two or more, usually two, words already in use in Irish. (3) The term to be translated is transliterated. Transliteration has become a more common option

in recent years with the increase of completely new terms and concepts associated with information technology and computers for instance. The vast majority of these terms would have come from English and hence from Latin or Greek originals or roots. A comprehensive system of transliteration for those terms whose root is Latin or Greek has been worked out including the regulation of prefixes and suffixes, broad and slender vowels and consonants which are found in abundance in the Irish language. This system is often quite complicated but it is streamlined and efficient so that a minimum of difficulty is encountered these days once the third option above has been chosen.

A small dictionary of scientific terms was published in 1966 but this has become so inadequate and outdated that a new dictionary is currently being prepared. This however is not without its problems as new terms firstly need to be explained in order to be translated and as is the case with human nature the scientists who sit on committees to decide these matters don't always agree as the precise rendering of scientific concepts into Irish. I have found therefore in the area of Physics, with which I'm involved directly, terms being changed within the space of a couple of years. This is particularly frustrating for me as I'm in the process of editing the first ever Physics book for higher level students in postprimary schools to be written originally in Irish. Three units of this book have already been published.

An example of the type of teething problems associated with regulating scientific terminology is the case of the scientific term «particle». Initially the Irish term for this was «cáithnín» which literally means a tiny speck of dust as one would get in one's eye on a windy day. Native Irish speakers would have had no problem with this word. It was a case of a new meaning been given to an already existing word in the language in a natural manner. However in recent years this was judged to be inappropriate in a scientific sense and the word «páirteagal» was introduced, one therefore used «a-pháirteagal» instead of «a-cháithnín». Previously this form had only been used in grammatical terminology but was now in use in science and would,

I suppose, be more easily recognisable and understood by learners of the language. This, therefore, was the form used in a recently published unit of the physics text to describe the movement of particles which takes place in Brownian motion. Recently I've been told that the committee had had a rethink on the issue and that «cáithnín» may be a more suitable and accurate term. However because «páirteagal» has been used in the recent text there is a reluctance to change it so it is most likely to be used in the forthcoming dictionary. It also highlights the ongoing problem of dealing with synonymy and equivalence in scientific translation and how the consequences of striving for either one or the other are much more portentous than in literary translation.

Another example of this phenomenon is deciding between terms with an historic linguistic base in a language and the creation of specific new terms to describe scientific phenomena is the Irish word for that electrical gadget known as a «transformer». «Claochladán» had been in use for a long time in Irish for this apparatus based on the Irish word «claochlú» which means to change or to alter and is found in other concepts such as metamorphosis or a deterioration in weather. It was recently decided however to adopt the transliterated word «trasfhoirmeoir» and this is the form now in use. It is obvious that such changes and adaptations will anger many people who feel that the purity and autonomy of the language is being eroded. However it is probable that those dealing with scientific subjects through Irish will not have the richness of language and extensive vocabulary as those native speakers and enthusiasts who are immersed themselves in the lore and traditions of a bygone age. Therefore the acceptability of such terms as «páirteagal» and «trasfhoirmeoir» will be much greater amongst those learning the language and willing to put it to use in a modernist context. There is no certainty about this but it does seem to be the direction in which things are going. It is also worth noting that «transformer» itself is a direct derivative of the Latin word «transformare».

There has been a willingness to adopt terms which are perceived as distinctly native to the language if it is felt that they adequately convey the scientific concept embodied in the language —the word for «conductivity» as in «electrical conductivity» in Irish is «seoltas» and «seoltóir» for «conductor» This root «seol» is also found in words like «seoladh» to launch or set sail and «seoltóireacht» the act of «sailing»; «seol» is also the word for the noun «sail». This word gained widespread acceptance in the scientific domain and is a good example I think of how native roots can be adapted sensibly to describe scientific phenomena. This cannot be done in every case however and we shouldn't have any hang-ups about accepting new terms into a language irrespective of how stilted or contrived they might appear. The consequences of not doing so are much too grave.

It is in this I feel that the big difference is seen between literary and scientific translation. Scientific translation needs to be precise and accurate to convey exact knowledge as concisely as possible. Literary translation while striving to convey the precise meaning of the original will discover the impossibility of this task and yet will give new and creative «connotations» and insights into the original and will in the end create something «new» for the language into which the poem or prose is being translated. Scientific translation on the other hand seeks to bestow nothing «new» on the target language. The newness that we deal with in scientific translation reflects the social and cultural strength, or lack of it, of the target language the weakness of that aspect of the language is what is portrayed rather than the accuracy or suitability of that which is translated. In this respect scientific translation is much more restrictive an activity and does not generally contribute to the healthy interaction of culture and sensibilities that literary translation does. It is much more linked to the political and economic wellbeing of a language and therefore is much more bound up with the political fortunes of that language. The hard truth of the matter is that in translation of matters scientific from a majority imperialist language, in a bilingual society where the imperialist language is used, is that the meaning we mentioned earlier that is conveyed in the translation of terminology will always belong

to the majority language and will most often come from a body of knowledge and an idiom associated with the majority language. Therefore «trasfhoirmeoir» in its chance of being accepted will assume that the explanations and meaning embodied in the English term «transformer» will be already known by those using the Irish form and will be recognisable in the transliteration. There is, I believe, very little one can do to counteract this situation. I think it must be accepted and everything possible done to strengthen the use of such terms in the minority language as the norm so that they in turn will be naturally incorporated into the language as happens and happened in the past in the case of Irish, in languages whose position is strong and whose cultural self-confidence is not in any doubt.

An example of how this problem has been dealt with in the past before the standardisation of transliteration and in the absence of a worthwhile body of updated terminology is the case of a higher level Chemistry book for postprimary schools. This was the first original Irish Chemistry textbook to have been written at this level and was also in use in first year science classes in University—the author is an eminent professor of Chemistry in Galway University and is a native Irish speaker. This book was geared to people whose terminology base was in the English language and therefore reflected the predominant situation in schools and universities. The chemical terms and even difficult phrases in Irish were also given within the text in brackets, in italic type, in the English form. The idea was obviously to encourage the use of Irish and its adoption as a scientific language by mediating between it and the existing scientific knowledge of the student in English, in the hope that by reducing problems of comprehension and the necessity to relearn basic knowledge through Irish that the language would be more readily assimilated by the student. It may also be noted that the style and tone of the book is not the usual turgid dry prose associated with textbooks but is written in a lively conversational style also purposefully done to win over the reader. Though this book is still widely used in schools it has to be said that as an experiment it was doomed to failure in that it has been generally found that though the equivalence of terms in English and Irish will

last for a certain period during instruction the more familiar i.e. the English, will outlast the new, learned term. The very act of giving the English an authority within the text by placing it visibly before the student's eye will have guaranteed this. Though an approach such as this may generate a positive sympathetic attitude towards the minority language I think it is basically flawed and will have few practical benefits in furthering positive translation in the minority language, that is, translation which fully incorporates itself in a text without reminding the reader that it is indeed a translation.

A much simpler and, I believe, more beneficial approach and one which has been recently widely adopted by An Gúm in its textbooks is the provision of a small vocabulary at the back of each textbook of the most important terms and concepts used in the book. This approach recognises the reality of working in a minority language where certain subject areas have little or no base and yet does not in any way compromise the language in its expression of new terms and idioms within a legitimate text.

Internationally recognised terminology however demands that the *Système Internationale* be used for scientific notation. Many of these units are derived from English words or scientists' names as in the case of Joule, for instance, the unit of energy, which is notated by the letter J. In English and French for example, the link between the name of the unit and its symbol is obvious and unbroken. In Irish however, due to the rules of transliteration adopted the word for «joule» is «giúl» and yet the symbol «J» has to be retained. In this case a further obstacle to easy comprehension and acceptance of the term is encountered by the break in continuity between the unit and its notation. I would feel it much better to retain the term Joule as based on the name and allow the language to deal with it in its own way. This I believe is what happens in other languages without indigenious «j» sounds.

In case all this emphasising of difficulties and problems is proving too negative for you let's look at a positive example of how translation in a minority language has actually helped to clarify and

standardise to some degree scientific terminology. Because the computer industry is such a competitive one with new programmes and software and hardware being constantly produced the terminology associated with new products is often neither scientific nor particularly precise but is rather of a commercial, advertising nature linked directly to the company producing it. It is thus possible for several different terms for the same process or piece of equipment to be in use in the same industry. This situation is neither scientific nor desirable. It is when such terminology is being translated that it is possible to bring a degree of order to it and to give it a scientific, conceptual basis in the target language. This will be much more useful and meaningful to anyone dealing with such terms in a minority language. A number of examples of this area are found in the recently published dictionary of Computer Terms. For example the terms «patchboard», «jack panel», «patch panel», «plug board», «problem board» are currently in use in English language computer circles to describe the same piece of equipment which has now been translated into Irish as one term —«*losaid phlocóidí*». This is a case of translation initiating the process of normalisation instead of being problematic to it.

All of this of course underlines the necessity of the standard cultural and linguistic backup in the minority language if such glimmers of hope are to succeed. The increasing diversification of teaching methods and aids in use in schools reflects the increasing stimuli children are exposed to. Therefore, for scientific translation to have any chance of being accepted and promoted in a minority language it needs to be extended to areas and media other than the textbook. It needs to be heard and seen and experienced. A basic requirement for any minority language in this context is therefore an autonomous television service in that language with particular emphasis on high quality children's programming which would give a focus and add a new dimension to what might remain abstract and uninteresting material if confined to the pages of a textbook. Such a service does not exist in the Irish language and its absence is, I would suggest, the greatest single cause of the recent decline of the language in the

Gaeltacht areas; it is also a sign of the government's indifference to the fate of the Irish language that they have not yet acted on this issue though its importance has been clearly spelled out for them. Such a service does exist in other minority languages such as Welsh and Basque and its importance and necessity is duly recognised and developed. What is the position of scientific translation in Irish then? Somewhat nebulous, it must be said. I do not know of anyone who is full-time employed in scientific translation in Irish. Things have improved somewhat in recent years, however, up until recently An Gúm was probably the only institution constantly employing scientific translators —for textbooks. With the development of a small Gaeltacht based computer and video industry some work has been directed towards this area. EC directed programmes such as LINGUA have also opened up areas where, if properly exploited, useful and widespread scientific translation into minority languages could be expanded with very profitable psychological results for the language concerned. Such programmes would emphasise mutual and equal interaction between languages as opposed to a vertical interaction imposed by a dominant language.

An Gúm employs about 8 scientific translators on a fairly regular basis. These are mostly teachers at second level and are involved in teaching the subject they translate, but also may be employed in related areas such as mathematics or business studies if the need arises. These translators are on a larger panel of translators drawn up about six years ago as a result of a course run by An Gúm. A most successful approach has been to involve a number of translators on one project, a mathematics course for instance, and have them work under a coordinator who in conjunction with an editor from An Gúm will divide out the work, advise on terminology, lay down guidelines and deadlines for the completion of the work etc. This method has proven very successful not least in its quickness and it also helps to motivate translators and negates any feeling of isolation they might have. In the long term it develops a network for the translators themselves and is helpful towards developing uniformity of style and standardisation and propagation of terminology. It has also been found recently that

publication of frequent and smaller course «units» as opposed to large textbooks is more successful for the speedy circulation of new terminology and also in creating an awareness of a constant source of material being produced. This has an allround positive psychological effect on teachers and pupils in particular and reduces the temptation to rush for an English language text in the immediate absence of a suitable one in Irish.

The department of education sets a broad range of payment for translation which is in the region of 4,680 pesetas to 7,500 pesetas per 1,000 words in the source language. Because of the complexity of idiom and terminology scientific translators generally get paid at the greater rate assuming the work is of a high standard. This compares with the rate advised by the Irish Translators Association of 7,500 pesetas per 1,000 words to an individual customer plus 40% extra for technological translation.

The main obstacle for translators of scientific material into Irish is that there is no computer data base available to them to work from. The Terminology Committee of the department of education have such a data base and are constantly renewing and updating it in line with their work. However many translators still present their work in typescript form and only recently have some of them started to send in their work in diskette. This is a major obstacle to the speedy development of a translation ethos and body of work which could compare with other languages. Almost all of the scientific translation or any kind of translation for that matter which takes place to and from other languages in Ireland —for multi-national companies for instance— is done on computer with access to a massive data base of information, terminology etc. In many cases the companies requiring the translator will provide this facility for the translator. At the moment the translator in Irish must rely on those dictionaries already published recently and deemed up to date and on wordlists supplied by the terminology committee of dictionaries yet to be published. Some progress is being made in this area but is as yet too little and too slow. An Irish-owned American-based company has written a programme

enabling the large and useful Irish-English general dictionary published in 1978 to be accessed on computer. As yet this facility is only available to the editorial staff of An Gúm. This has proven very useful and has speeded up and improved the standard and consistency of editorial work greatly. In today's high-tech, computerised, world a readily available data base is an essential tool for any translator. If such a data base was available to teams of translators it would increase many fold the advantages I earlier described in relation to the current working of translation teams. A spin-off effect of this would be the easier acceptance of the minority language as part of a worldwide translation network —a network which already exists for translators working in majority languages, as between Canadian French and English for instance.

Much of what I have had to say here may be viewed as overly negative. I have focused on the difficulties and problems involved in scientific translation and normalisation in a minority language. I have attempted to place these difficulties and problems in a broader political, cultural and historical context referring specifically to the case of Irish. I feel it important to do this because it is these wider factors of politics, history and culture which influence and condition the way people think and the attitudes they adopt. Languages of lesser diffusion will also be dealing with the conditioning influences of majority languages and dominant cultures —it is therefore crucial that language planning for languages of lesser diffusion take these broader factors into account and highlight them because this will not be done on their behalf by the dominant culture. This process may give rise to conflict and confrontation, as in the case of Quebec, but it is better to resolve problems through engaging them in an open honest way than to ignore them. Therefore, I am somewhat concerned by the facile talk we hear from politicians and Eurocrats extolling the rich cultural tapestry of the «new Europe», the post 1992 European Community with its linguistic and cultural diversity while at the same time they ignore certain important economic and cultural factors at the centre of the proposed Eurostate which are essentially centralising and ho-

mogenising. Such double-think is dishonest and only serves to undermine the work done by those people genuinely interested in the preservation and development of minority languages.

Part of the problem of normalisation associated with scientific material in any language as I mentioned earlier, is that science itself is often an alien subject for many people who feel it to be beyond their grasp. This false impression must be overcome. Efforts must be made in particular to make science accessible to young people. A recent development in this regard in Irish has been the publication of an 8 page magazine in Irish called «An tEolaí» (The Scientist) which gives snippets of information about the latest developments in the world of science and the environment presented in readable form and in a visually attractive way. This is circulated to the media and to every second level school in the country —English medium schools as well as Irish medium schools. This publication is brought out regularly through the school year and as well as making scientific material more attractive by taking it outside a strict classroom context, it also has positive effects on the perception of Irish. It shows the language dealing efficiently and comfortably with complex scientific information —it is also therefore widely used by those involved in teaching Irish inside and outside school as an extra aid.

Let us not despair however of the problems facing us. Normalisation and scientific translation are not specifically the problems of minority languages. A recent publication of standardisation of computer terms in German was found to be overwhelmingly based on terms in English generated in the computer heartland of Silicon Valley in California, USA. The Arabic language with its 150 million speakers has constantly experienced major difficulties in efforts at standardisation and normalisation in dealing with a whole range of terminology, not just scientific and would appear to be quite far behind many of the languages of lesser diffusion in this respect. There is hope, therefore, that the problems experienced in dealing with science and new terminology even by languages of cultural dominance and wide diffusion will lead to widespread efforts

being made to resolve them, which would impinge positively on the process of normalisation in languages of lesser diffusion.

Lest anyone should think that certain languages are preordained to dominate certain fields of knowledge such as science, I will finish by citing a 10th century geographical treatise written in Irish and in verse by an Irish monk called Airbheartach Mac Coisse where the Irish word «maighnéad» appears. «Maighnéad» is the equivalent of the English word «magnet», both derived from the Latin word «magnes». The Oxford English Dictionary, that Bible of all dictionaries, states that the word «magnet» first appeared in English in 1440, yet Airbheartach Mac Coisse was using «maighnéad» (in verse!) in the 10th century. Now I wonder who transliterated whom?

LABURPENA

Itzulpen Zientifikoa Hedadura Mugatuko Hizkuntzetan eta Normaltze-Prozesua

Egoera

Irlandaren iragan kolonialak efektu nabariak eragin ditu, irlandera bai ama-hizkuntza dutenen gain eta bai bigarren hizkuntza dutenen gain ere. Talde bietan nabari da halako etsipen jarrera bat Gaeltacht hizkuntzak mundu modernoaren konplexutasunari aurre egiteko duen gaitasunari dagokionean. Horri gehitu behar zaio irlanderaren erabilerak pairatzen duen diglosia negatibo/selektiboa zuzentzeko erakunde ofizialen ekimenak izan duen porrota, zeinak areagotu egin baitu taldeon hizkuntzarekiko sinesterik eza.

Irlandar tradizio zientifiko eskasak, bestalde, ez dio inongo mesederik egin hizkuntzari berari, ez bait du inolako pisurik izan hizkera zientifikoa garatzeko orduan. Badira, honetaz gain, beste zenbait gorabehera hizkera zientifikoaren garapen horren eragozle izan direnak; hala nola:

– Gaeltacht lurraldeetan ezarri izan diren entrepresa teknologikoki aurreratuek ingelesa izan dute teknologia horretara iristeko bitarteko bakarra, irlanderadunak ere horretara beharturik.

– Teknologia aurreratua irlandez ikasteko eskoletan izan den aukera guztiz murrizta izan da.

– Irlanderadun Unibertsitatean ere zientziako gaiak bi hizkuntzetan irakatsi izan dira, irlandezko testurik ez zegoelarik. Langabeziaren eta emigrazioaren itzalak adoregabetu izan ditu gogorik beroenak ere.

Historia horren ondorioa oraingo diglosia selektibozko egoera dugu:

– Teknologia eta industria gaiak ingelesez erabiltzen dira, eguneroko kontuetan irlandez dihardutenen artean ere.

– Ingelesaren konpetentzia indartsuak ingeles esamoldez guztiz kutsatua du irlandezaren erabilera.

– Terminoak existitzen diren kasuan ere, apenas iristen diren jendearengana; alde batetik, terminologia berri hori zabaltzeko sarerik ez dagoelako, eta bestetik, jende arruntak aldrebes eta itxuragabetzat jotzen dituelako Dublingo funtzionarioek darabiltzaten hizperriak.

Egoera horren aurrean zenbaitek agertzen duen jarrera «preserbazionismoa» dei litekeena da. Halakoentzat munta duena hizkuntz errelikia kuttun horri bere betiereko garbitasunean eustea da, ez baitiote lekurik ikusten bizimodu arruntean. Hizkuntza goxo-goxo hiltzen uztea besterik lortuko ez lukeen jarrera garbizale-garbitzaile hori oztopo gertatzen da, asmoak asmo, irlandezaren normalkuntza posible bakarrerako.

Kontuak kontu, ikaragarritzko etena dago Gaeltacht lurraldeetako hiztunen eta handik apartekoan artean. Bien arteko zubi-lana egitea ataza politikoa da batik bat, eta kontutan hartu beharke ditu talde bakoitzaren errealitate historiko, soziologiko eta kultural bereziak, haiei dagokien kontzientzia politikoa bultzatzeko. Bestetik, beharrezkoa da irlandezaren aurrerabidearen kontrako diren indarrei aurre egiteko politika bat ere (merkatu hutsaren logikaren aurrean, asmo politikoaren marketina jarriz, besteak beste).

Dena ez da, hala ere, iluna, eta halako pizkunde bat somatzen da Irlandako hiritar klasearen artean: diru, burokrazia eta eliz arazo guztien gainetik, eskola berriak irekitzen dira; horrekin batera, hizkuntzari loturiko identitate kontzientzia bat garatzen ari da, eta mugimendu horretan sarturik daudenek bestelako grina erakusten dute terminologia berria ere berenganatzeko, bizi diren girorako ere baliagarri izango den hizkuntza bat gauzatzeko bidean.

Zientzi itzulpena

Irlanderara testu zientifikoak itzultzerakoan gainditu beharreko oztopoetako bat hizkera berezia izatearena dugu. Alde horretatik, antz handia du telebistako (edo beste masa komunikabideetako) jergen arazoarekin. Guztiz zaila gertatzen da jerga adierazkor bat lortzea hainbat alorretan osatu gabe dagoen hizkuntza batera itzultzen denean. Horren aurrean bi jarrera har daitezke:

- jergak adieraziaren parafrasia egin, hark zuen joko metaforikoa galtzen delarik
- edo jerga autonomo bat sortu, nahiz ez den erraza nagusiago den hizkuntzarekin konpetitzea.

Garbi dago bigarren bidetik abiatu beharra dagoela, bere zailtasun guztiekin ere, bai jergen kontuan eta bai bestelako hizkera berezietan, zientziena barne.

Terminologiari dagokionean, orain arteko hizkuntza idatziaren bateratasun falta eta zientzi itzulpenak duen itzalik eza da egun, Hezkuntza Sailaren Terminologia Batzordeak (**Coiste Téarmaíochta** delakoak) heredentzian jaso duena. 1968 urtetik lanean ari den talde horren egitekoa terminologia sortzeaz gain, irlanderaazko hizperrien izengaiztoa garbitzea ere bada. Eremu jakin bat ingelesari besteri lekurik ez uzteko tamainako diglosira iritsi aurretik, zabal ezagutarazi beharra dago irlandera esparru hortan duen eskubide osoa. Halakorik iristeko, egun, masa komunikabideetara jotzea beste biderik ez da ikusten.

Terminologia lanetarako, aipatu batzordeak, hiru metodo erabili izan ditu:

- Irlanderaazko hitz zaharrei esanahi berriak ematea.
- Irlanderaazko bi hitzen edo gehiagoren arteko konposatuak sortzea.
- Transliterazioa, zeina, azken urteotan, zientzietarako terminologia sortzeko aukerarik ustiatuena izan baita. Batez ere, informatikaren munduan, ingelesetik eta, askotan, hizkuntza klasikoetatik datozen termino berriei ordaina emateko, halako terminoentzako transliterazio sistema xehea eraiki da, bere konplexutasunean erabilterraza dena.

Batzordearen beste zereginetako bat, 1966ko zientzien termino-hiztegia berrikusi eta osatzea izan da. Ataza hortan, elementu anitzek eragindako hainbat arazori aurre egin behar izan zaio:

- Termino berriak azaldu egin behar dira lehendabizi, ordaina aurkitu nahi bazaie; eta askotan, zientzilariak ez datoz bat hitzaren esanahiari berari buruz.
- Sinonimo eta baliokideek, zientzi itzulpenean, besteetan baino arazo larriagoak sortzen dituzte.
- Kontzeptua behar bezain egoki adierazten duten bitartean, irlandera jator kutsua duten terminoak hartzeko joera dago.
- Zientzi terminoen notaziorako **Système Internationale** delakoak, —zeina, gehienetan, ingeleserazko nahiz frantzeserazko terminoetatik eratorritzen den—, zaildu egiten du itzulpena, sinboloari eutsi behar bait zaio, nahiz eta proposaturiko irlanderaazko terminoa bestelako letra batez hasi.

Egun, Irlandera egiten den zientzi itzulpenaren egoera eskasa baino ez dela esan beharra dago. Horren adierazgarri:

– Ez dago inor, Irlanda guztian, zientzi itzulpenean profesionalki ari denik. Arestirarte, irakaskuntz materiala sortzeko zientzi itzultzaileen lankidetzaz zuen bakarria Hezkuntza Sailaren agindupeko **An Gúm** izeneko lantaldea zen.

– Zientzi itzultzaileek pairatzen duten gabeziarik nabariena konputagailu datu baserik eza da. An Gúm-eko Terminologia Batzordea ari da, piskanaka, Gaeltacht terminodun basea sortzen eta eguneratzen. Horretaz gain, Estatu Batuetan kokaturiko enpresa irlandar batek, 1978ko irlandera-ingelesera hiztegi orokorra konputagailu bidez erabili ahal izateko programa kaleratu du.

SINTESIS

La traducción científica en las lenguas de pequeña difusión y el proceso de normalización

Situación

El pasado colonial de Irlanda ha tenido efectos evidentes tanto en los hablantes nativos del irlandés, como entre aquellos en que ésta es segunda lengua. En ambos colectivos se observa una cierta postura pesimista en lo que respecta a la capacidad del idioma Gaeltacht para hacer frente a la complejidad del mundo moderno. A ello hay que añadir el fracaso de las iniciativas emprendidas por los organismos oficiales para corregir la diglosia negativoselectiva que se registra en el uso del irlandés, lo cual no ha hecho sino aumentar la incredulidad de estos colectivos hacia la lengua.

Por otra parte, la poca tradición científica irlandesa tampoco es muy favorable para el idioma, ya que no ha tenido ningún peso a la hora de desarrollar el lenguaje científico. Pero además ha habido otros factores que han impedido ese desarrollo, como son:

– Las empresas tecnológicamente avanzadas que se han instalado en territorio Gaeltacht han utilizado únicamente la lengua inglesa para alcanzar esa tecnología, con lo que han arrastrado tras ellos a los hablantes de irlandés.

– La posibilidad de aprender en la escuela en irlandés dicha tecnología avanzada ha sido muy limitada.

– En la universidad de habla irlandesa, los temas científicos se han solido enseñar en ambos idiomas ante la falta de textos en irlandés. Además, la sombra del paro y de la emigración desalienta incluso al mejor ánimo.

Consecuencia de esta historia es la actual situación de diglosia selectiva:

– *El inglés es la lengua utilizada en los campos de la tecnología y de la industria, incluso entre las personas que dominan el irlandés.*

– *Debido a la fuerte competencia del inglés, la lengua irlandesa está llena de expresiones inglesas.*

– *En los casos en que existen términos irlandeses, éstos apenas suelen llegar a la gente, debido, por un lado, a la falta de un circuito de difusión de dicha terminología, y, por otro, a que la gente considera extraños y absurdos los neologismos empleados por los funcionarios de Dublín.*

La postura que algunos muestran ante semejante situación podría denominarse «preservacionista». Para éstos, lo que importa es preservar esa entrañable reliquia lingüística en su eterna pureza, ya que no le ven sitio alguno en la vida normal. Esta postura purista/purificadora, que por muy bienintencionada que sea no puede conseguir otra cosa que no sea dejar morir dulcemente al idioma, resulta otro obstáculo para la posible normalización del irlandés.

Sea como fuere, existe un gran abismo entre los hablantes de la zona Gaeltacht y los del resto del país. Hacer de puente entre unos y otros es una tarea fundamentalmente política, que deberá tomar en cuenta las diferentes realidades históricas, sociológicas y culturales de cada colectivo de cara a impulsar la conciencia política que les corresponde. Por otra parte, es necesaria una política que haga frente a las fuerzas contrarias al progreso de la lengua irlandesa (poniendo, ante la lógica pura de mercado, el márketing de la voluntad política, por ejemplo).

Sin embargo, no todo es oscuridad, ya que se está observando una cierta reacción entre las clases urbanas irlandesas: se están construyendo nuevas escuelas, a pesar de los impedimentos económicos y burocráticos, y junto con ello se está desarrollando una conciencia de identidad unida a la lengua; en este sentido, las personas inmersas en este movimiento muestran mayor interés por hacerse dueños de la nueva terminología, a fin de poseer un idioma válido para su propio ambiente.

La traducción científica

Uno de los obstáculos que hay que superar en la traducción al irlandés de textos científicos es el de los lenguajes especiales. En cierto sentido, esto es muy similar a lo que sucede con el problema de las jergas en la televisión o en los medios de comunicación de masas, ya que en ambos casos es muy difícil conseguir una jerga expresiva cuando se traduce a una lengua que no está desarrollada en muchos ámbitos. Ante este hecho pueden adoptarse dos posturas diferentes:

– *parafrasear lo expresado por la jerga, con lo que perderemos el juego metafórico en ella encerrado;*

– *crear una jerga autónoma, aunque no es fácil competir con la lengua más fuerte.*

Resulta evidente que hay que tomar esta segunda vía, con todas sus dificultades, tanto en lo que se refiere a las jergas como a las demás formas especiales de lengua, como es el caso del lenguaje científico.

Si nos atenemos a la terminología, la herencia con que se ha encontrado la Comisión de Terminología del Departamento de Educación (llamada «Coiste Tearmaíochta») es la inexistencia hasta ahora de una lengua escrita unificada y la poca importancia de la traducción científica. Desde su creación en 1968, este grupo ha venido trabajando en la creación de terminología, pero también se ha tenido que ocupar de lavar el mal nombre de los neologismos en irlandés. Antes de llegar a una situación diglósica tal que impida acceder a un determinado ámbito a cualquier otra lengua que no sea el inglés, es preciso dar a conocer el derecho del irlandés a ocupar también ese ámbito. Para ello, actualmente, no se ve más salida que los medios de comunicación de masas.

La mencionada comisión ha empleado tres métodos en su trabajo terminológico:

- añadir nuevos significados a términos antiguos del irlandés;*
- crear palabras compuestas con dos o más términos ya existentes;*

– valerse de la transliteración, la cual, en estos últimos años, ha sido uno de los medios más explotados en la creación de terminología científica. Así, en el campo de la informática, por ejemplo, para buscar términos para aquellos nuevos conceptos procedentes del inglés y, en muchas ocasiones, de las lenguas clásicas, se ha construido un detallado sistema de transliteración, de fácil utilización a pesar de su complejidad.

Otra de las tareas de la comisión ha sido revisar y completar el diccionario de términos científicos de 1966, tarea en la que se ha tenido que enfrentar a multitud de inconvenientes:

– En primer lugar hay que explicar los nuevos términos a fin de encontrarles un equivalente, y a menudo los propios científicos no se ponen de acuerdo sobre el significado de un determinado término.

– En las traducciones científicas, los sinónimos y equivalentes suelen presentar mayores problemas que en otros campos.

– Se tiende a tomar términos de aspecto castizo en irlandés, siempre y cuando expresen adecuadamente el concepto al que se refieren.

– El Sistema Internacional de notación de términos científicos —que a menudo se deriva de los términos ingleses o franceses— dificulta la traducción, ya que hay que mantener el símbolo correspondiente, aunque no coincida con la letra inicial del término propuesto para el irlandés.

Hay que señalar que en la actualidad, la traducción al irlandés de temas científicos se encuentra en una situación poco halagüeña, como lo demuestran los siguientes hechos:

– En toda Irlanda no hay nadie que se dedique profesionalmente a la traducción científica. Hasta hace poco tiempo, el grupo de trabajo llamado «An Gúm», dependiente del Dept. de Educación, era el único que se valía de la colaboración de traductores científicos para la creación de material didáctico.

– La mayor carencia que sufren los traductores científicos es la inexistencia de una base de datos computerizada. La Comisión de Terminología de «An Gúm» está creando poco a poco una base de datos de términos en Gaeltacht. Además, una empresa irlandesa radicada en los EE.UU. ha confeccionado un programa con el que