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WRITING SYSTEMS:
WHY AND HOW THEY NEED TO BE STUDIED

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Riting systms:
wy and how they need to be studid

Christopher Upward

1. Wat ar riting systms and wat dos ther study entail?

Altho th words 'riting' and 'systm' ar very widely used, ther combnation in th frase 'riting systm' may be less familir. Riting systrns ar nevrthless part of th evryday experience of evry litrat persn. Th term refers, most obviusly, to th (primarily) visbl form wich languajs can be givn, so that infrmation expresd in them can be preservd thru time and across space. Riting systms thus enable quantitis of data to be recordd beyond th capacity of th individul human memry, and to be transmitd over distnces beyond th carrying powr of th individul human voice. Such systms, in th plural because ther ar many difrnt typs, hav a self-evidntly crucial function in almost evry presnt-day society, but like al tecnolojis they ar artifacts, not forces of natur, and ther opration requires exprtise and study — on varius levls for varius purposes. This paper wil present a vew of th importnce of such study, along with th main aspects of th subject wich it is considrd need to be covrd. Th importnce of studying riting systms is seen as ultmatly practice, being necesry for th eficient developmnt and aplication of litracy skils and eficient non-oral comunication jenrly; but it is hoped this paper wil also sho that ther study enhances cultrl and mor jenrl human awareness, and that it can provide som quite rigrus trainng in analytic methods and sientific thinkng. It is intlectuly demandng because it produces no simpl ryt-or-rong ansrs, but constntly requires a balanced asesmnt of ofn conflictng factrs. It provides a perspectiv of th hole of human histry, it asks politicl, ecnomic and social questions about civlizations past and presnt, it considrs how th human brain processes infrmation, it anlyzs how infrmation can be structurd, and it requires valu jujmnts about wat ar sycolojicly, socialy and politicly desirebl policis.

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2. Levls of study

Peple hav studid riting systms for at least 5,000 years, and ar stil doing so at th end of th 20th century. Th levl of ther studis ranjes from th aquisition of elementry litracy skils in ther mothr tong to th decyfrmnt of newly unerthd scripts from bygon civlizations, from lernng foren languajs to en- or decryptng coded texts, from getng in tuch with brail to rehersng th rythms of morse or th coreografy of semafor, from graspng th use of mathmaticl symbls to aquiring th skils of readng or composing music. On an evryday levl, riting systms ar th medium by wich non-oral comunication takes place between individuls, or between a riter and numerus mostly unown readrs, or between anonmus sorces such as th state and hole populations, and they ar studid for a corespondngly wide variety of reasns. Yet one furthr reasn must be mentiond, wich, it wil be argud, has not hithrto been givn th public atention it shud receve in th english-speakng world: that is for th purpos of languaj plannng. For th argumnts in this paper wil lead to th conclusion that al riting systms—like othr artifacts—need to be subjectd to criticl scrutiny and, wher apropriat, modifyd to meet th new needs wich social chanje jenrates. Othrwise they wil sufr th comn fate of evrything manmade, that they becom out of date and cese to serv ther intendd purpos satisfactrily. To prevent this hapnng th systms concernd hav to be studid, but aplyng a deepr and brodr perspectiv than for any of th mor limitd, practicl aims mentiond abov. Furthrmor, wile such study may be found educativ and enlytnng in itself, and may be needd to satisfy imediat languaj-plannng requiremnts, it needs also to be seen as providing th necesry trainng for plannng and manajng th progress of riting systms into th futur.

3. Riting systm (un)awareness

In th previus section varius typs and functions of riting systms wer listd individuly, wich is also how they ar primarily perceved by ther users—in isolation. Th beginng readr for instnce aproachs a particulr riting systrn, and not riting systms colectivly, or jenericly, or abstractly. Users of riting systms normly accept them unquestionngly in th form in wich they first lernt them from ther teachrs, and even unecesry dificltis and defects ar soonr or later

mostly acceptd as inherent in th systm. At th first, 'cognitiv' staje of lemng, beginrs lak th necesry nolej to think criticly about th systm; at th secnd staje, that of 'practise th aim of mastmg th systm domnates lernrs awareness to th extent even of overshadoing such traps as they may fal into; and once lernrs acheve th final skil-levl of 'autmaticity', criticl questions of structur and ordr ar usuly relegated, at best, to th subconcius. A new riting systm, such as those developd undr th ejis of Infrmation Tecnolojy (wich then go by th name of computer 'languajs'), can admitdly be subjectd to rigrus analysis in terms of its lojic and eficiency (if not always in terms of its suitbility for th human oprator, lak of 'user-frendliness' being ofn deplord). But long-establishd systms, such as th roman alfabet aplyd to th spelng of natrl languajs like english, ar mor ofn prey to unthinkng habit, convention and conservatism. Of no languaj is this truer than of english, wich today servs as th mothr tong of a good 300 milion peple and as a first foren languaj to hundreds of milions (posbly over a bilion) mor. English is th prime languaj of comunication for humankind as a hole, and criticl considration of th way in wich it is ritn shud therfor be no less a matr of concern than th represntations of computer lojic. Th vocablry and structurs of english hav been refined for specific purposes, as in AIRSPEAK and SEASPEAK, and its riting systm has been adaptd for specific categris of user, as for braille and telecomunication; but for jenrl purposes it has scarcely benefitd from such systmatic revew. Ther wud seem to be no good reasn for that neglect, and jujd by th criteria wich this paper wil be putng forwrd, such aprasal shud be seen as long overdu.

4. Th analojy of air polution

The study of gases wil now be presentd as an analojy for th study of riting systms. Sientists and enjneers hav long studid and handld specific gases for specific purposes, and wile th bulk of humankind benefits from that exprtise, it needs no specialist undrstandng of th subject. But ther is a vital, universl gas wich is normly taken for grantd by us al: th air we brethe. Its quality is of direct concern for human survival, and today that quality is recognized to be undr thret. Th air therfor needs to be studid and plans developd to ensure its quality for th futur. If we now substitute th study of 'jenrl purpos riting systms' for 'air', th force of th analojy may becom aparent.

Litrat membrs of society absorb, deeply or superficialy, th intlectul content of watevr texts pass befor ther ys, just as th lungs absorb oxyjn from th air and pass it into th blodstream. This paper puts forwrd th notion that, unless riting systms ar proprly manajd, text (like air) can becom systemicly poluted, and that just as poluted air reduces th fysicl eficiency of th body, so systemicly poluted text reduces th intlectul eficiency of th mind. Th damaj ocurs on two levls: firstly, mastry of th systm itself is impaird; but secndly, non-systemic visul clutr, like bakground noise sufrd by telecomunications, blurs th imaj of th text (resultng in failur to spot misprints, for instnce). A profoundr and mor worrying manifestation of such 'damajng textul polution' wil be referd to towards th end of this paper. Th natur of both typs of polution, gaseus and textul, demands specialist study and exprtise.

5. Th long term historiel perspectiv

Wile air is a natrl elemnt, riting systms ar human artifacts created in specific socal environmnts wich hav to be taken into acount wen such systms ar studid. Social environmnts arise from th intrplay of historic conditions, and th study of riting systms involvs th brodst and longst of historic perspectivs. Histry is by defnition riting (ther can be no historicl records if they ar not, somhow, ritn down), and riting systms hav of necessity acompnid th developmnt of human civlization from its inception. Riting was a precondition for th groth of complex human societis with citis and states, tho 'wich came first?', riting or citis, is no dout a chikn-and-eg question, wich fails to aknolej th developmnt of agricultur as a prerequisite. Civlization, citis and states depend on th production of an agricultural surplus to feed those hos lives ar not exclusivly taken up with food production for self-suficiency. 'That surplus has to be orgnized, wich firstly means simply countng th produce, but that in turn means keepng records, and records mean riting. Riting first arose in the Mesopotamian basin (modern Iraq) graduly over a period from perhaps — 5000 to — 3000, aparently out of 'acountng' systms (taly marks and tokens) for manajng foodstufs and othr produce in those ecnomic sectrs wich wer not based on subsistnce farmng. From the outset, therfor, we se riting havng a practicl function, and th study of riting systms has to keep that esential functionality in mind in

formng its jujmnts on al riting systms, past and presnt. Th peaks of litry achevemnt of past civlizations must not mislead us, as they hav somtimes don in th past, into considmg fine litratur as the raison d'être for rating systms. As th orijnl riting-for-acountng-purposes became mor sofisticated, it sloly developd tecniqes for relating numbrs to things by picturng them (at first, typicly by symbls recognizably depictng crops and livestok), and then for representng things in othr meanngful contexts. In du corse th systm of represntation became mor and mor extensive eventuly alowng a wide repertry of words and concepts to be recordd in wat is now nown as th cuniform riting systm, a process of impresng wej-shaped marks into soft clay. Mastry of such a systm, with at least potentialy thousnds of syns for difrnt words, became an arcane craft requiring a lifetimes dedication beginng with long and specialized trainng. It thus conferd powr and privlej on an elite of practitionrs (scribes), and was ofn asociated with kingship and relijn: such wer th eivlizations of ancient Mesopotamia and Ejypt. Here we hav anothr jenrl mesaj for th study of riting systms in al times and places, that litracy givs powr and leves th ilitrat relativly powrless; oposition to its spred has thus ofn been explicitly asociated with oposition to th dispersl of powr.

6. Th alfabetic brekthru

Th orijn of ejyptian hieroglyfics is much less wel undrstood than that of cuniform, but it led to a qualitativ shift in th natur and potential of riting; for out of its complexity came forth simplicity. By th —2nd milenium both cuniform and hieroglyfics had developd a tecniqe for using syns to represent speech sounds, wich in th case of cuniform wer typicly sylabls and in th case of hieroglyfics wer typicly just consnnts. Th invention of th alfabet around —1700 by a semitic peple undr ejyptian rule (ho wer therfor familir with hieroglyfics) systmatized this capacity of riting to represent speech sounds by reducing th numbr of difrnt symbls from many hundreds to a set of litl mor than 20, with each symbl aplyd exclusivly to th represntation of a singl speech sound. This inovation had revolutionry implications for human litracy in th long term. Firstly, it ofrd a riting systm hos few symbls (its letrs) cud be quikly lernt by anyone without years of aprenticeship. Secndly, th use of th syns was deternind not by som mysterius lor handd down from on hy, but in a transparent and

predictbl way by th speech sounds that wer part of evry persns experience. Wat th alfabet ment was that if u no th sound valus of th fonografic syns, u can in principl rite down any word u wish to comunicate and read any nown word u com across in riting.

7. Th social sycolojy of riting systms

As such, one myt hypothesize that th alfabet was a precondition for universl litracy, and thus also a precondition for societis in wich any individul cud hav access to infrmation and ideas and hence, potentialy, to som degree of powr. This alfabetic principle that letrs shud reflect speech sounds in a predictbl way, is here positd as th sycolinguistic cornrstone of th study of riting systms. Alfabets ar not just one typ of intlectul construct among many posbl altemativs, as one may say that cuniform and hieroglyfics and chinese ar (or wer), but rathr they mesh directly with th esentialy and uniqely human facity of speech. One myt, for th sake of argumnt, put forwrd th proposition that an alfabetic riting systm therfor ofrs a potential for democracy and individul emancipation wich mor arcane riting systms by ther very natur do not. (One may like to use this conception of th socio-politicl implications of th alfabet to interpret th recent fashn for alowng british scoolchildren to begin to aquire th skil of riting by spelng words acordng to ther own best jujmnt— 'childrens inventd spelngs'—rathr than acordng to th dictates of conventionl 'corectness'.) Certnly, once a wel-desynd alfabetic riting systm has been lernt, it givs th lernr untramld scope for self-expression and ritn comunication: watevr can be thot and spoken in words, can also be ritn and red without refrnce to a hyr scriptorial authority. Such individulism is an aspect of th story of ancient Grece and Rome, and in modrn times alfabetic riting systms ar a medium thru wich litracy, mass education, ecnomic librlism, and democracy ar acheved. Claims for an abslute, determnistic collection between an alfabetic riting systm and such sociopoliticl desidrata may be considrd at least exajrated, and perhaps suspect, but it is nevrthless worth askng wat efect difrnt riting systins may hav on th societis that use them: wat efect do they hav on development sycolojy, wat efect do they hav on standrds of education? That they myt hav som efect is at least plausbl. Th criticl examnation of riting systms thus implys askng wat function they hav in a society, both in theory and in practise. If they permit universl litracy, they provide th foundation

for a civl society in wich al can participate; if they obstruct universl litracy, those ho ar denyd its ful fruits ar imprisnd within mor limitd horizons and ar ipso facto deprived of th ryts of activ citiznship. Bodis like UNESCO and OECD ar concemd with litracy as a world issu, as a factr that can inhibit th politicl and ecnomic developmnt of cuntris, but ther studis of comparativ standrds of litracy need to take acount of th efect of difrnt riting systms on actul and potential levls of achevemnt.

8. Factrs afectng chanje and inertia in riting systms

Wethr or not alfabets contain within them al th virtuus potential proposed abov, it is clear that they hav not so far ushrd in any utopias. Th study of riting systms therfor has to considr how they hav been actuly aplyd by difrnt societis. Evry riting systm is uniqe: each social orgnization imposes its own requirements, and riting systms evolv acordngly. Ther may be forces that resist change to establishd scriptorial traditions, such as th asociation of a script with ideas of th eternl validity of sacred texts in ther receved form, or with educationl institutions ho explicitly or implicitly se ther function in preservng and reproducing themselvs. Ther may by contrast be forces that ar able totaly to replace one riting systin with anothr, with th express aim of transformng th society concernd, as wen Atatürk replaced th arabic by th roman alfabet in Turky in 1928 in ordr to asist th westrnization and modrnization of his cuntry, or wen missionris introduced th roman alfabet to England in the sevnth century in ordr to cristianize pagan kingdms and in th process first marjnlized and ultmatly put an end to th use of jermanic runes. Ther may be forces workng to turn th clok bak, despising th riting of th presnt and tryng to restor classicl modls from th past, as hapnd with english and french in th 16th century undr th influence of th rediscovry of greek and latn ritings; th result was a legacy of confusion that contrasts starkly with th efects of th oposit tendncy in italian and spanish, wich systmaticly rejectd greek and latn spelng modls. Ther may be forces delibratly tryng to limit th potential of a riting systm to giv a society a world perspective rathr than merely a local or nationl one, as hapnd undr Stalin with his insistnce on th cyrilic rathr than th roman alfabet especialy for th subject peples of th USSR. Ther may be forces that insist on distinctiv riting systms to create frontirs or even barirs between peples or faiths, as between th languajs of Scandnavia, or th alfabets of Serbs and Croats or of Urdu and Hindi. Or ther may be forces aimng for th reverse, to bring peples closer togethr, as wen Malaysia and Indonesia colabrated to

harmnize ther previusly conflictng english-based and duch-based riting systms in 1972, or as wen th duch of th Nethrlands and Beljm set out to remove difrnces between ther spelng systms *(Nederlandse Taalunie)*. Ther may be tecnolojicl inovations, such as th introduction of print, hos comercial intrest lies in th widest posbl distribution of text and wich therfor standrdize ritn forms to acheve maxmm acceptbility to th litrat public. Ther may be educationl pressurs, perhaps politicly motivated, wantng to weld th previusly disprat riting traditions of a languaj togethr into a singl norm so that futur jenrations wil form a singl litracy-nation, as hapnd in Jermny in th decades aftr unification in 1871; or perhaps pedagogical considrations wil be uprmost, simplifyng th systm to facilitate litracy aquisition, wich was th motivation behind th chanjes introduced in greek in 1982 and proposed for french in 1990. Ther may be institutions, such as a languaj acadmy, hos brief is to gard th purity or consistncy of a riting systm. But always ther ar non-institutionlized forces tendng to create inertia (th supertankr syndrome): once a riting systm is oprating on a larj scale, thru unversl litracy or internationly as a lingua franca, then chanje may be hardr to bring about than in a mor restrictd environmnt (unlike english, duch has had litl dificity with chanje in th 20th century); one obstacl may be orgnizationl (th politicl wil to implmnt chanje may be lakng), but anothr obstacl is bound to be that litrat adults ar very rarely going to be able or wilng to make th efrt to chanje th riting habits of a lifetime, wich means that th timetable for chanje in riting systms is indisolubly bound up with th chanje of jenrations. Th student of riting systms needs to ber in mind th strength of these diverse forces, wich can far outwei any intrinsic linguistic factrs in determnng th typ of riting systm a society uses.

9. Systemic perspectivs

Riting systms hav so far been considrd in ther historic and socio-politicl context. A no less importnt aspect is howevr that they only oprate across societis thru th medium of individuls functionng as riters and readrs. How individul users brains process languaj into and out of th ritn form is a centrl sycolojicl question for th student of riting systms, and its ansr depends on th intrinsic featurs of each particulr systm. We hav alredy noted th consequences th introduction of th alfabet had for th potential of th individul in society as a hole,

and that this shift arose from th simplicity of th alfabetic concept of fonograficity (symbls representng sounds) compared with previus systms. Such simplicity ment esir mastry of th systm by th lernr without exessiv investmnt of time, and esir handing of it by riters and readrs alike. Th study of riting systms hylyts this advantaj of th alfabet by comparing its efects with riting in non-alfabetic systms such as chinese and japnese, wher even skild readrs do not expect to be able to read evry word in evry text, nor do riters expect to be able to rite down watevr word they myt wish to represent (tho for varius reasns such limitations ar in practis less serius than this acount may make them sound). In theory, at least, th alfabet by contrast enables evry word in a text (wethr familir or unfamilir, undrstood or not undrstood) to be pronounced by th readr, and enables evry word that a riter can speak then also to be ritn down. Howevr, this facility, wich in theory th alfabet shud by its very natur provide, is seen not to be presnt to an equal degree in evry languaj hos riting systm uses th alfabet. Languajs wich hav only recently adoptd th roman alfabet (like som in Africa in th 20th century, or som in eastrn Europ only a few centuris ago), or wich thru th centuris have radicly chanjed ther spelngs to maintain th mach with pronunciation (italian and spanish for instnce, in ther evlution from latn), exploit th advantajs of th alfabetic systm very efectivly: once one nos wat sounds th letrs standrdly represent in th systm, most words can be ritn and red with confidnce and acuracy. Modrn english by contrast can be seen widely to ignor th alfabetic principl of havng a predictbl relationship between th ritn and spoken form of words. Comparing th riting systms of difrnt languajs in this way enables th systemic strengths and weaknesses of each to be identifyd.

10. Fonografic perspectivs

So we aproach th cor of th study of riting systms, wich has to do with th precise ways in wich languajs ar representd in riting. For an alfabetic riting systrn, wher th letrs in principl stand for sounds, a standrd analysis wil first establish two lists. One wil sho th symbls, wich may, as in english, lajly consist of th 26 letrs of th alfabet, but may in othr languajs consist of a larjr or smalr set of letrs, or include variants on th letrs, as shown by diacritic marks (accents). Th othr list wil sho th sounds (fonemes) that make up th sound-system (fonotojy) of th languaj concemd; th resultng list usuly looks

simpl, but in practis fonemic analysis ofn throws up such problms as to cal th very concept of a foneme into question (eg ar 'Wh' and 'W' or th U of *but/put* seprat fonemes in english?); nevrthless, th concept is undoutdly a useful tool for deciding how words shud be spelt. Th next staje in th analysis is to alyn th two lists, to se how far th letrs and fonemes corespond. Wher an alfabet has been desynd specificly for a languaj, as was th case with ancient greek and latn, a hy degree of corespondnce can be expectd, and th systm then tends to be straitforwrd. Wher an alfabet is borod for use with a new languaj, as hapnd wen Old English adoptd th latn alfabet in th 7th century, th systm is usuly stil quite straitforwrd, but som dificltis may arise if th new languaj contains sounds for wich th givn alfabet has no suitbl letrs. In those circmstnces, sevrl devices may be employd: new letrs may be introduced, or a singl letr may serv to represent mor than one sound (both of these devices ar found in Old English); or a singl letr may be givn altemativ sound valus distinguishd by diacritics (such as E ritn altemativly as *é, ê, è, e*, in French), or two letrs may be used togethr as a digraph to represent a singl sound (such as Ch, Th or Sh in modrn english). Digrafs ar howevr inherently ambiguus as th letrs may also hav ther seprat valus (contrast th digraf Sh in *bishop* with th seprat valus of S + H in *mishap*). If th abov spelng devices ar used in a regulr way to represent th sounds of a languaj predictbly, th riting systm may stil be esy to lern and to use acordng to socialy aproved conventions. Th student of riting systms wil in that case probbly not wish to do much mor than rejistr th abov sound-symbl corespondnces and any particulr patms of diverjnce from them. Part of th study of any riting systm howevr also involvs examnng th sorce and status of spelngs: ar they laid down by an oficialy recognized authority based on detaild study of th linguistic data, or ar they th pragmatic outcom of centuris of custm and practis by riters, printrs and teachrs? Ar ther aknolejd sorces of refrnce based on oficial spelng principls and givng authoritativ gidance on questions of dificlty, or is ther a ranje of sorces that do not always agree, and set out merely to record observd usaj? Wat mecnisms myt ther be for atendng to any problms that users may experience with th systm?

11. Th problm with english

This concept of 'atendng to any problms' implys, as was alredy maintaind erlir in this paper, that al riting systms need to be studid for th purpos of keepng them undr revew and making ajustmnts from time to time in response to user demand. Yet such thinkng has for long been quite foren to th english-speakng world, wher students of riting systms hav in recent years tendd to adopt a purely academic rathr than a practicl aproach, altho english spelng is recognized worldwide as constituting a severe problm for lernrs and users jenrly, atractng verdicts like "Th worlds most awsm mess" (Mario Pei) or "An insult to human intelijnce" (Mario Wandruschka). From straitforwrd orijns over 1,000 years ago, english spelng has stedily dejenrated evr since, abov al thanks to massiv admixturs from othr riting systms, most notebly french and greek (as translitrated thru latn) wich both use letrs acordng to quite difrnt rules from nativ english(th alien use of letrs in th spelngs *blancmange* and *psychology* wel ilustrates th point). Not merely hav these (and many othr) imports nevr been asimlated into th nativ english riting systm, but radici chanjes in th pronunciation of english around th 15th century (especialy th Gret Vowl Shift) hav larjly undrmined th latrs erlir regularity too (hence anomalis such as th difrnt valus of EA in *to read, he read*, or th silent letrs in *knight*). On top of that came th influence, especialy in th 16th century, of scolrs keen to indicate th etmolojy of words thru ther spelng ('scolastification' of spelng), in defiance of regulr sound-symbl corespondnce (hence B in *debt*, *doubt*) and (as it turnd out) somtimes on th basis of mistaken etmolojicl analysis as wel (*island* shud hav no S!), and a jenrl failur to ensure consistency (hence *speak* with EA but *speech* with EE). In yet other cases th reasn for a spelng is simply not nown (wy G in *foreign, sovereign*?). Th few exampls of unpredictbl spelng just givn ar in no way exeptionl, but ar fundmently caractristic of th way th english languaj is ritn; and th categris of regularity described represent merely th tip of a larj iceberg. No othr major languaj has a riting systm that uses th alfabet with remotely comprbl unpredictbility.

12. Empiricl and sycolojicl perspectivs

Th prime motivation for th study of riting systms needs to be th conviction (comnplace enuf, one wud hav thot) that litracy is of criticl importnce for th fulfilmnt of individul lives and for th atainmnt of social welbeing. We may considr that erly aplications of th alfabet in th desyn of riting systms wer markd by a kind of primal inocence: they used letrs as letrs wer first intendd to be used, to represent th sounds of speech. But as th centuris went by and th european tradition of litracy was bilt up, like Troy, on foundation aftr foundation of acumulated remains from th past, so th temtation to forget th primal rationale of th alfabetic principl grew evr gretr in som languajs, in non mor so than in english. We then need to examn th consequences of this developmnt for th stated goal of maxmizing litracy. Ther hav been comparativ studis shoing that standrds of education in english speakng cuntris lag behind those elsewhere Ther hav been comparativ studis shoing that individuls find th aquisition of litracy skils far hardr in english than in othr languajs. Ther is widespred, indeed groing concern about standrds of litracy in english speakng cuntris, alongside profound and bitr disagreemnt as to th best way to teach litracy skils in english. Indeed this disagreemnt myt be betr described as confusion, as methodolojicl fashns swing from one extreme to anothr (from fonic to visul and bak again) without, it apears, solvng th problm of efectivly teachng th yung th skils of litracy in an alfabetic riting systin hos chief caractristic shud be its simplicity. Th ultmat proof of this has been provided repeatdly over th past 150 years by th dramatic success of lernrs in aquiring initial litracy skils via regulrized english riting systms, th most recent and best reserchd of wich has been th Initial Teaching Alphabet (i.t.a.). Its desyn and th analysis of its efects over th past 30 years is one of th proudst practicl achevemnts of th study of riting systins, but its mesaj is today in danjer of being forgotn. An incidentl findng of th reserch into efects of th i.t.a. was perhaps mor disturbng than its main conclusion that regulr riting systms ar mor esily mastrd than iregulr: it was th sujestion that being forced to lern a fundmently iregulr riting systm actuly damajs th intlectul developmnt of th yung lernr, by comparisn with th trainng in acurat obsrvation and lojicl thinkng wich mastrng a regulr riting systm entails. Here we hav th point of th erlir analojy with air: human beings ar damajd by poluted riting systms, much as they ar by poluted air.

13. An intrnationl perspectiv

The specific problms of english ar of enormus importnce, in th first place for standrds of education in english speakng cuntris, but perhaps no less importntly for th futur of english as th prime medium of intrnationl comunication. It is thru th english languaj mor than any othr that cuntris and orgnizations and individuls comunicate with each othr across frontirs, and for this comunication to ocur, those involvd hav to hav aquired an apropriat comand of th languaj. Th handicap that english spelng imposes on lernrs varis with th lernrs circmstnces. Wher lernrs ar tryng to mastr ther first litracy skils thru english as a foren languaj, th dificlty is imensely gretr than for nativ speakrs: th latr merely hav to lern th ritn forms for words they mostly alredy no, in othr words they hav th suport of th familir sounds of words; but th formr ar tryng at one and th same time to lern th skils of de- and encoding riting, to lern unfamilir vocablry, and to link th sounds of those unfamilir words to ritn forms wher in many cases ther is inadequat corespondnce between th two; th task al too ofn proves beyond such lernrs. A secnd categry experiences less dificlty: those ar th ternrs ho ar alredy litrat in ther own languaj, so at least they ar not tryng to mastr th mecanics of readng and riting at th same time as lernng a foren languaj, and in that respect they may even hav an advantaj over nativ speakng lernrs; but again th lak of a predictbl corespondnce between th ritn and spoken forms of words causes dificlty, especialy for lernng th corect pronunciation of words. So wen th riting systm of english is being studid with a vew to its modification, th needs of non-nativ speakng lernrs hav to be taken into acount as wel as of nativ speakrs. It is self-evidntly also to th advantaj of nativ speakrs that non-nativ speakrs shud find it esir than now to aquire a good comand of english. One of th dificltis faced particulrly by speakrs of othr european languajs (and equaly by english speakng lernrs of those languajs) lies in arbitrry variation between th ritn forms of related words from one languaj to anothr. This kind of variation is seen abov al in patrns of consnnt dublng (alredy notorius as a problm of english), as seen between english *accommodate*, french *accommoder* italian *accomodare* and spanish *acomodar*. Th student of riting systms therfor needs to examn related languajs to se how they deal with sound-symbl corespondnce in th case of intrnationly cognate forms. Indeed in th european context at least ther cud be a useful long term objectiv to bring th ritn form of difrnt languajs as close togethr as th difmces in ther spoken forms wud alow, with th aim of facilitating ritn comunication between

languajs. Not merely wud th lernrs task be made esir, but th ritn form of words wud becom jenrly mor intelijbl to non-nativ speakrs.

Ther 'gramr of lejbility' wud be improved.

14. Riting systms: an intrdisiplinry study of permnnt importnce

Th study of riting systms is an intrdisiplinry activity. It requires a brod vew of th place of litracy in human histry worldwide, a concept of its role in society today, and a basic undrstandng of its sycolojy, involvng th infraction of ear and y, and th bi-directionl procesng pathways of readng and riting. It also requires a nolej of languaj and languajs, and th ability to undrtake fairly precise fonetic and fonolojicl analyses. This paper has implicitly argud that th study of riting systms shud be undrtaken in a humanistic spirit and with a sense of social responsbility. It shud go beyond merely observng how riting systms work, and demand valu jujmnts, askng how wel suitd particulr riting systms ar to ther purpos. Ther purpos must hav to do with how individuls use riting systms, each in ther own social situation, with th undrlyng presumtion that th quality of a riting systm shud be jujd by how wel it machs th needs and abilitis of its users. Th startng point for th authr of this paper hapns to be th english languaj, th gross deficiencis of hos riting systm hav natrly been a major spur to his studis; but th world as a hole has an equal intrest in a criticl aprasal of english. Not merely ar ther today serius litracy deficits in english-speakng cuntris, with a concomitnt jenrl educationl shortfal (those with specific lernng dificltis being most severely afectd) and constnt iritations (to say th least) in evryday tasks of ritn comunication; but th task of lernng english as a non-nativ speakr is made unecesrly dificlt by th spelng, with, at a fairly trivial levl, th recurent danjer of mispronunciation and, mor seriusly, ofn insuperabl obstacls for lernrs tryng to aquire ther first litracy skils in english as a foren languaj. But if many imediat concerns stem from th particulr problms of th english riting systm today, that shud not alow us to lose syt of th fact that, as a french prime ministr recently said in th context of french spelng, curent riting systtns need to be kept permnntly undr revew. For ther most fundmentl featur is ther tendncy to becom out of date. Riting is a way of representng languaj, hos ultmat manifestation is th spoken word, and th pronunciation of words chanjes thru time, sometimes very sloly, somtimes with bewildrng rapidity (as english did in th 15th century). If a riting systm that was orijnly desynd to mach th

sounds of speech remains unchanjed despite such chanjes in pronunciation, then it loses th transparency of reflectng th spoken word; and then dificltis begin to set in. So even th best desynd, most modrn riting systin requires careful monitmg, to ensure it can be kept up to date. Put thus, th task may seem simpl, wich it is most certnly not, but it is th fundmentl, continuing justification for th study of riting systms. Just as th quality of air needs to be studid to ensure human helth, so th quality of riting systms needs to be studid to ensure human litracy.

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