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CHAPTER 12

Issues Raised by the Studies of Competence

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The aim of this commentary is not to summarise what has been said in the previous chapters but to draw out some further implications. Because the topics are interrelated, it may be useful to list the issues to be discussed. They are:

1. The conclusions that emerge from any competency study are, as in all science, heavily dependent on the frame of reference and assumptions of the scientist. The adoption of any particular methodology is no guarantee of "truth."

2. *Critical incident* and *Behavioural Event Interviewing* methodologies offer no panacea.

3. There is no justification for the preoccupation with low-level skills and abilities evident in some quarters of the competency movement. Indeed, setting the results summarised in the preceding chapters in the context of other work, and reflecting more deeply on their implications, suggests that even higher-level competencies than those highlighted are required to perform effectively in the roles and activities that emerge as most important in the workplace and society. A more adequate framework for thinking about competence will therefore be one that helps us to think more effectively about the qualities required to cope with societal and ethical issues. In other words, those involved in advancing the competency movement must embrace all the issues to which those who drafted the *Capability Manifesto* drew attention.

4. Even if it is accepted that high-level competencies are of fundamental importance in every area of society, a huge amount of research and development remains to be done to develop the concepts, understandings, and tools that are needed to identify, nurture, place, develop, and utilise high-level competencies.

5. The question of how to guard against *in*competence--the fear of which has provided such an impetus to both the professionalisation and competence-specification and credentialling movements (and even the national curriculum in schools)--demands urgent and careful thought. Our present perspective is that its solution will depend on very different developments to those currently most widely envisaged and that it requires the development of high-level competencies in members of the population far removed from those most commonly targeted for training and re-education programmes.

We will now discuss each of these topics in turn.

1. The conclusions that emerge from any competency study are, as in all science, heavily dependent on assumptions accepted and rejected by the scientist.

Although Russ-Eft, Huff, and our summary of McBer's work may have given the impression that Behavioural Event Interviewing and Critical Incident methodology have been

refined to the extent that they can be routinely applied to identify the competencies that are important in any occupational position, this impression is misleading.

One example of this comes from a study that we were unfortunately unable to include in this book. Leonard and Fambrough[1] studied the competencies required by research managers. However, in their work, they basically accepted the customer-contractor principle as a framework within which research should be conducted. Yet there is ample evidence that this framework is itself a grossly *in*efficient method of conducting either fundamental research[2] or what is generally termed research and development.[3] "Customers"--administrators--are rarely in a position to specify what needs to be done. The whole process of "calling for proposals," unless it is subverted by capable administrators who invert their job descriptions, *constrains* the scientific process. The effective management of research therefore involves subversion of the very system in which those concerned nominally believe. What competencies would a capable competence modeller require if he or she were to note and report this observation? What image of science would the research community require when evaluating his or her work? What competencies would the competency-modeller require to change both the image of the research community, the terms under which his or her own research was conducted, and the way research is generally conducted? Fambrough has in fact reported (in a personal communication) that incidents that provoked such reflections were omitted from their report because there were not enough of them to amount to a "significant" finding and they would thus have been viewed as "unscientific." They would have been unacceptable to those who sponsored the research, and the claim that the observations were not sufficiently substantiated to be "scientific" would have been used to discredit the researchers. Yet the fact is that it is the insights *forged in the course of research*--and not the findings "documented" in it--that advance understanding--that is, advance science.[4]

To reinforce these insights into the competencies *we* may need to possess and the limitations of our methodology, some of the results of our own studies of outstanding primary school teachers may be briefly introduced.[5] It emerged that those teachers who did the best--indeed the only educationally competent and ethically justifiable[6]--work *in* their classrooms were the ones who spent most time *outside* those classrooms seeking to gain control over the wider social and bureaucratic processes (such as the expectations of parents and the limited range of important competencies that show up on the tests currently used in the "quality control" operations of the "educational" system) that would otherwise have prevented them from nurturing high-level competencies--that is, that would have prevented them from behaving competently--in their classrooms. Yet such activities are not normally regarded as part of a teacher's job. Had we, as researchers, accepted the usual job descriptions we would not have come up with what can now be seen to be one of our most important findings--a finding that has major implications for the training of teachers, the job descriptions generated for teachers, the criteria of appraisal deemed appropriate, and the overall organisation and management of the educational system.

In a chapter that is reprinted later in this book, Schön likewise demonstrates that it is crucially important that investigators reflect on the significance of their observations. That is to say, the most important implications of research may well have to do with advancing our understanding of the competencies required by *researchers*, the arrangements required to advance scientific understanding, and the competencies required to diffuse a better understanding of the nature of science and the arrangements needed to advance it.

Another way of putting this conclusion is to say that the competencies identified as important depend on the implicit job description accepted by (a) the organisation employing those concerned and (b) those building the competency model.

2. *Critical Incident* and *Behavioural Event Interviewing* methodologies offer no panacea: Indeed, they produce results that in some ways mislead us.

What was said in the last few paragraphs indicates that it is necessary to go well beyond Critical Incident and Behavioural Event Interviewing studies if we are to identify the competencies important in a job.

But more serious limitations emerge from considering the work of Adams and Burgess,[7] and, as Lynne Cunningham has shown, Kanter. One way of putting it is that focusing on "superstars" exacerbates the problems arising from acceptance of conventional thoughtways. Those who are interviewed are not encouraged to think about the crucial contributions to group performance made by those who are not regarded as superstars and those who are doing vitally important things that do not happen to be mentioned in their job descriptions--such as salesmen noting (and pushing through) important changes in organisational arrangements or soothing tensions between other members of staff. Such activities normally pass unnoticed, unmentioned, and invisible.

Yet, as we have seen, such contributions are vital to the success of the "parallel organisation activity" required for organisational survival, they are crucial to the success of research and development,[8] they are essential to Druskat's "emergent" group competencies, they are essential to scientific productivity,[9] and, indeed, they are essential to intelligent behaviour itself.[10]

Adams and Burgess's system was specifically set up to make such contributions visible or, put differently, to enable all the personnel in an organisation to identify the way in which each and every member of the organisation *is* a superstar and could become more superstar-like in a superstar organisation or a society displaying high-level emergent competencies of different kinds.

But there is a sense in which even the system trialled by Adams and Burgess does not go far enough. Groups have properties that cannot be discovered by investigating and summing the competencies of the individuals that make them up, just as copper sulphate has properties that cannot be discovered by summing the properties of copper, sulphur, and oxygen. Further, the parts *change*--or transform--each other. What a person *is* depends on the environment in which he or she lives and works. It depends on the concerns and competencies of other people in the environment. It depends on what others do and permit. It depends on what the organisational arrangements make it easy to do and difficult to do. The competencies identified as important depend on the organisational purposes deemed important.

3. There is no justification for the preoccupation with low-level skills and abilities evident in some quarters of the competency movement. Indeed, setting the results summarised here in the context of other work, and reflecting more deeply on their implications, suggests that even higher-level competencies than those highlighted are required to perform effectively in the roles and activities that emerge as most important in the workplace and society. A more adequate framework for thinking about "competence" will therefore be one that helps us to think more effectively about the qualities required to cope with societal and ethical issues. In other words, those involved in advancing the competency movement must embrace all the issues to which those who drafted the *Capability Manifesto* drew attention.

The work summarised in the papers in this section strongly reinforce Schön's claim that competence and incompetence do not usually stem from excellence or deficiencies in technical knowledge. Rather, they stem from excellence or inadequacy in dealing with what

Schön calls "the swamp." Nevertheless limitations in the range of studies summarised here may give the impression that these conclusions apply only to *professional* competence. Nothing could be further from the truth. Flanagan and Burns have demonstrated the same thing among machine operatives,[11] Van Beinum among bus drivers,[12] and Sykes among construction site workers.[13] Flanagan and Russ-Eft have shown that the same is true of contributions to community activities[14] and Ian Cunningham, in his chapter in this volume, strongly suggests that similar high-level competencies are required to achieve a satisfying lifestyle.

The problems involved in a reductionist approach are well illustrated in Tribe's chapter. She nicely illustrates the dilemmas that arise when it comes to be recognised that a long-established, traditional, knowledge-based training programme is wildly off beam but when there is no simultaneous investment in empirical studies of what really makes for effectiveness and ineffectiveness among those actually employed in the profession. The quest for a competency-oriented curriculum then results in a listing of low-level skills that somehow misses the point. While the shortcomings of this then become visible, no guidance is available on what should be done instead. In retrospect, however, perhaps the most important observation to be made about what happened was that the *educators* concerned did not call for research as an aid to tackling their problem. It is, perhaps, this pervasive failure to see research as a route to finding ways of assessing the effectiveness of, and improving, provision in this vast domain of public expenditure that is the most alarming. In other words, perhaps the lack of the *competence to problematise* is among our most important deficiencies.

As noted, the most serious oversights in the competency studies we reviewed here have involved the competencies that are required to perform effectively and ethically when judged against wider criteria of performance.

It is not, of course, true that the importance of some of the required competencies has entirely evaded our researchers. Desjardins and Huff, for example, noted that some of their college principals actually set out not just to ensure the survival of their colleges through image-building and financial manipulation but to find better ways of benefiting the students by helping them to develop the competencies they would need to contribute most effectively to society. Some realised that this meant finding ways of nurturing in students the competencies required to consider the long-term social consequences of their actions and act on those insights--in other words, nurturing the competencies required to both act morally in the narrow sense and ethically in the sense of trying to influence the workings of their society. This meant helping them to develop both the ability to build up their own understanding of how society worked and the commitment to influence it.

We have already mentioned that our own work with teachers showed that for them to behave competently, it was necessary for them to intervene outside their classrooms to gain control over social and economic forces that otherwise prevented them from competently nurturing high-level competencies in their pupils.[15] But, although in some ways a dramatic enough claim in itself, this formulation understates the position. The reality is that it is *unethical* for teachers *not* to engage in these activities because failure to nurture at least *some* high-level talents in *all* of their pupils both damages the life chances of those pupils--often assigning them to degrading lives in which they suffer demeaning treatment at the hands of the "welfare" services--and deprives society of their talents. Worse, by not challenging myths about "ability" and the social order, their failure contributes to the perpetuation of an unethically divided and dysfunctional society that is plunging toward the destruction of the lives and livelihoods of all.

It emerges from these observations that educators have, in the past, typically behaved

in ways that are both incompetent and unethical. If they are to cease to be open to this accusation, they will have to show that they have contributed in one way or another, directly or indirectly, to the development of multiple-talent frameworks for thinking about ability, tools to administer multiple-talent educational programmes, a better understanding of how high-level competencies are to be nurtured, a better understanding of the constraints on their behaviour, or ways of influencing those constraints.

Russ-Eft's study of managers, and others brought together by the Spencers,[16] clearly indicate the need to have some managers who take the initiative to intervene in extra-organisational social, political, and economic processes for the benefit of their organisations.

But such a statement only raises the question of where the boundaries of "their organisations" are to be drawn. Barnard has argued that reconciling the conflicting demands that arise when one draws such boundaries in different places creates value and ethical dilemmas, the resolution of which, in the end, becomes the most important and critical task of senior management.[17] Do "their organisations" consist of their employees, the community members they support, or their shareholders? Although many may think that individual firms have no legal responsibility to the community, such is not the case. A crucial explicit (if perhaps fraudulent) justification for enacting the legislation that made it possible to form liability companies and corporations in the first place was that it would facilitate action that would benefit the community as a whole and enable them to be held accountable for so doing. At the time, some even had their charters revoked by their communities for not doing so[18]. So, how are we find out whether companies are in fact acting in the best interests of the community and how would managers have to behave to get them to do so?

But this is not the only reason for insisting that managers need to focus on such issues. Many of the managers studied by those who have worked with Critical Incident and Behavioural Event Interviewing methodology have been, either directly or indirectly, employed in or by the public sector. Under these circumstances, one might have anticipated that one of the criteria of effectiveness applied to their work would have been the ability to act effectively in the public interest. Unfortunately, both the rarity of references to such activity in the summaries of results, the thinness of the Spencers' discussion of applications of their work in the public sector, and our own work with public sector managers[19] suggest that it is rare for public sector managers themselves, or those who identified incidents of effective or ineffective behaviour among them, to, in any sense, identify the "organisation" on whose behalf those managers were charged with the task of finding ways of intervening in sociological, political, and economic processes as being society itself.

Similar observations can be made about the competencies required by psychologists, doctors, and others. Reform of our living and working arrangements is crucial to mental and physical health in the short term--the largest-selling drugs currently being tranquillisers and drugs to control ulcers to alleviate the stresses and other symptoms stemming from these arrangements--and still more radical reform of such arrangements is clearly crucial if there are going to be *any* human beings around in the not-too-distant future.

It follows that we are not ourselves immune from the accusations of incompetence and unethical behaviour we have been levelling at others.

If we are to behave more competently--which means ethically--we will need to better understand the context in which we are working. Why is it that the atomistic version of Competency Based Education is so pervasive and dislodgable? We will explore the answer to this question more fully in a later chapter. What we have seen here is that part of the problem is that there is little understanding of how to conceptualise high-level competencies, how to nurture them, and how to assess them for formative, summative, or placement purposes. But

there may be more important forces at work. One sees the way in which not only all public discussion but virtually all professional discussion of educational goals (including discussion among researchers) has been dramatically narrowed--on a worldwide basis--over the past 20 years. One notes how this has become linked to the need to legitimise and perpetuate a deeply--and unethically--divided society both within and between countries. One sees how researchers have, on the one hand, come to recognise that it is futile to seek to promote discussion of a wider agenda--because no one will listen and there is little possibility of getting funds for (or opportunities to carry out) research in the area--and, on the other, come to accept money for studies that preclude investigation and discussion of (and therefore render invisible) many of the wider aspects of competence discussed here. It is hard to avoid noting the parallel between what is happening in this area and the way in which authoritarian and totalitarian regimes have more generally--by controlling the terms and framework of public discussion and linking personal advancement to that agenda--been able to promote and advance extremely unethical social systems. Conspicuous examples include Hitler and Mao. In the context of such reflections, it does not seem so far fetched to suggest that behind the "reforms" of the educational system may lie a desire to cement acceptance of the right of others to prescribe what one will know, do, and think, the right of others to determine what will count as "ability" so that other talents will remain invisible and unutilised, and the right of others to deprive one of opportunities to enquire and investigate.

If there is any truth in such suggestions it follows that we will *really* need to develop the competencies required to engage in collective social action if we are to behave competently.

4. Even if it is accepted that high-level competencies are of fundamental importance in every nook and cranny of society, a huge amount of research and development is required to develop the concepts, understandings, and tools that are needed to identify, nurture, place, develop, and utilise high-level competencies. And the adoption of Critical Incident and Behavioural Event Interviewing methodology will *not* lead us to some of the key insights we require.

Spencer, Huff, Russ-Eft, and others have used Behavioural Event Interviewing and related methods to generate vitally important insights into the competencies that differentiate between more and less effective performance in a wide range of occupational and social roles. Yet their work provides us with little insight into the patterns of motivation and talent that lead people to carry out effectively one or other of the wide range of activities that are required in every occupational or social position, how people who are likely to carry out one or another of these sets of activities are to be identified, how the development of these competencies is to be nurtured whether through on- or off-the-job developmental programmes, or even to distinguish between the main different types of contribution that may be required in any role position or in "parallel organisation activity." Still less does it help us to think about emergent properties of groups or the different roles that need to be performed for different "emergent competencies" to arise,

Nor does it provide us with a basis from which to develop the tools managers need to:
- think about the motives and talents of subordinates and how best to place and develop them;
- structure the network-based working relationships required for "parallel organisation activity,"
- create groups having different emergent properties
- recognise the currently invisible but essential contributions which people make to such emergent group properties.

Likewise it gives us little help when setting out to develop the tools that teachers and lecturers need to orchestrate and monitor the development of students engaged in multiple-talent, group-based, individualised, competency-oriented, developmental programmes and recognise the particular talents that those students have developed.

Despite these limitations, if one compares and contrasts the kinds of activity that Schön, Huff, and Spencer have shown to be so important with skills of the kind listed by Tribe, a number of features that seem to distinguish high-level, generic, competencies from skills do suggest themselves.

It is immediately obvious that one of the key features of high-level competencies is their *self-motivated* nature. It would make hardly any sense for someone to tell Huff's college principals to go and do the things that emerged as important. It was the individual him or herself who defined the situations in which the behaviour was appropriate and (often "intuitively") worked out what needed to be done. It follows that certain types of motivational predisposition are an integral part of these high-level competencies. Certain components of competence--such as the tendency to monitor and learn from the effects of one's actions--are required to carry out these self-initiated activities effectively, but the one cannot be separated from the other. It is quite inappropriate, therefore, to attempt to view or designate high-level competencies as skills or abilities. Nor are they "aspects of personality." The kinds of thing people are predisposed to do and the abilities required to do them effectively are certainly important. But one cannot be separated from the other. The required skills or abilities cannot be somehow detached from the motivational context in such a way that they can be separately practised and assessed.

Competence in the kind of communication that is required when trying to put someone at ease cannot be developed in the course of making presentations of company development plans. Sensitivity to the cues that lead to the recognition of new activities a college might undertake cannot be developed in the course of developing sensitivity to, and awareness of the implications of, the colours of hues under a microscope. Nevertheless, these competencies are not situation specific in the sense in which typing is situation specific. The tendency to engage in them is, in some sense, omnipresent but evoked by cues that the person concerned defines as relevant. Clearly, possession or lack of possession of such competencies cannot be "tested" by creating situations that *someone else* deems relevant to their evocation and display. Such a test would indicate that the person being assessed does not do what someone else thinks he or she should do. But it would not reveal what the person concerned is motivated to do and good at doing. Note the implication that it does not make sense even to try to assess such things as "the ability to communicate" by presenting set tasks. What people will communicate about, how they will communicate, and how effectively they will communicate depends on whether their motivational predispositions are engaged. In a given situation one person will contribute in one way while another will see it as an opportunity to contribute to (or undermine) the process in a very different way.

Clearly, a whole new way of thinking about competence, its development, and its assessment is needed. We need a methodology that elicits an individual's definitions of situations and ways of contributing to them. And then a system for classifying such information.

5. The question of how to guard against *in*competence--the fear of which has provided so much impetus to both the professionalisation and the competence-specification and credentialling movements--demands urgent and careful thought. Our present perspective is that finding a way forward will depend on developments that are very different indeed from those currently most widely envisaged and that it will depend on

the development of high-level competencies in members of the population far removed from those most commonly targeted for training and re-education.

The observation and fear of incompetence has fuelled numerous efforts to specify everything that surgeons, psychologists, bus drivers, and others may one day need to know. Unfortunately, surgeons not only specialise in the conduct of very different types of operation, some surgeons organise research teams, others edit journals, and others service committees of the Medical Associations. The specialist knowledge they require changes rapidly. Likewise, some psychologists test children, others provide psychotherapy, others run countries, and so on. Worse still, most incompetence arises not from deficiencies in technical knowledge but from an inability to deal effectively with the social context—Schön's "swamp."

But the problem of incompetence runs even deeper than this. Here, we have already noted the problems posed by the destruction by teachers of the minds and competence of children and their failure to initiate through their professional organisations the developments needed to introduce an effective educational system, by the inability of public servants' to initiate and learn from the effects of their actions in such a way as to prevent the collapse of the biosphere and their inability to introduce the organisational capabilities required to deal with personal and organisational incapability.

What is needed is new thinking about the nature of competence followed by network working among the members of occupational groups (with recognition of the different types of contribution required for effective network working) and network-based supervision designed to limit displays of incompetence and ensure--by exposing behaviour to the public gaze--that people act in ways that are likely to be in the long-term public interest (which implies studies of the kinds of activity that are likely to lead to radical change in the way we do things). Thus, new organisational arrangements, new job descriptions, and new staff appraisal procedures are all required.

Clearly a great deal of "parallel organisation activity" is required to evolve these. Two questions emerge as paramount: "How can people develop the competencies required to contribute to this process?", and "What are the wide variety of ways in which people can contribute to that process?"

Yet the development of new thinking about organisational arrangements, the evolution of new job descriptions, the development of new staff appraisal procedures, and the study of the consequences of alternative ways of doing things are all quintessentially jobs for psychologists. Once again, therefore, the outcome of our reflections is to underline the need to reconsider both the image that psychologists have of themselves and that others have of themselves in the light of the observations we have made about the *nature* of a "learning society"--an "information society"--and the developments that are most central to its effective operation.

Notes

1.   Leonard & Fambrough (1966).
2.   See Raven (1995) for summaries of the evidence, but see Roberts (1967) for an example.
3.   Again, see Raven (1995), but see especially Kanter (1985).
4.   The point has been more fully argued by Donnison (1972).
5.   Raven, Johnstone, & Varley (1985); Raven (1994).
6.   See Raven (1997, 2000).
7.   Adams & Burgess (1989). We greatly regret being unable to include a chapter summarising this important, but out of print, work.
8.   See Raven (1984/1997).
9.   Taylor, Smith, & Gheselin (1963).

10. J. Raven, J. C. Raven, & Court (1998).
11. Flanagan & Burns (1955).
12. Van Beinum (1965).
13. Sykes (1969).
14. Flanagan & Russ-Eft (1975).
15. Similar conclusions emerge from the work of Klemp, Huff, & Gentile (1980) and Schneider, Klemp, & Kastendiek (1981).
16. Spencer & Spencer (1993).
17. Barnard (1938).
18. Grossman & Adams (1993).
19. Raven & Dolphin (1978).

References

Adams, E. and Burgess, T. (1989). *Teachers' Own Records*. Windsor, England: NFER-Nelson.

Barnard, C. (1938). *The Functions of the Executive*. Cambridge, MA: Harvard University Press.

Donnison, D. (1972). Research for policy. *Minerva, X*, 519–537.

Flanagan, J. C., & Burns, R. K. (1955). The employee performance record. *Harvard Business Review, 33*, 95–102.

Flanagan, J. C., & Russ-Eft, D. (1975). *An Empirical Study to Aid in Formulating Educational Goals*. Palo Alto, CA: American Institute for Research.

Grossman, R. L. and Adams, F. T. (1993). *Taking Care of Business: Citizenship and the Charter of Incorporation*. Cambridge, MA: Charter Inc.

Kanter, R. M. (1985). *The Change Masters: Corporate Entrepreneurs at Work*. Hemel Hempstead: Unwin Paperbacks.

Klemp, G. O., Huff, S. M., & Gentile, J. D. G. (1980). *The Guardians of Campus Change: A Study of Leadership in Nontraditional College Programs*. Boston: McBer and Co.

Leonard, D., & Fambrough, M.(1996). *Project Management at ****'s Research Center: Identifying a Model of Superior Performance.* Unpublished Report. Cleveland, OH: Case Western Reserve University.

Raven, J. (1984/1997). *Competence in Modern Society: Its Identification, Development and Release*. Unionville, NY: Royal Fireworks Press (1997); Oxford, England: Oxford Psychologists Press (1984).

Raven, J. (1994). *Managing Education for Effective Schooling: The Most Important Problem is to Come to Terms with Values*. Unionville, New York: Trillium Press; Oxford, England: Oxford Psychologists Press.

Raven, J. (1995). *The New Wealth of Nations: A New Enquiry into the Nature and Origins of the Wealth of Nations and the Societal Learning Arrangements Needed for a Sustainable Society*. Unionville, NY: Royal Fireworks Press; Sudbury, Suffolk: Bloomfield Books.

Raven, J. (1997). Educational research, ethics and the BPS. Starter paper and peer reviews by P. Mortimore, J. Demetre, R. Stainthope, Y. Reynolds, & G. Lindsay. *Education Section Review, 21* (2), 3–26.

Raven, J. (2000). Ethical dilemmas. *The Psychologist, 13* 404-406

Raven, J., & Dolphin, T. (1978). *The Consequences of Behaving: The Ability of Irish Organisations to Tap Know-How, Initiative, Leadership and Goodwill*. Edinburgh: Competency Motivation Project.

Raven, J., Johnstone, J., & Varley, T. (1985). *Opening the Primary Classroom*. Edinburgh: Scottish Council for Research in Education.

Raven, J., Raven, J. C., & Court, J. H. (1998). *Manual for Raven's Progressive Matrices and Vocabulary Scales. Section 4: The Advanced Progressive Matrices*. Oxford, England: Oxford Psychologists Press; San Antonio, TX: The Psychological Corporation.

Roberts, E. B. (1967). Facts and folklore in research and development management. *Industrial Management Review, 8*, 5–18.

Schneider, C., Klemp, G. O., & Kastendiek, S. (1981). *The Balancing Act: Competencies of Effective Teachers and Mentors in Degree Programs for Adults*. Boston: McBer and Co.

Spencer, L. M., & Spencer, S. M. (1993). *Competence at Work*. New York: Wiley.

Sykes, A. J. M. (1969). Navvies: Their work attitudes. *Sociology, 3*, 21ff. and 157ff.

Taylor, C. W., Smith, W. R., & Ghiselin, B. (1963). The creative and other contributions of one sample of research scientists. In C. W. Taylor, & F. Barron (Eds.), *Scientific Creativity: Its Recognition and Development*. New York: Wiley.

Van Beinum, H. (1965). *The Morale of the Dublin Busman*. London: Tavistock Institute of Human Relations.