
The Value of Currency

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ABSTRACT

MAINTAINING CURRENCY—KEEPING UP—is an occupational requirement for knowledge workers which is backed by ethical, legal, and social expectations and powerfully reinforced by the incentive to preserve the value of one's human capital—i.e., one's stock of knowledge and skill. But no particular level of currency is socially required; the levels actually attained and the costs (mainly in time) paid can vary enormously. These costs are maintenance costs; the value of the stock maintained does not necessarily increase and may even decline. Evaluation of embodied stocks of knowledge is holistic and coarse, insensitive to small changes, a fact which helps explain the vagueness of social requirements of currency. The value of individual inputs (e.g., reading an article) can ordinarily not be measured.

INTRODUCTION

When people ask for information about something, the assumption is that they want current information, that is, information about how things are now—just as one assumes they want correct information rather than misinformation. Unless otherwise specified, information means current information in the sense of information about the current state of the world. Even when people ask specifically about the past, one assumes they want to know what is currently known or thought about the past and not what people used to think. And if they ask about something that is presumably unchanging,

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like the value of some physical constant, again they want to know what the current view of the matter is, not what used to be thought. The assumption of currency is the default assumption; if old information is wanted, a special effort has to be made to make clear that that is what one wants. Of course, old information may still be good—it may describe something that has not changed or represent a view that we still hold. Information does not have to be new to be current, but we will ordinarily want to know about the current status of any old piece of information.

CURRENCY OR KEEPING UP

The intimate relation between information and currency can be seen clearly if we consider the concepts of *staying current* or *keeping up*. Suppose one starts with a certain picture of a situation—e.g., the state of the local school system, the current situation in Turkey, the state of the mind-body problem in philosophy, what is known about the causes of dyslexia. If one is *kept informed*, over time the initial picture will change gradually as new reports come in. The process whereby new reports modify a prior picture is wickedly complicated; it certainly does not involve automatic acceptance and direct use of the contents of new reports; one does not have to believe everything one hears, and the modification of an initial picture of a situation may not correspond to what the author of the report wanted or expected. One might even reject or ignore most of the reports and interpret the rest in ways that would surprise their producers (compare Machlup, 1980, p. 57). But, as a result of interpretation and evaluation of new information, the initial picture gradually will change. Much may be unchanged; information that was part of the picture in earlier times may still be part of the current informed picture. Or everything may have changed. If you are looking for someone who is well informed about a situation, you are ordinarily looking for one whose picture is current, up to date, a picture of what the situation looks like now. This may not always be the case. Sometimes asking for current information might just be a request for the most recent reports or the most recent news. But ordinarily the request for information is a request for what *is now known*, and, in that sense, information is understood to mean: current information. So to ask about the value of currency is just one way of asking about the value of information, and to ask about the value of *being current* is another way of approaching the same question. It is not the only way (for some others, see King, 1982; Repo, 1989), but it is an especially interesting one for reasons that should become clear as this discussion evolves.

Everyone of ordinary intelligence tries to keep up with changes in some part of the world around them; at a minimum, everyone tries to stay aware of what is happening in their immediate

environment—home, neighborhood, workplace. Growing up, we learn what kinds of things one has to keep an eye on, look out for, pay attention to. This rudimentary form of keeping up is mostly automatic and effortless. It is a monitoring of the environment that is not so different from what humans in pre-agricultural and pre-industrial societies had to do, though perhaps less depends on it for us, our lives mostly being less precarious than theirs.

Almost everyone tries to keep up with some part of life beyond the immediate environment, but everyone differs in pattern of interest and habits of pursuing currency. There is one general principle of the distribution of interest and attention—egocentrism. Information that appears to be practically relevant to the individual's situation and interests and concerns is sought or at least accepted. This is really just an extension of the primitive practice of monitoring the immediate environment; we monitor a larger environment, looking for dangers and opportunities. But how much wider the environment we attend to is largely up to us; some look scarcely further than their immediate neighborhood, some try to watch the whole world. Beyond monitoring for relevant changes that might occur anywhere, we all have patterns of avocational, recreational, ideological, and cultural interests which may lead us to follow events in one or another subworld more or less intently. Again, it is up to us to decide what spheres of life we will follow and how closely.

But it is not always our decision whether or not to keep up with a sphere of activity. The social world imposes requirements on its members, and currency is a requirement imposed on occupants of some kinds of social positions, particularly occupational positions. However, the way it is imposed and the way it is attained differ. A worker may be instructed by a supervisor, bringing the worker up to date on what must be known; an executive may have a staff of experts whose job it is to bring the executive up to date in a particular situation. Neither worker nor executive may need to do anything to keep themselves up to date; it is someone else's job to keep them, or bring them, up to date. But for one large class of workers, keeping up to date is their personal responsibility. These are the knowledge workers—i.e., knowledge producers (those active in research and development) and members of the professions. Professionals often express discomfort or embarrassment at being unable to keep up with their fields; that kind of reaction is significant. Failure to keep up is not just failure to do what one would like to do or thinks it would be useful to do; it is failure to do what one is socially obliged to do. Professional codes of ethics routinely include a requirement of keeping up with the field—an ethical requirement not just a suggestion for more successful practice (Gorlin,

1990). Ethics are reinforced by the law—a malpractice suit may be the result of failure to keep up (Keeton, 1984). Social pressure reinforces the demand of ethics and law—one does not want to appear to one's peers to be behind the times or to be out of touch with the current world because that is likely to expose one to contempt. There is as well a kind of "logical" pressure; theories of rational belief formation and rational decision making sometimes include a requirement of "total relevant evidence" for rational belief and action (Goldman, 1986, pp. 204-07). That kind of requirement certainly implies a need for awareness of *current* relevant evidence. Such a requirement may be interpreted as an extreme idealization of what we think of as part of common sense. We are likely to view others as simply crazy if they conspicuously neglect to gather or use current information in serious situations, and it seems to us (or to us professionals) no more than plain common sense to keep up with developments in fields in which one works and whose best current knowledge one needs in order to practice one's profession successfully.

But there is, in addition, a very strong private motivation for maintaining currency—the preservation of self or of capital. A knowledge worker's principal capital asset is likely to be his or her own stock of specialized knowledge and skill; it is what one has to offer the world and one's occupation, status, and income depend on it. Preserving the value of one's "human capital" is a form of self-preservation. Keeping up to date is an important aspect of capital preservation, for what the world wants is the services of brains not only well trained and well stocked with knowledge but well adjusted to the current state of the world and not just to earlier states. And that implies knowing what is currently known that is relevant to the practice of one's profession. So, for the knowledge worker, currency is not an option but a requirement, a social requirement which one has the best of private reasons for meeting.

Of course currency is not a concern only for knowledge workers, but for most others it is not a social *requirement* that one keep up with particular areas of activity. It may be necessary to *catch up* from time to time: anyone who tries to take seriously the rationality requirement on decision and belief formation will have a need for current information at decision time—but they can get it then by catching up. Anyone participating in a competitive field of activity such as politics or business or warfare will have a recognized need for current information-relevant activity in that field. But the corporate executive will employ others to gather most of the relevant information that cannot be gathered informally by personal observation; those others are the ones who stay current over most realms (see Mintzberg, 1973 on managerial work and its currency

requirements). Or consider national security—enormous intelligence organizations full of analysts as well as spies trying to stay current so as to be ready to brief their superiors if and when the need arises. The politicians and administrators whom they brief have their own currency requirements; they are unlikely to be successful unless they maintain current knowledge of the state of play in their own fields of competition (and in this they are like players in any other competitive field—e.g., scientists [Bourdieu, 1991])—but that is simple prudence. For the intelligence analysts, “foreign currency” is a job requirement, what they are paid to maintain.

For the broad class of knowledge workers, then, the value of currency is socially determined. Currency is not an option but a requirement. The costs of maintaining currency are the costs of maintaining one’s status, one’s standing, and the economic value of one’s human capital.

CURRENCY VARIABLES

But if currency is a social requirement for knowledge workers, it is a particularly vague and indefinite requirement. Currency has several variables. One is, of course, *extent*—i.e., the size and shape of the areas or spheres of the world about which one tries to maintain current knowledge. Another is what we can call *scale* using a cartographic analogy. A small-scale map shows a large area but little detail, a large-scale map shows a small area in great detail. One may have current knowledge of an area but only on a small scale—i.e., aware of major features but ignorant of fine detail. Alternatively, one may have large-scale knowledge which is dense with detail. Another variable involving currency is *depth of understanding*; our grasp of a situation can be superficial or deep, as in the difference between bare awareness of a change versus extensive grasp of the implications of the change (scale and depth are independent variables, alas). Another currency variable is timeliness or *delay*; “current” is as ambiguous as “now,” which can mean a time span from “this very instant” to “these days,” and one may claim to be current without claiming to have information about what is happening in “real time”—i.e., right now. A requirement of keeping up with developments in one’s profession is not unambiguously a requirement to know what is going on today that is new, nor a requirement of deep understanding, nor a requirement of an exact scale of knowledge, nor a requirement of knowledge of every nook and cranny of the profession, nor is it a requirement to maintain the same level of currency over all parts of the field for which one is responsible. One need not be expected, for example, to have an equally deep understanding of all parts of a field or knowledge of the same scale

over a whole territory; specialization in fact means large-scale knowledge of relatively small areas, smaller scale knowledge of surrounding areas. So there is a question of what constitutes enough currency to satisfy the requirements of a professional position.

There is unlikely to be much argument that different people arrive at very different answers to this question. For every professional for whom maintaining currency is a burden and information overload a serious affliction, there must be at least one for whom currency is simply no problem at all. A lonely scientist reports that: "We're in the forefront without any effort whatsoever!" (Palmer, 1991, p. 268) but, even where there is a lot to do, it can happen that thin and superficial information works well enough, the cost of ignorance turns out not to be great, and, if necessary, bluffing works nicely. The most scrupulous is likely to be the most troubled by the currency requirement, overinterpreting it to mean large-scale knowledge in depth of wider areas than there is time to attain. But neither law nor ethics requires any particular level of currency (the currency requirement on professionals such as doctors seems to be interpreted very gently by courts; one is not expected to be informed at the highest level [Keeton, 1984, p. 189]). Self-preservation or preservation of one's own human capital raises strategic questions that can be answered differently with plausibility and does not invariably call for high levels of currency (one might rationally decide to run down the value of one's capital stock, for instance, in anticipation of changing occupations or roles). So, while maintaining currency is not optional but mandatory, the level of currency to be maintained is generally not prescribed. Many different levels of currency would appear to satisfy social requirements. Extent, depth, scale, and delay are variables that can be given a wide range of "acceptable" values. One may deliberately choose not to keep up with some segments of one's field of interest in favor of catching up later if and when the need arises (there is much more to be said on the topic of keeping up versus catching up, but we will not discuss it here). Rationality might appear to demand the highest possible degree of currency, but its requirement is impossible to meet and hence is self-canceling (Cherniak, 1986). The social requirement of currency allows almost indefinite interpretation with potentially huge differences in knowledge acquired.

And different people pay very different prices for the currency they attain. Time is the principal cost for most knowledge workers—we are not considering payment for national or industrial espionage or for purchase of proprietary know-how, for instance, where large sums of money are involved. For most professionals, the relevant current knowledge is in the public domain, professional associations

have positive incentives to facilitate its communication to their members, and money costs are, if not negligible, still not major barriers to the attainment of the expected currency (given, that is, the availability of adequate libraries). The time costs involved obviously depend on the pace of change in the field(s) one is trying to keep up with as well as on the level of currency sought. If one works in a fast moving field which changes rapidly, one may pay a big price in time in order to keep current, while if one works in a slow field, the price of currency may be almost negligible (see Becher, 1989 on "urban" and "rural" research fields and on the comparative rarity of the "urban" style [p. 157]). There is not much good information about the amount of time people in knowledge occupations actually spend in keeping up; for all the talk of overload (e.g., Bernier, 1978; Klapp, 1978; Weick, 1970), it is not clear that it is a widespread problem among professionals in general. But the differences from field to field must be very considerable as well as among individuals in a field.

THE EFFECT OF CURRENCY

What we must be clear about is that what one is buying with one's expenditure of time is, in the first instance, simply the state of being current, which implies nothing at all about an increase in the value of the stock of knowledge kept current. Maintaining currency helps keep the value of that stock from diminishing; it does not automatically increase its value. There is a way in which the value of the stock might increase simply as a consequence of keeping up—a field-dependent way. One may be working in a progressive field, which, as a field, is acquiring new abilities and learning how to deal with its objects more successfully; not just one individual, but the field as a whole may be stronger now than it was a year or a decade ago. In that case, keeping up with the field means that one's own professional capacities are stronger now than a year or a decade ago, hence (depending on the field) possibly seen as more useful by others, hence, perhaps, worth more to others who *may* recognize increased capacity by increased financial reward. But this may not be the result. Consumer products often get simultaneously better and cheaper, and so might professional services. And either falling demand for services or an increase in the supply of professionals offering the service could reduce the rewards even for an improved service (Machlup, 1984, p. 560). Since there may easily be sharp differences of opinion over whether or not a field is actually progressing and a service is in fact improved, or indeed is of any value at all (for example, see Malkiel, 1985 or later editions on security

analysts), insiders proud of their augmented abilities may face growing skepticism and declining job offers.

An individual might "beat the field"; one who spends time in studying, observing, and practicing might deepen her or his understanding and perhaps also improve capacity even though the field as a whole was not progressing. The professional's stock of specialized knowledge and skill is not an inert repository as the word *stock* unfortunately suggests but is rather information embodied in an active cognitive system; in the course of keeping up—though not only as a *result* of keeping up—the system may get better, more powerful, and hence more useful, and perhaps there will be a monetary payoff for the increase in usefulness. But there are no guarantees that effort at maintaining currency will lead to an increase in the value of a cognitive system; a field may be getting worse rather than better, and an individual might go off on cranky tangents and lose credibility. Or one may be interested in a field of activity where nothing is happening—one stays current by continuing to look for something to happen but nothing does. So the value to others of a stock of knowledge embodied in a professional at the end of a period of time during which the individual has been keeping up may be the same, or greater, or less than it was at the beginning. Current does not mean better.

The chanciness of benefits arising from currency becomes even more apparent when we look at it from another angle. What is being evaluated here is the whole stock of knowledge representing some professional capacity embodied in a cognitive system; this is holistic evaluation. But what about the value of the things learned along the way in the course of maintaining currency? Surely it must be possible to estimate the value of the contributions of this journal article and that book, or of this theory and that piece of empirical research? Book reviewers seem to do it all the time: "a significant contribution to our understanding of the field." Rational action is presumably based on estimates of benefit; we spend time reading what we think will be of use to us, and we are bound to have views, after the fact, about whether we have been wasting our time. One would then expect that we could say something, after the fact, about the utility of the things we read, item by item.

One can certainly give an evaluation of what one has read—e.g., interesting, boring, probably not true, dead wrong, not worth thinking about further, and so on. But evaluations of what one has read are not descriptions of changes in one's own stock of knowledge, and descriptions of changes are not descriptions of the magnitude of benefits resulting from the change. In fact, the main benefit of reading in some period of time might be to show that no change

was called for in one's stock of knowledge. One reads some papers recently published on one's own specialty, for instance, and concludes that they have contributed nothing and call for no changes in one's own views. One did not read them because one expected benefit; one read them because, being in one's own specialty, they were mandatory reading. They happened to lead to no change in views. Other readings will lead to changes—reports of changes in a situation that lead to updating of one's picture of a situation, for example; the benefit is simply that a picture has been kept up to date in some respect, though not structurally altered. Other readings may lead to additions to a repertory: new knowledge that may be of use sometime in the future. It may not be clear if and when the time for use will come. Other readings may supply what one thinks it is good to know even though one cannot say how or when it might make a difference that one knows the new material. Consider a week's incoming flow of information just in the form of written documents—memos, letters, in-house reports, published books and articles, and so on (for a very close look at some physicists' reading, see Bazerman, 1988, chap. 8). Documents may be quickly scanned and assigned to one of these categories: (1) "must" reading to be dealt with as soon as possible; (2) of potential interest to be read now if time permits, otherwise later; (3) noted and filed for future reference in case of need; and (4) of no interest therefore to be discarded and forgotten. Much of the mandatory reading in category one might consist of routine updating—for instance, replacing old names and dates with new ones—no change of structure at all yet a *necessary* replacement of old with new. Much of the information might, on reading, be rejected and forgotten as worthless yet the time spent would not be described as time wasted if the things read were things one clearly had to read (it is the cynical but common professional judgment that most of what is published in one's field is trash). Some things might contain information of more or less precisely foreseeable future use—e.g., a new technique for use in certain special cases, data one can use in a report one is writing. The optional reading might be of things one thinks it good to know though one foresees no specific use. Information has generic utility if it strengthens one's understanding, but it may be quite impossible to tell how or where or how much one's understanding has been improved. Much ordinary information intake has generic rather than specific utility thus escaping any ready measurement of impact.

The cumulative effect of a myriad of encounters with the literature in the course of trying to keep up with a field may or may not turn out to be a better professional performer, but, at best, it is the cumulative effect that can be crudely measured and not the individual

encounters. If we thought that the benefits of reading would consist of improvements in cognitive structure or in performance ability, we must change our minds. It is a reasonable guess that the usual change of either cognitive structure or of performance ability as a result of reading an individual article or participating in a single conversation is vanishingly small—perhaps zero is the modal effect. When one thinks that a reading has had an impact, it may not be possible even to guess the size or value of the impact. There are some exceptions. Very occasionally a minor or even a major cognitive revolution can be brought about by reading a single document. Major changes in capacity resulting from learning a new branch of study or a new sort of technique may be easily observed and evaluated. But judgments of the extent or strength of a cognitive capacity are inevitably coarse and insensitive to small changes. Overall evaluation of the knowledge and capacity of professionals in and out of academia is often highly uncertain and contentious even for peers and out of the question for most who are not peers. Minor changes are not going to be detectable. The only benefit from most readings will be an imperceptibly small contribution to maintenance of the currency of one's capital asset.

But the same considerations raise additional doubts about the results of progress in a field as discussed earlier; spectacular major progress may be easy to see and reward, and minor improvements hard to detect and evaluate. And they also go a long way toward explaining the vagueness of the social requirement of currency as noted earlier; even if one could precisely specify levels of currency, one could not precisely establish that lower or higher levels made a definite difference in performance. The vagueness of the requirement of currency corresponds to the insensitivity and coarseness of evaluation of stocks of knowledge. And that, in turn, explains the unavailability of an exact answer to the question, How much is enough? and so explains why there might be a kind of professional information anxiety (Wurman, 1989) due to the inability to tell how much, if any, difference it makes that one does or does not spend more time at keeping up.

CONCLUSION

We have concentrated on knowledge workers and their obligations to keep up, and there is a good reason for this. From a pragmatic point of view, no information does any good until embodied in cognitive systems and put to work. We are long past the time when information could easily be embodied in *any* cognitive system and put to work; much of the information produced in the contemporary world is unintelligible except to a handful of specialists

and can only be appreciated by a specialized interpretative device, which is what the cognitive systems we have been discussing essentially are (interpretation rather than decision being their basic cognitive role). "Economists and other social scientists will benefit enormously...if they drop their conceptualisations of science and technology as activities producing easily transmissible and applicable 'information,' and recognize them instead as search processes and skills embodied in individuals and institutions" (Pavitt, 1991, p. 118); analogous advice applies to other groups of scholars and in relation to professions as well as research and development (R&D). The only ones who *can* maintain a high degree of currency over a field are those who have already invested heavily in acquisition of that field's stock of knowledge and in developing the relevant interpretative ability. And the current status of old information is mainly left to be determined by the same specialized interpretative devices that are responsible for producing and using new information; currency judges currency. A human capital approach to the evaluation of currency of specialized stocks of knowledge is thus almost irresistible.

We have concentrated on the professions, but the approach should be equally applicable to other specialized occupational stocks of knowledge and skill. But what about nonoccupational knowledge? We argued that currency is a social requirement primarily for knowledge workers. This overstates the case. In a given social milieu, there may be strong expectations that one will be well informed about particular social realms—sports, for instance, or ballet and opera, or current national and international politics. In such cases, currency may have social value for the individual as well as satisfying an intrinsic interest. But, apart from this, the only kind of currency that may seem worthwhile is currency over areas of immediate practical relevance to the individual (Wilson, 1973)—and those may seem to the outside observer to be pitifully narrow and small. People manage to live in what are, in effect, microscopic worlds, excluding and ignoring practically all of the world around them. One could investigate the costs of such narrowness but that would take a quite different approach to the value of information and of currency. That should not be surprising; evaluation is an interminable process, reflecting radically different interests and objectives and calling for (and calling forth) a great profusion of techniques.

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