

The Research and Training Center on Independent Living  
at the University of Kansas

# **Effective and Efficient Research Translation for General Audiences**



**Literature Review and Recommendations**

**By Cindy Higgins**

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## **Literature Review and Recommendations**



This report is a product of a dissemination and utilization project Award #H133A980048 funded by the National Institute on Disability and Rehabilitation Research in the U. S. Department of Education. As part of this project, the Research and Training Center on Independent Living reviewed research findings on translating scientific reporting for a general audience. This research is being used to develop user-friendly abstracts stored on an interactive WWW database (<http://www.GetRIIL.org>) with content determined by stakeholder input.

Published by The Research and Training Center on Independent Living, The University of Kansas, 1000 Sunnyside Ave., Room 4089 Dole Center, Lawrence, KS 66045-7555, (785) 864-4095  
<http://www.rtcil.org>

Higgins, C. A. (2001). Effective and efficient research translation for general audiences: Literature review and recommendations. Lawrence, KS: The University of Kansas, Research and Training Center on Independent Living.

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# Introduction

The ultimate purpose of research in a particular field is to improve quality of life. Lack of meaningful information adds confusion, distress (Harry, Allen, & McLaughlin, 1995), and anger (NADDC, 1991) to people with disabilities and their supporters who must become experts on topics outside the mainstream, such as services, legal rights, housing, and financial assistance.

Despite active research in the disability field, “There is a sense that the vast amount of research on disability and rehabilitation has not filtered through to be used to the fullest by persons with disabilities and their families” (Leung, 1991). That a gap exists between what educational research and demonstration projects produce and what is actually practiced has been well documented (Fuchs & Fuchs, 1990; Kaufman, Schiller, Birman, & Coutinho, 1992; Hoshmand & Polinhorne, 1992; Kaestle, 1993).

Waste of the research treasure trove applies to other fields where published work is rarely heard of once published in scholarly publications or unpublicized technical reports. For instance, physicians ranked journals, the typical venue for research publication, as their least used information source and instead relied more on colleagues (Gruppen, 1987). This finding is not surprising, because dissemination studies long have documented that the most preferred method of receiving information is one-on-one from trusted sources, most notably peers. Lack of end research use also can be explained by the inevitable wheat-to-chaff ratio in all human efforts. The overabundance of “wheat” published in disability alone as with information in related fields has created an information cornucopia that floods traditional and new media vehicles.

Then again, researchers may regard their research more highly than the

general public who often view research as irrelevant and “conducted primarily for the amusement of the researchers” (Fuchs & Fuchs, 1990). The public also may not understand that scientists often do experiments that are a single point in a continuum of accumulating knowledge. Often these experiments are done for theory alone or are experiments that seemingly lead nowhere.

The gap widens when taking into account researchers’ traditional desire to distance themselves from the “subject” of their study (Zarb, 1992), a distance even greater from under-represented groups—those living in poverty and from racial, ethnic, and cultural minority groups (Westbrook, 1994).

Researchers also tend to avoid having their research publicized by the popular media. They may not want to share results with the press because they:

- Lack control over the final print version.
- Fear being misquoted or a hostile press (NASW, 1996).
- Doubt that the reporter can translate technical information correctly and/or worry that their work will be taken out of context.
- Have concern that results are preliminary and need more testing (Rodgers, & Adams, 1994).
- View the general audience as non-rational or unable to read and apply professional literature (Malouf & Schiller, 1995).
- Consider the public too practical and not understanding, nor appreciative of open-minded inquiry.
- View peer-reviewed journals or conference presentations as the appropriate venue for research results.
- Think peers should know results before general public.
- Believe colleagues would condemn them for being “publicity seekers,”

especially if findings are sensationalized as “a major breakthrough” or “startling discovery”.

These perceptions and attitudes can make researchers feel and act superior to a lay audience. That audience, in turn, may feel questioning reflects poorly on its own comprehension and keeps silent about confusion (Crismore, 1982). Questioning and reading difficulty should not dismay readers, as Robert A. Poteete, managing editor of *Psychology Today*, wrote years ago:

. . .remember, that no matter how eminent and wise and fashionable a social scientist is, he still puts on his pants one leg at a time. On the other hand, . . .remember that a social scientist is not necessarily a madman simply because he sounds like one, and writes murky jargon in passive verbs and latinate nouns. .

Dissemination, too, as practiced by researchers, is a way to document findings rather than actively promote knowledge use or immediately solve problems. Researchers record study results in scientific journals or through presentations at scholarly conferences and typically view these outlets as their end dissemination responsibility (Backer, 1995; Newman & Vash, 1994).

Both journals and scholarly conferences have small-in-number audiences and often concern tiny information pieces of a far larger disability topic. Also limiting widespread dissemination is the fact that research publications are geographically inaccessible, (e.g., journals are housed in college, not public libraries). They also are not advertised to the general public and often are printed by grant-supported projects that vanish when funding ends. Without a supporting organization, these publications cannot be stored and are not available.

Conferences, the live venue of research result transmission, too, are relatively inaccessible. Typically invitational, conferences are not publicized beyond a select audience and are financially costly.

These drawbacks once again widen the gap between researcher and user, which caused the National Institute on Disability Research and Rehabilitation to fund the National Center for the Dissemination of Disability Research (NCDDR) to study the problem and produce dissemination solutions. In its findings, the NCDDR (1996) concluded that information sources should be readily available, easy to use, of high educational value, informative, relevant, and accurate.

To bring scholarly skywriting down to earth so that it benefits end users, a science writer should heed author DeWitt Scott who stated, “Effective is saying the right things. Efficient is saying things right.”

**. . . “information sources should be readily available, easy to use, of high educational value, informative, relevant, and accurate.”**



# Effective Research Reporting

Common to studies on information dissemination is the principle that effective dissemination is the result of knowing information that end-users identify as important and likely to need, so that information can be packaged in forms and language preferred by users (Westbrook & Lumbley, 1990; Pollard, 1989). This information can be obtained from Participatory Action Research (PAR), an approach that emphasizes functional research outcomes and emphasizes a collaborative attitude toward research and training (Fenton, Batavia, & Roody, 1993; Bruyere, 1993; Heller, Peederson, & Iller, 1996.) A bridge between research and knowledge utilization, PAR in every research phase increases the probability that problems are not only identified and solved, but also that constituents find the solutions worthwhile (Whyte, Greenwood, & Lazes, 1989; Bruyere, 1993).

End-user involvement leads to relevance and trust, key ingredients of knowledge utilization. To accept a new viewpoint, innovation adopters must let go of old opinions and want to change. They also must be convinced that the innovation will work in their particular situation, meeting specified needs over time without excessive side effects (Carillo, Lumby & Westbrook, 1984; Hall & Hord, 1987; Backer, Salasi, & Rich, 1991). Often people have fears, resistance, or anxieties regarding new information that can thwart their desire to change and these emotions should be addressed in messages (Beckwith, 1996).

As NCDDR concluded, “a better mousetrap doesn’t mean people will buy it,” because information users must be ready to take action, be comfortable with the new information, have confidence in product operation, afford it, trust the manufacturers, and believe the product is an improvement on others (NCDDR, 1996).

**“...information users must be ready to take action, be comfortable with the new information, have confidence in product operation, afford it, trust the manufacturers, and believe the product is an improvement on others.”**



# Efficient Research Translation

The problem of getting research results to the public is not caused by lack of research knowledge about information dissemination, which itself has more than 10,000 literature citations and has been actively studied since 1920 (Backer, 1995). Instead the problem is putting the principles of dissemination and technical writing into practice. Both fields unite in the suggested practice of targeting an audience, then selecting relevant information to transmit in the most concise, easily-understood way.

## Information Selectivity and Distraction Elimination

“Saying the right things” (message effectiveness) works best when “saying things right” (message efficiency). The latter breaks tradition with the long-standing scientific practice of indirect communication. Wrote semanticist S. I. Hawakawa (1972):

“Scientific writing, as exemplified in technical journals, offers some appalling examples of almost dead-level abstracting, which is the reason so much of it is hard to read. . . .They go on indefinitely, reciting insignificant facts, never able to pull them together to frame a generalization that would give a meaning to the facts.”

Researchers might counter that research doesn’t always lend itself to neat solutions and succinct bottom lines; phrases such as “appears to be,”

“possible,” or “has a tendency to” may be necessary because of a study’s complexity or scientific preciseness.

Journal articles, typically required by publications to be ten to twenty pages long, overwhelm general readers, especially with an article’s mandated abundance of references to previously published articles. Citation-laden writing wearies readers accustomed to general media in which the author assumes authority on topics and includes only a sprinkling of references to others (if at all or saves sources for quotation purposes).

“A scientific journal piece is written after months or years of collecting data: The writing is the frosting on a cake that took forever to bake. The writing is dry. . .and narrowly focused, any veering off from it is considered “interpretation” and tolerated only in the last paragraph of the discussion. . .A scientist aims to tell the already informed audience about a particular point, and how he or she came to that point. They want to convince by using evidence, and it doesn’t matter how long it takes or how many charts must be used to make a case. A journalist wants to explain, educate, and basically not bore the pants off a reader.” (Blum & Knudson, 1997)

Research translators should recognize that the compelling style of newspapers such as *USA Today*, electronic communications, and the World Wide Web has introduced more user-friendly information and allowed consumers greater selectivity. In recognition of this trend, the makers of glossy reports in the business field eliminate accounting complexities to streamline information. By focusing attention on selected factors, readers get the information they need to make judgments. The practice of selecting pertinent information applies to other audiences facing decreasing time and information overload.



Once the most useful information is selected, experts recommend telling readers the message content in advance and repeating it to increase retention (Glaser, Abelson, & Garrison, 1983; Charrow, 1979). Journalists have traditionally put this recommendation into practice when they stack the first paragraph of a newspaper story with the five “w’s and h” (“who, what, when, where, why, and how”). This news writing practice is part of the inverted pyramid article formula in which facts of decreasing significance flesh out the initial summary. Of time-tested effectiveness, the inverted pyramid facilitates message delivery, because readers quickly learn the bottom-line news. If interested, they can continue reading and do not have to finish the article to learn the most salient points. Presenting the most important news upfront also



satisfies reader curiosity and is the natural way of spreading information. For instance, if a person dies, the news announcer tells the person’s name and death circumstances, then adds supplementary details rather than beginning an account of the person’s life from birth to death.

Analogies also repeat and reinforce messages (Klapp, 1986) in the form of metaphors that compare two generally unlike things for the purpose of illustration, or similes, a metaphor subset. Stated Malcolm Ritter in his article “Writing Science Articles Without a Ph.D.”:

“Researchers recently found evidence that a particular nerve helps the brain store emotionally charged events in long-term memory. My lead: “Why do you remember prom night so well when you don’t have a clue what you did two nights later? In part, a study says, you can thank a nerve that runs to your brain from deep in your innards.”

Breaking information into manageable chunks (Bartlett, 1991) increases readability and can be done with graphics, subheads, bullets, and other

typographical devices. For this reason also, science translators might profit from writing two or more articles from one report, because a general audience doesn't have to be presented with all known facts relating to a research study, nor a complete explanation of related information.

Once pared, tell why the research is news. The public is interested in science that has a direct effect on their lives and wants to know "what's in it for me." Stories on science methodology typically don't interest them. They want the "box scores," not play-by-play details. Writers trying to reach larger



audiences can learn from the press release, the standard tool of the public relations field, which attracts readers by highlighting a newsworthy aspect of the research in its title. The release's introduction covers the research's major points and gives readers

a good idea of remaining contents. A quotation from the researcher adds credibility, as do end-user quotations.

Messages involving science, particularly health, also may be framed in terms of benefits or loss. In a study on perception shaping and health messages, Rothman and Salovey (1997) found that people favor certain gain over greater gain. In their study, research participants chose risk to avoid certain loss, but did not act as quickly in the same situation to prevent future health problems. Since nearly all health-related information can be viewed as a benefit or loss, this understanding could be used to promote health behavior and to increase message perception (Meyerowitz & Chaiken, 1987; Wilson, Purdon, & Wallston, 1988). However, message framing has a limited effect when applied to receivers who have just received undesirable information about their condition (Aluver & Rubin, 1990; Lerman, et al., 1992).

## **Concise Communication**

Selecting information and eliminating distractions are pointless unless the message itself is written clearly. The *Publication Manual of the American*

**“Say only what needs to be said.”**

*Psychological Association*, the writing style book for researchers in the social sciences, forcibly states “Say only what needs to be said” in its section on the need for economic expression. Such caution against jargon,

wordiness, redundancy, and evasiveness bears warrant: Similar to medical and legal practitioners, researchers have spent years learning to communicate in the complex language of their discipline. This complexity involves more than specific vocabulary, wrote language specialist Stuart Chase:

“Professional pedagogy, still alternating between the Middle Ages and modern science, can produce what Henshaw Ward once called the most repellent prose known to man. It takes an iron will to read as much as a page of it. Here is a sample of what is known in some quarters as ‘pedageese’: *Realization has grown that the curriculum or the experiences of learners change and improve only as those who are most directly involved examine their goals, improve their understandings and increase their skill in performing the tasks necessary to reach newly defined goals. This places the focus upon teacher, lay citizen, and learner as partners in curricular improvement and as the individuals who must change, if there is to be curriculum change.*”

I think there is an idea concealed here somewhere. I think it means: “If we are going to change the curriculum, teacher, parent, and student must all help.” The reader is invited to get out his semantic decoder and check on my translation. Observe there is no technical language in this gem of pedageese, beyond possibly the word “curriculum.” It is just a simple idea heavily oververbalized.”

Chase’s comments add to numerous studies concluding that research language is too technical (West & Rhoton, 1992; Senkevitch & Roth, 1981) for

general audiences. Add to this finding that 23 percent of the U. S. population has only rudimentary reading and writing skills, according to the U. S. Department of Education's National Center for Education Statistics, and the gap between research and practice becomes more understandable. The solution, in a perfect world, would be for researchers to test text for clarity by subjecting sample audiences to multiple choice tests, questionnaires, and paraphrasing tasks regarding text comprehension.

Time and expense prohibit this form of testing, which is why many writers rely on formulas (e.g., Fry, Gunning Readability Formula, Smog, and Flesch-Kincaid) for short-cut "readability" testing. Focusing on the number of words per sentence and number of syllables per word, these formulas are based on the theory that shorter sentences and words create more readable text.

Indeed, studies suggest general audiences comprehend best with shorter sentences (i.e., up to 25 words per sentence; ideally 16-word sentences; Smith, 1996). Sentences can be significantly longer or shorter, but on average should be within the 17- to 25-word range. Sentences over 35 or 40 words probably need to be divided into two. The occasional short sentence (e.g., 5 words) can be effective, but, in bulk, cause writing to be choppy and hard to follow. A journalistic rule-of-thumb rule is to limit each sentence to one idea or fact, then read aloud the sentence. Voicing the message can reveal whether sentences are too awkward, confusing, or long.

The drawback to readability formulas is they do not measure comprehension, grammar, or technical or abstract word use. The formulas also do not measure comprehension the same. For instance, the following example rated a 6th grade reading level using the Flesch-Kincaid formula. The Coleman-Liau formula rated the same writing at a 7.9 grade level, and the Bormuth

formula at 8.9 grade level.

*The study is good. People will find it important.*

*The scientists write that exercise will make people happy. That is because it makes people feel good. They feel good inside and out.*

*If more people with disabilities exercise, our nation will be a lot happier.*

Next are two examples—both rated as college-level reading—from current daily newspapers:



*A researcher found that more American boys are using steroids and linked the increase to revelations that Mark McGuire used steroids to bulk up his home run-hitting biceps.*

*Researcher Lloyd Johnston, who has run the federally sponsored annual study for 25 years, said more boys in the eighth, 10th, and 12th grades reported using steroids, and their attitude about the steroids appears to have changed to a belief that they are not harmful.*

*“As many had feared, we think it likely that Mark McGuire’s reported use of androstenedione in the year in which he set a new home run record affected young boys,” Johnston said. “Surely it gave them the idea that it could make them stronger.”*

*The study also found that the use of most illegal drugs, including marijuana, cocaine, heroin, and inhalants, remained steady and that cigarette smoking remained stable, with a small decline among eighth-graders.*

*Drug Use: Teens Hit Steroids, Associated Press, Brigitte Greenberg, December 19, 1999, Grade 16*

\*\*\*

*Don’t throw away the lawnmower yet, but scientists have found*

*a way to stunt the growth of grass and other plants and keep them greener longer by tinkering with a single gene. It could be a dream come true for suburbanites weary of the weekly mowing ritual.*

*The gene relates production of a steroid hormone that causes plants to grow, much the same way similar steroids work in animals. Scientists have now succeeded in manipulating the seed to create dwarf versions of standard plant species, according to research published today in the journal Proceedings of the National Academy of Sciences.*

*Stunted Grass May Make Mowing Lawns Obsolete, Associated Press, December 19, 1999, Grade 13.29*



Grade level comprehension doesn't equal years of necessary reader education. It simply means the reading level is sufficient to communicate information. Scoring does not take into account the amount of numerals (which read as short words); citations to previous research studies (each of which can add several words per sentence); acronyms; or abbreviations. Also, not all words and terms can be simplified, because they would lose their exact meaning (Spiegel, 1985): A "myocardial infarction" is not the same as a "heart attack." Formulas, which vary widely, reflect only superficial aspects of the text and do not address word or sentence meaning, nor can they factor in typographical design (e.g., large fonts with ample margins are easier to read than small text bunched together in a sea of gray). However, formulas do serve as an alerting device for text clarity.

Ultimately, neither oral nor written discourse comprehension has anything to do with sentence or word length, according to extensive linguistic and psycholinguistic data. Rather, comprehension depends on logical, grammatical, and contextual criteria (Fitzgerald, 1980).

“The difference between *The Reader’s Digest* and Thoreau, for example, is not in the length of their sentences or the number of syllables in their words, but in what they have to say and how well they say it,” said the inventor of the Flesch-Kincaid formula, D. Rudolph Flesch, who himself pointed out to fellow journalists: “Readability doesn’t mean blindly following a formula. It means trying to write every story so that the average newspaper reader will read, understand and remember it” (Hohenberg, 1973).

## **Grammatical Considerations**

Semanticists, reading specialists, journalists, and other communication experts agree that tedious grammatical constructions create verbal smog. Passive verb use tops their list of grammatical pitfalls (*Passive verb: The report was written by the researchers; active verb: The researcher wrote the report*) and the practice of turning simple verbs into phrases (*e.g., make contact with; have the effect of; exhibit a tendency to, etc.*). Unpruned prepositional phrases and indiscriminate subordinate clauses also add to profundity padding with their excessive sentence embedding. Other grammatical conditions that make processing difficult are conditionals (*e.g., if/then*), adverbs and adjectives, negative conditionals (*e.g., except, if not*), long strings of nouns, and multiple negatives (*e.g., not uncooperative in denying*) (Welle & Farber, 1981). However, linguistic studies also confirm that reducing grammatical complexity on the surface often increases complexity if carried to the extreme (Charrow, 1979). As with readability formulas, writers must prioritize sentence meaning and intent over rigid grammatical rules.

**Wrote George Orwell, English essayist and novelist, of abstract writing:**

**“The writer either has a meaning and cannot express it, or he inadvertently says something else, or he is almost indifferent as to whether his words mean anything or not. This mixture of vagueness and sheer incompetence is the most marked characteristic of modern English prose, and especially of any kind of political writing. As soon as certain topics are raised, the concrete melts into the abstract and no one seems able to think in turns of speech that are not hackneyed: Prose consists less and less of words chosen for the sake of their meaning, and more and more of phrases tacked together like the sections of a prefabricated hen-house.**

## **Specific Word Choice**

In general, conversational words lend themselves better to clear writing than formal, multi-syllabic words. Those that exclude are multi-syllabic; unique to a field; foreign, or built on Latin and Greek prefixes, suffixes, and roots (often rearranged to coin new words). Crismore (1982) stated that words based on these two classic languages inflate empty content and are used as an answer when no other answer is readily available. Technical language of a particular trade or field also keeps “outsiders” at bay and perpetuates elitism as do associated abbreviations that create a verbal alphabet soup.

Abstract words do not so much exclude as they lose readers with their lack of precision. Writers favoring abstract over concrete language run the risk, too, of rising skepticism in readers who may feel abstractions impart scientific meaningfulness to hollow or questionable statements. Abstractions also encourage imprecise reporting. A “sizeable reduction” in disability parking space violations takes on different meanings if the reduction is 10 percent, 40 percent, or 95 percent.

**Economist John Kenneth Galbraith said: “There are no important propositions that cannot be stated in plain language. . . .The truth is not difficult. Complexity and obscurity have professional value—they are the academic equivalents of apprentice-hip rules in the building trades. They exclude the outsiders, keep down the competition, preserve the image of a privileged or priestly class.”**

Generally, multi-syllabic, foreign, technical, and abstract words do impede reading comprehension. Yet, in certain situations, each may be the writer’s best choice and should be used. The ordinary reader can glide through multi-syllables (if shorter words provide a break) and process unfamiliar words as long as these words are clearly explained by definition or context.

## **Don'ts for Would-Be Writers of Scientific Articles for the Public Press**

- Don't overestimate the reader's knowledge and don't underestimate the reader's intelligence. He may not know as much as you about this particular thing—let's hope not anyway—but otherwise he may be as bright as you are—let's hope so anyway.
- Don't try to tell all you know in 500 words. Leave some over for another time. The clean plate rule does not apply here.
- Don't leave out the human interest. Your reader is a human being even if you are only a scientist.
- Don't forget that your reader is interrupting you every ten lines to ask, "Why?" "What for?" or "Well, what of it?" and if you don't answer his tacit question he will soon stop reading.
- Don't say, "this discovery is interesting" unless you can prove that it is, and if you can prove it, you don't have to say it.
- Don't define a hard word by a harder word. . . So, if you want to say "Calorie," say it, but don't make it worse by "explaining" it as "the quantity of heat necessary to effect a rise of temperature of one degree Centigrade of a cube of water each dimension of which is one tenth part of the length of a bar of platinum and iridium alloy lying in the observatory of St. Cloud." If you think you must define the calorie say casually something like this, that 100 calories of energy can be derived from three cubes of sugar or from a small pat of butter, or explain that a man needs to expend 100 calories an hour to keep his body running, and 160 calories if he is working hard.
- Don't think you must leave out all the technical terms. Use them whenever necessary without apology, and if possible without formal definition. People are not so easily scared by strange words as you may think. They rather like 'em. . .

Source: Dr. Edwin E. Slosson, first director of Science Services, a news agency dealing only in scientific news



## Recommendations

Research translators aiming to communicate clearly need to do more than make text understandable; they must ensure they are never misunderstood. This article has pointed out general research translation guidelines to achieve clearer communication.

**1. Incorporate the participatory action model and interactivity into research design to create useful, useable information.** Researchers worldwide have found that involving end users, sharing findings with local experts before publication, and discussing results with all interested parties creates useful research. Once preferred media and indicated level and amount of information are provided, audiences ideally can be tested for message retention and comprehension.

**2. Dissemination practices must clearly show relevance.** Scientific reports, because of their complexity, nature, and length, often leave readers searching for relevance or benefits. Research translators need to answer the questions: Are the results easy to understand? Is the information linked to real life? How will this information benefit readers? Can I package the information differently (e.g., as part of a larger topic)? Summarized research information should provide a concise overview of the topic for both acquaintance and introduction, purpose, methods, findings, conclusions, and recommendations

(if indicated by original author). Methodology, often comprising the bulk of scientific reporting, ranks last in typical reader interest.

**3. Research translators should be aware of the human dynamics of change and information selectivity.** Research writers should understand that people have to be willing to change and their writing should address fears, resistance, and anxieties. West (1981) postulates that the more information that individuals have from which to select, the more those individuals will orient toward information compatible to what they hold true and already accept.

**4. Make information accessible.** Scientific journals housed in academic libraries, professional conferences, and limited edition print runs for books disseminate to a small percent of the interested audience. The World Wide Web is one solution to the accessibility problem. However, information accessibility incorporates more than geographical location and an expanded audience; it also necessitates ease of comprehension. As Wilson, Purdon, and Wallston (1988) wrote, people have unique mental filters, which require a message sender to adapt the message to the mental filter of his or her audience. Bertrand Russell, British mathematician, philosopher, and clarity aficionado, also addressed comprehension when he said that writers sometimes have to choose between clarity and confusing precision. General media is not the same as a scientific journal or roomful of peers versed in the same or similar fields. The essence of clear writing is rewriting. Revision helps correct weaknesses in organization and clarity. All writing can be pruned for excessive wordiness, or superfluous information.

Each piece of writing, too, should stand alone and not require extra

information to make it understandable. Authors need to continually question whether their writing is that of the everyday rather than academic world. Reading sentences aloud and imagining reader response are both methods to test for audience comprehension.

**5. Understand the flexibility of mechanical rules and formulas.** Writers summarizing articles need to understand how language works and how people comprehend language. Therefore, communication should be directed to the audience—not above, nor below. Readers should be comfortable with a publication and not feel as if they were “outsiders.” Shorter sentences, lack of technical words, and examples that relate to the reader all make reading research studies more comfortable.

**6. Combine the preciseness of a scientific abstract with the allure of a press release.** Both typically report information on one page of text and provide readers the opportunity to explore the topic in greater detail, if desired. (See appendix for examples). Think education and entertainment rather than inform.

## Phrases to Avoid in Lay Writing

a considerable amount of	much
a considerable number of	many
afford an opportunity	let
a great number of times	often
a majority of	often
a number of	some
accompany	go with
accounted for by the fact that	because
adjacent to	near
apparent	clear
are of the same opinion	agree
as a means of	to
as of this date	today
as to whether	whether
at the conclusion of	after
at the present time	now
by means of	by
component	part
consensus of opinion	consensus
deem	think
due to the fact that	because
echelons	levels
employ	use
endeavor	try
equivalent	equal
evidenced	showed
facilitate	ease, help

for the purpose of	for
give an account of	describe
has the capability of	can
in order to	to
in respect to	about
in the amount of	for
inasmuch as	because
initiate	begin
is defined as	is
it has been reported by Smith	Smith reported
it is apparent that	apparently
it is clear that	clearly
it is often the case that	often
it may, however, be noted that	but
lacked the ability to	could not
majority of	most
make preparations for	prepare
make reference to	refer to
methodology	method
not later than	by
of great theoretical/practical importance	useful
on account of	because
on no occasion	never
on the grounds that	since
parameters	limits
penultimate	next to last
perform	do
prior to	before
provided that	if

referred to as  
relative to  
resultant effect  
so as to  
subject matter  
subsequent to  
take into consideration  
terminate  
the great majority of  
utilize  
whether or not  
with the possible exception of  
with the result that

called  
about  
result  
to  
subject  
after  
consider  
end  
most  
use  
whether  
except  
so that

**Example 1:** *Bullets condense information. Research specifics are at end. This information originally appeared in a press release by Yale University.*

### **Disabilities Don't Raise Insurance Costs**

A new survey of human resource managers has found that companies' health, life, and disability insurance costs rarely rise because of hiring employees with disabilities, but that attitudinal stereotypes about people with disabilities are still pervasive in the workplace, causing them to be hired less and fired more than workers without disabilities.

The survey was conducted by Cornell University's Program on Employment and Disability and other research groups. Most HR professionals surveyed also reported that:

- Their companies now have disability management programs and that such programs really help the companies comply with ADA regulations.
- The best way to combat attitudinal stereotypes toward workers with disabilities is through visible commitment to change by top management and throughout training.
- It isn't difficult to adapt training and working materials to accommodate employees with disabilities.
- A continuing barrier for employees with disabilities is supervisors' lack of knowledge about which workplace accommodations to make for those employees.

#### **Other significant results:**

In general, large and medium-sized organizations provide accommodations for employees with disabilities more often than smaller organizations did. Few companies overall—less than 29 percent—offered such staples as modified training and testing materials for people with disabilities, and only 34 percent changed supervisory methods to accommodate employees with disabilities.

Respondents reported being least familiar with how to accommodate applicants and employees with visual or auditory impairments. Almost half of the respondents were not familiar with teletypewriters or relay services; more than half were unfamiliar with adapting print materials to assist people with vision impairment.

Collaborating with the Cornell group were researchers with the Society for Human Resource Management (SHRM), the Lewin Group, and the Washington Business Group on Health. The four-year grant funding the study was awarded by the U. S. Department of Education's National Institute on Disability and Rehabilitation Research.

About 1,400 randomly selected members of SHRM in small, medium-size, and large U. S. organizations were surveyed by telephone. The response rate was 73 percent, with 43 percent of the respondents working at organizations of fewer than 500 employees and 32 percent working at organizations of 2,500 employees or more.

Susanne Bruyere, principle investigator with Cornell's Program on Employment and Disability, says she hopes the surveys' results will be a first step in educating employers.

**Example 2:** *Information is highlighted with quotes that draw in readers with phrases such as “ticket to the nursing home,” good news/bad news,” and “raises a red flag.” This information appeared in a press release by Cornell University.*

### **Disability Among Elderly Not Always a One-Way Street: Nearly One-Third Regain Independence in Activities of Daily Living**

A sizable minority of disabled older people living in the community recover their ability to perform essential activities of daily living (ADLs), such as bathing, dressing, and walking, over a two-year period, according to a new study by Yale University School of Medical researchers.

Their study, published in the *Journal of General Internal Medicine*, refutes the popular perceptions that ADL disability invariably leads to further decline and increasing dependence. “There is a misperception among the lay public as well as the medical community about the ability of older person to recover from disability, than once an older person becomes disabled and dependent, it means a ticket to the nursing home,” says Thomas Gill, assistant professor of medicine (geriatrics) at the Yale University School of Medicine. “But our study showed that a substantial minority regained their functions.”

The Yale researchers studied 213 residents of New Haven, Conn. All were 72 years of age or older and disabled in one or more of the ADLs, requiring help from another person to perform functions such as bathing, dressing, walking, eating, toileting, or grooming. Participants were followed for up to two years to determine whether they recovered the ability to perform ADLs independently. Nearly 30 percent of the people in the study regained ADL independence. However, all participants were not equally likely to recover. The Yale team found that the strongest predictor of recovery was age: Participants aged 85 or younger were more than eight times as likely to regain independent ADL function than those aged 86 and older.

These findings are consistent with previous research. But this is the first community-based study that tried to identify the factors—besides age—that predict recovery from ADL disability. The group found that other than age, intact cognitive function (including memory), high mobility, and good nutrition were each independently associated with ADL recovery. According to Dr. Gill, these factors may serve as markers of resiliency in the older population.

This study has some important implications. “It’s a good news/bad news situation,” says Dr. Gill. It offers hope for the “young old,” those up to age 85 (and their caregivers) that once disabled, they will have a high likelihood of recovering independence in ADL function. Unfortunately, people older than 85 who were disabled are unlikely to regain their ability to function independently.

“This finding raises a red flag that the ‘old old’ group needs more aggressive treatment or rehabilitation,” adds Dr. Gill. “It may be even better to target special preventive efforts to forestall the onset of ADL disability.” Such strategies might include treating chronic medical conditions, preventing falls and increasing daily activity. Other interventions—to strengthen muscles, improve balance and gait, provide better nutrition and pay closer attention to medications—may also be in order.

The National Institute on Aging (NIA) has estimated that \$15 billion is spent annually for long-term care for those not able to remain in the community because of disabilities in their ADLs. Even a small reduction in the number of people who lose ADL independence would translate into large health-care savings, Dr. Gill points out. And this is particularly important because the number of Americans older than 85 could reach 15.3 million by 2050, a figure five times higher than that population group today.

**Example 3:** *This is an abstract from the RTCIL WWW database.*

### **Translating Self-Determination Concepts Into Practice**

Having control over one's life is the bedrock of the self-determination concept. Much has been written about the self-determination concept, but translating that concept has been challenging.

Supporters often struggle about choices they consider unwise, especially those concerning health, safety, community acceptance, and general welfare. They view the self-determination concept as all-or-nothing and believe that adults with severe disability do not understand consequences to their actions. This gives rise to overprotection. The issue should not be whether to honor or disregard choice. Instead it is how to present information so that the individual can make his or her informed decisions. However, in situations where the person's choice would be a health or safety risk, intervention would be necessary.

Although programs have made advances from fitting people into preexisting services to emphasizing personal control, flexibility, and varied lifestyles, they still tend to be influenced more by their program and policy rules than the individual needs.

One way to eliminate barriers is for systems to change policies and use a voucher funding system that gives consumers the power to shop and purchase the services they want. On an organizational level, service providers can create a climate that encourages consumers to solve their own problems, build on their opportunities, and challenge traditions. Other things that service providers can do is to:

- Build trust and provide the stability that encourages shared decision making and willingness to accept feedback. Because this can be difficult with high staff turnover, foster personal relationships outside the service system.
- Know the person by spending time with the person, finding out his or her likes and dislikes. Ask about goals, do informal and formal skill assessments, and talk to the person's friends and family.
- Build in opportunities for daily choice making and introduce new experiences.
- Adapt the physical environment to promote independence.
- Teach self-determination skills (for example, communication, decision making, problem solving, personal advocacy).

To help Denise, 38, a woman with severe cognitive disabilities who had lived in 10 different group homes, have a home of her own, a service support team spent time with Denise to determine her likes and dislikes. They asked Denise about her preferences, and helped her find an apartment, roommate, and part-time clerical job that she liked. Working with her preferences, they scheduled daily and weekly activities and incorporated choices in her schedule. To promote independence, they made the schedules in pictures and color-coded her stove dials. They showed her how to plan meetings with a picture book agenda and taught her to make her own schedules. They helped Denise meet people and maintain contact with her friends and offered encouragement during her good and bad times. After three years, Denise lived in the same apartment and with the same roommate. She participated in more community activities and regular meetings with a self-advocacy group. Her once challenging behavior improved and her self-injury and window breaking were rare events. When Denise did act out,

the staff looked for communication misinterpretation or to see whether they themselves had been overbearing.

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