

Evidence and the end of medicine

Keld Thorgaard · Uffe Juul Jensen

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Abstract Fifty years ago, in 1961, Feinstein published his first path-breaking articles leading to his seminal work *Clinical Judgement* and to the establishment of clinical epidemiology. Feinstein had an Aristotelian approach to scientific method: methods must be adapted to the material examined. Feinstein died 10 years ago and few years before his death he concluded that efforts to promote a person-oriented medicine had failed. He criticised medicine for not having recognized that only persons can suitably observe, evaluate and rate their own health status. Feinstein's position was—as in *Clinical Judgement*—methodological. He didn't espouse ethical principles. He pointed to methodological deficiencies in clinical epidemiology and evidence-based medicine. In this article we'll provide a framework for understanding and justifying Feinstein's call for a person-oriented medicine which recognizes patients as co-actors in clinical reasoning. It's argued that craftsmanship and practical wisdom are integrated in clinical judgement and reasoning and that clinical reasoning is not only about means to achieve the end, health. We do also reason and deliberate about ends. The 'defining end' of medicine (health) has continuously been negotiated and so been the object of deliberation. For centuries among professionals, in recent years among professionals and patients. These negotiations and deliberations lead to ongoing specifications of health as a 'guiding end', i.e. an end guiding clinical reasoning about what to do in particular situations. Feinstein's self-critical account to clinical epidemiology at the end of his professional career reflects the fact that patients

during the last 30–40 years (i.e. in the period after the publication of *Clinical Judgement*) widely have been recognized as persons with rights to autonomy. Feinstein's lesson is, however, that espousing and recognizing ethical ideals is not enough. A change of clinical practice and its methods is necessary. His critique also implies that clinical epidemiology and evidence-based medicine as practiced haven't provided such a turn.

Keywords Feinstein · Aristotle · Evidence-based medicine · Deliberation · Practical wisdom

Diversity of goods and rational practice

Numerous philosophers have tried to deal with the fact that we in everyday life, in society and in politics, are facing a multiplicity of values and interests. Is it possible to give a general account of rational decision-making in spite of the diversity of goods in contemporary society? Frequently philosophers consider 'rationality' as requiring abstraction from the particularities of social relations in the light of which we as agents normally understand ourselves, our responsibilities, our desires and interests. 'The ideal observer' (Firth 1952) and 'the veil of ignorance' (Rawls 1971) are some of the names used for this position. It is assumed that by abstraction from our situatedness we can enter a neutral, impartial and universal standpoint and avoid one-sidedness and partiality. From such a neutral standpoint we can judge rationally, and conflicts between the multiple values, interests and goods can be solved.

The problem of rational practice has attracted special attention in modern medicine and health care. Different practices embody different values and different standards of good medical practice. How can basic values like

K. Thorgaard (✉) · U. J. Jensen
Health, Humanity and Culture, Institute of Philosophy
and History of Ideas, Aarhus University, Nobelparken,
Bygn 1467, 8000 Aarhus C, Denmark
e-mail: filkt@hum.au.dk

prolongation of life and quality of life for example be balanced in a specialised biomedical practice and in patient-centred practices in community- and rehabilitation medicine? Standards of good medical practice, conceptions of health and disease and of goods and values often clash.

The philosophical assumption that conflicts between colliding perspectives and conceptions in managing health and disease are solvable by abstraction, impartiality and neutrality appears also to be attractive to reformers in modern medicine (Marks 1997). In evidence-based medicine and evidence-based decision-making the criterion for the rationality of a decision is closely linked to the use of current best evidence. In order to make rational decisions we must use the strongest and best evidence available, preferably using results from clinical trials and meta-analyses. But how does evidence secure rational clinical decisions? Evidence-based decision making is not considered to be a simple deductive procedure. As phrased by Muir Gray ‘the evidence alone rarely makes the decision’ (Muir Gray 1997, p. 65). Best research should be combined with clinical expertise. It is recognised that in a concrete clinical situation specific traits of the patient must be taken into account. Rational clinical practice seems tied to biomedical and clinical evidence but clinical judgement is generally acknowledged as playing a central role in clinical decision-making. Access to evidence does not alone secure rational decision-making. How are judgement, decision and choice related to evidence available to the clinician?

Clinicians, clinical researchers and philosophers of medicine have addressed these questions. Richard Horton (1998) has tried to elaborate a model for interpretive medicine by using Stephen Toulmin’s general framework for analyzing informal argumentation. According to Toulmin (1958) there is no deductive link between premises and conclusion in a practical argument. The fact that practical arguments are not based on formal criteria and mathematical logic does not make them irrational. Yet, this logic ‘is concerned with the soundness of the claims we make—with the solidity of the grounds we produce to support them—or to change the metaphor, with the sort of case we present in defence of our claims’ (Toulmin 1958, p. 7). Alvan Feinstein stresses that results of randomized trials, the use of Bayesian statistics, quantitative decision analysis and psychometric strategies for clinimetric measurement are not sufficient to provide rational decisions concerning the individual patient (Feinstein 1994). Henrik Wulff and Peter C. Gøtzsche outline a procedure for clinical decision-making stressing that clinical decision is made up of different scientific and humanistic components (Gøtzsche 2007). It is, however, not clear which elements are contributing to the rationality of the decision. Horton, Feinstein and Wulff and Gøtzsche interpret clinical decision-making differently from one another. Rational decision-making is contested in

practice and in theory. But the authors mentioned all seem to agree that evidence, though a necessary condition, is not a sufficient condition for rational clinical decision-making. Clinical judgement is crucial. But how do we avoid conceiving ‘judgement’ as just a black-box?

Wulff and Gøtzsche’s model of the clinical decision process does not reveal what makes a clinical decision rational. They identify various phases or steps in the decision process: (1) collection of data, (2) diagnostic decisions, (3) answering the question if the diagnosis is sufficiently certain, (4) the therapeutic decision and (5) observation of treatment results. In the pictorial representation of the model the various steps or phases are connected by arrows. It is pointed out that clinical reasoning is deductive as well as empirical (inductive). The reasoning is deductive when decisions are based upon theoretical knowledge of disease mechanisms or the mechanism of action of various drugs. Clinicians reason empirically when making decisions based upon experience gained from treatment of other patients (Gøtzsche 2007, p. 3). But it is not explained how these deductive and empirical steps provide a rational decision concerning the individual patient. How are the arrows in the diagrammatic representation to be interpreted? Do the authors really provide a model of clinical decision making or is it rather a kind of check list reminding the clinician about steps to go through and questions to answer? The model is obviously intended to improve clinical decision making but it doesn’t reveal how the clinician moves from general knowledge and evidence to a decision concerning the individual patient.

It is perhaps to answer that question that Wulff and Gøtzsche point to the importance of humanistic and ethical aspects in clinical decision-making. The model described above is the scientific part of clinical reasoning. In addition to the scientific model, ‘humanistic understanding’ (“inferences from an understanding of the patient as a fellow human being” (Ibid. p.150)) and ‘ethical reasoning’ must be applied, they claim. The scientific components and the humanistic and ethical components must be united in clinical decision-making. Wulff and Gøtzsche don’t, however, explain how ‘humanistic understanding’ is integrated in clinical reasoning and clinical judgement.

What goes on when humanistic understanding and ethical reasoning are added? When and how are the humanistic component and ethical reasoning added to the reasoning process? We are left with an ambiguous and vague picture of clinical decision making.

Clinical judgement and evidence-based medicine

Evidence-based medicine has been a driving force in developing clinical reasoning and practice during the last

30 years. But it has only contributed little to our understanding of clinical judgement and its role in clinical decision-making. On the face of it this is surprising, since pioneers of clinical reasoning have stressed the importance of articulating a scientifically sound concept of clinical judgement. One of Alvan Feinstein's main objectives in his seminal work *Clinical Judgement* was to show that judgement is a distinctively clinical type of reasoning different from the deductive logic employed in making diagnoses, etiology, or pathogenesis of a patient's disease (Feinstein 1967, p. 12). Feinstein gives a fascinating account of his attempts to improve clinical methods in diagnosing and treating patients with rheumatic fever. This was the starting signal for clinical epidemiology and the opening of a struggle to improve clinical practice, a struggle which has gone on until today. Feinstein not only had to develop epidemiological methods for clinical practice. He also had to fight against a firmly anchored self-understanding among clinicians: "Treatment was supposed to be an 'art', a humanistic application of established modes of therapy". Feinstein's critical question was this: What mode of therapy was in fact 'established'? The patient should have confidence in doctors' choices. But honest, dedicated clinicians disagreed, according to Feinstein, on the treatment of any disease from the common cold to the metastatic cancer. Clinical judgement had been conceived of as an 'art' and its intellectual aspects were consigned to some "mystic realm of intuition that was 'unworthy' of scientific attention because it was used for the practical everyday work of clinical care" (Ibid. p. 14).

Good clinicians use a distinctive clinical type of reasoning. Reasoning aiming at decisions about prognosis and therapy of individual patients' illnesses is, according to Feinstein, clinical judgement. So, there is nothing mystical about judgement. It is the use of a particular language, a system of clinical classification. This language is rooted in things clinicians have learned at the bedside taking care of sick people. Feinstein tried to fill the logical gulf between pathological diagnoses and therapeutic decisions. Nothing mystical is hidden behind the arrow connecting the diagnosis and the therapeutic decision in a clinical flow chart. "Every clinician knows very well" Feinstein stressed "that his choices of treatment are constantly influenced not just by the diagnostic label, but by the nuances of his distinctly clinical observation" (Ibid. p. 125). Clinical decisions may depend on the strength of a patient's hands, the posture of his body, the sweat on his brow or the anguish of his family. The clinician may think that these distinctions are unidentifiable nuances. Lacking a taxonomy of his own the clinician's judgements appear irrational. It was Feinstein's intention to illuminate the rationality of judgment by the construction of a clinical taxonomy. We have taxonomies for designating a host who has a disease and pathological

taxonomies for diagnosing the host's disease. A clinical taxonomy was needed for classifying illnesses as the interaction between host and disease (Ibid. p. 127).

More than 25 years after the publication of *Clinical Judgement*, Feinstein revisited his work. Feinstein quoted laudatory comments by a colleague. "I felt sure" the colleague said "that the book would inaugurate a wonderful new era of profoundly clinical investigation. In the past two decades, however, most of the research devoted to patient care has been more mathematical than clinical. Why do you think that the new clinical era has not happened?" (Feinstein 1994, p. 799). In the article Feinstein discusses various problems in quantitative decision analysis, psychometric strategies for clinimetric measurement, etc. He does not, however, attribute the problems addressed in the paper to the mathematical models or the people who promoted the models. Clinical investigators are themselves to blame. They haven't, Feinstein claims, developed strategies rooted in clinical realities, but instead applied models to goals which they were not aimed at. Patients, Feinstein stresses, "are the only persons who can suitably observe, evaluate, and rate their own quality of life and the important features of their own health status". In spite of that "patients have seldom been asked or allowed to indicate their own values and beliefs" (Ibid. p. 804).

Feinstein's Aristotelian heritage: medicine between art and science

Clinical medicine is, Feinstein argued in *Clinical Judgement*, "like most other human activities, an indivisible mixture of both art and science" (Feinstein 1967, p. 295). Quoting Aristotle, Feinstein points out that methods must be adapted to the material examined (Ibid. p. 41). The methods of the laboratory aren't adequate for the *clinical* study of people; the clinician's method must be different from the methods used in the laboratory: "... the clinician's material is an alive, whole, sick person" distinctly different from the cadavers, human parts or animals of the laboratory (Ibid. p. 41). Feinstein of course agrees that results of laboratory research are relevant to clinical practice, but clinical practice is not simply the application of results from basic research. It is a kind of artful experiments with sick persons carried on in its own right. Medicine is, however, not just a craft or art managing a very special kind of material: a sick person; it is also a very special kind of art due to its equipment. Though advanced technology is used in modern medicine, the clinician must recognize that he or she is a "unique apparatus for perceiving the attributes that distinguish people from each other, from animal, and from all other objects of investigation" (Ibid. p. 297).

This general epistemological framework is developed in *Clinical Judgement*. Feinstein never abandoned this framework and its methodological implications. His self-critical considerations in his article from 1994 imply, though, a crucial addition to his clinical methodology. Now he recognizes that the patient is not just material for the clinician's examination and therapeutic activity. The patient is not just an *object* of therapeutic practice, but should—as a *subject*—play a crucial role in the clinical process of diagnosing and treating his or her own health problems.

In the following we will argue that Feinstein's changing understanding of the role of the patient can be explained and justified (1) within the framework of Aristotle's approach to practical reasoning as conducted in craftsmanship and practical wisdom and in (2) the light of cultural-historical change of values within the last 30–40 years.

Crafts, judgement and reasoning

Craft, as analyzed by Aristotle, is a widely encompassing category including activities such as pottery, navigation and medicine. According to Aristotle, medicine is a craft though a scientifically informed craft. But do craftsmen deliberate? Does Aristotle's account of crafts provide us with a satisfactory model for understanding contemporary clinical practice as deliberative activity?

Aristotle scholars have criticised Aristotle for being unclear or incoherent in his account of medicine as a craft (Broadie 1991, p. 194). We believe, however, that Aristotle illuminates different but interconnected dimensions of clinical practice: clinical practice as routine-like, as rule following, as a source of new procedures and rules, and as deliberative concerning how to use rules in a particular case.

Sometimes medical practice is—like any other practice—carried out as if it was devoid of deliberation, and hence mechanical or machine like. Kolnai has that kind of practice in mind when characterizing the “physician who confines himself to the determination of suitable curative means—often followed in simple cases, by their application there and then—he does not deliberate but performs the theoretical activities of calling to mind his relevant knowledge, looking up textbooks for more information, considering the peculiarities of the case in hand, weighing probabilities, comparing the average efficacy of various methods in similar cases and so forth” (Kolnai 2008, p. 45). Kolnai is right in distinguishing between, on the one hand, calling information to mind, weighing probabilities, etc., and on the other hand, deliberation. But the clinician exercising his or her craft doesn't just call information to

mind and weigh probabilities, all the time aiming to identify a disease-entity and answering a general question about the right (evidence-based) treatment of that disease-entity; he rather seeks and weighs information to reach a practical conclusion under particular circumstances treating a particular patient.

What matters in general is that patients are different and courses of illness differ, even among patients with the same disease. It is the aim of clinical reasoning to identify peculiarities of the individual case and act in the light of judgments. A scientist aiming at explaining a particular fact can wait if he cannot reach a satisfactory conclusion on the basis of available evidence, presuppositions and methodological standards. It is different for the practical reasoner. He has, says Broadie, “a limited time in which to reach a practical conclusion about O (the object aimed at) under *these* circumstances; and if he finds no acceptable means of pursuing it, he must abandon that particular project” (Broadie 1991, p. 240).

The physician treats the patients ‘one by one’ and his responsibility is to the health of the individual patient (Aristotle EN 1963, 1097a12–13). In doing this the physician is deliberating. He would be medically irresponsible if he just insisted going by the book (Nussbaum 1994, p. 66).

Clinical decisions especially in emergency wards are often made under severe time constraint without any possibility of carrying out complex decision analyses or drawing flow chart diagrams. Diagnoses and therapeutic decisions aim at saving patients' lives. A specialized, disease-oriented medical practice can be seen as a kind of Kuhnian normal science governed by its own implicit rules, standards and procedures. This fits Broadie's characterization of a craft as understood by Aristotle: “... all the time new craft techniques are developed, and problems that once required deliberation come to be soluble by rules” (Broadie 1991, p. 203). According to Aristotle a craft like medicine involves, however, much more than rules. As pointed out by Broadie, some crafts and skills are “virtually mechanical once acquired”. Some, however, “demand ingenuity [...] for the effective application of their rules” (Ibid. p. 203).

Judging how to treat a patient in a particular situation may appear as intuitive, and as an exercise of an almost mystical power. From an Aristotelian perspective, however, the craftsman's skill is seen as a result of learning in practice. It is not sufficient to have access to scientific evidence. The application of available evidence has to be learned in practice. In that respect clinical practice resembles shoemaking, pottery or cooking. But medicine is nonetheless, in some important respects, different from such paradigmatic examples of craftsmanship.

The end or telos of medicine is health. But health is not like the object in shoemaking. It is not produced and cannot

be controlled in the same way. The aim is to change the course of the disease and to promote the patient's health. The shoemaker knows and tries to realize professional standards or ideals of the object he is producing. Health is not as determinate an end as the end of shoemaking. Feinstein takes that basic insight into account when claiming that patients' experiences and values count in medicine. But this doesn't imply that Aristotle's analysis of medicine is inadequate for understanding contemporary epistemological challenges in medicine. Medicine is in some respects analogous to crafts like shoemaking, but in other respects it "bears strong family resemblances with phronesis" (Dunne 1997, p. 261). Dunne points out that Aristotle seems (at least) to be implying that "medicine and navigation are *technai* the exercise of which should be deemed to be especially analogous with the living of a virtuous life—so much so, indeed, that they can scarcely be said to be *technai* at all. For, no more than ethics, they cannot enshrine general rules that would offset the requirement that the agents themselves must, in each case, think out what is appropriate to the occasion" (Ibid. p. 258).

Several other authors have used Aristotle's analysis of phronesis or practical wisdom in accounting for clinical practice (Pellegrino and Thomasma 1981, Macnaughton 1998, and Montgomery 2006). But in the following we will argue that one of the greatest challenges to philosophy of medicine today is to account for the *interconnectedness* of craft and practical wisdom in clinical judgment and clinical reasoning including reasoning about the end of medicine. We will further argue that such an epistemological framework is necessary for overcoming the shortcomings of contemporary clinical epidemiology and evidence-based medicine pointed out by Feinstein in 1994.

Practical wisdom

Pellegrino and Thomasma, and Montgomery and R. Jane Macnaughton have argued that an Aristotelian conception of practical wisdom is a key to understanding clinical judgement. But there are different kinds of judgement demanding different kinds of abilities: "The judgements of the scientist and detectives are 'technical'; that of the technician is based on what Aristotle calls phronesis or 'practical wisdom'" (Macnaughton 1998, p. 91–92). Kathryn Montgomery's book *How Doctors Think* has the subtitle 'Clinical Judgement and the practice of medicine.' Montgomery is fighting the art/science duality claiming that advocates of the duality neglect "medicine's character as a practice. It is far more than a body of scientific knowledge and a collection of well-practiced skills, although both are essential. It is a conjunction of the two: The rational, clinically experienced, and scientifically

informed care of sick people" (Montgomery 2006, p. 33). For her, the essential virtue of medical practice is clinical judgement, "the practical reasoning or phronesis that enables physicians to fit their knowledge and experience to the circumstances of each patient" (Montgomery 2006, p. 33). She calls for a *phronesiology* of medicine, an interpretive strategy that draws on Aristotle's distinction between episteme and phronesis. Phronesiology is, she claims, "what we know about rationality in situated, contingent circumstances like moral quandaries or illness" (Montgomery 2006, p. 125).

Pellegrino and Thomasma's analysis of clinical judgement is, in general, congenial to Feinstein's analysis of clinical judgement. In accordance with Feinstein, Pellegrino and Thomasma stress that the primary end of clinical judgement is the right healing action for *a particular patient*. They also underline that "the criteria of a right or good decision lie not in certitude and rigor, logical or mathematical soundness These qualities must be secured wherever possible, but they are not sufficient for a 'right' decision". They can "be displaced by or modulated by the more complex criteria of a decision 'good' for this patient" (Pellegrino and Thomasma 1981, p. 124).

Pellegrino and Thomasma distinguish between three generic questions to be addressed in the process of clinical judgement. Answering the question 'What should be done for this patient?' presupposes answering two other questions: 'What can be wrong?' and 'What can be done?' (Ibid. p. 125). The question concerning diagnosis and classification of the patient's disease ('What can be wrong?') has received the most intense theoretical and scientific examination. But also the question 'What can be done?' (the therapeutic question) belongs under certain stringent conditions to a part of the process which is scientific in character; e.g. when penicillin is prescribed for pneumococcal pneumonia (Ibid. p. 130). The choice of what action to recommend to a particular patient involves, on the other hand, many value-related questions: "The closer we come to the end of the process of clinical judgement—the right action—the less useful and less available is the scientific model" according to Pellegrino and Thomasma (Ibid. p. 132). Far too often, "a right action is justified by the uncritical acceptance of a chemical determination, a biopsy, or an x-ray examination" (Ibid. p. 140). The clinicians get access to more and more scientific and technical means; nonetheless, Feinstein, Pellegrino and Thomasma want to stress that everything in medicine ultimately is judged by its end—the healing of a patient (Ibid. p. 142).

Answering the question 'What should be done?' presupposes a process of reasoning which is mainly dialectical, ethical and rhetorical: "Physician and patient together must clarify the relationship of one recommendation with its opposite and weigh the reasons for each action" (Ibid.

pp. 134–135). It is, however, not quite clear what role Pellegrino and Thomasma assign to the patient in clinical reasoning *before* decisions have to be made about choice of treatment. Do patients' values (what they deem 'good' or 'worthwhile') only play a role in answering the question 'What should be done?' or should patient perspectives and experiences also be respected and taken into account when deliberating about 'what can be wrong'. Patients' present signs and symptoms that are linked to classificatory diagnostic patterns. 'This part of the process most closely fits the scientific ideal' (Ibid. p. 126) and therefore the role of patients' understanding and evaluation of the problem in this process is unclear. Pellegrino and Thomasma conclude that no question ('What can be wrong?', 'What can be done?' and 'What should be done?') is entirely isolatable from the others but at the same moment they stress that several independent reasoning modes are requisite to each question (Ibid. p. 136).

Pellegrino and Thomasma distinguish between three modes of clinical judgement in developing their *anatomy* of clinical judgement. They identify and analyze three different questions as if they were distinguishable from one another in the way that bodily organs are. The three questions are, however, interconnected—as is also hinted at by Pellegrino and Thomasma. Clinical reasoning is not composed of two scientific (logical (deductive or inductive)) parts answering questions about diagnosis and therapy, and an ethical or value-loaded part in which questions of how to treat the individual patient are answered. Making 'anatomical' distinctions between the three modes of clinical judgement makes it difficult to comprehend the possible role of patient perspectives and patient experiences throughout the whole process of clinical judgement. So what is needed is, rather, *a physiology* of clinical judgement accounting for the internal relations between the different modes of clinical reasoning. Elements of such a physiology of clinical judgement will be suggested in the following section. We will suggest that practical wisdom is a wisdom of the whole body of clinical judgement, not just the wisdom of its 'heart', i.e. decisions about what treatment to choose in a particular situation. A key to understanding the complexity *and* unity of clinical judgment and clinical reasoning is to understand that reasoning is not only about means but also about *ends*. This will be explained in the following section.

Deliberating about the ends of medicine

Several philosophers have argued that deliberation is about ends and not only about the means to achieve particular ends (Kolnai 2008; Wiggins 1975–1976). The end of medicine isn't given once and for all. Physicians have to

deliberate a good deal about ends. This is "not because of imperfection of their medical knowledge in general or owing to the incertitude of its application to the singular case..." (Kolnai 2008, pp. 45–46). Physicians must inevitably deliberate because 'curing the patient' is largely ambiguous. It admits of a variety of different interpretations. It must be determined according to "the peculiar features of the situation except in all but the simplest cases" (Ibid. p. 46). What seems to be the most effective cure in the situation might be harmful to the patient's health in a broader perspective.

From Kolnai's point of view, deliberation is central to medicine not because there are many conceivable and available means. Deliberation arises, rather, "in virtue of the multiplicity of other ends as affected by the envisaged use of means in the service of one given end..." (Ibid. p. 46).

A particular view of Aristotle's understanding of practical wisdom has stood in the way of understanding deliberation as also being deliberation about *ends*. According to the so-called 'Grand End View' of practical wisdom there is one single, grand picture of the human good shared by all human beings (Broadie 1991, p. 198). A practically wise person will be directed by this vision of the common good and contribute to its realisation. A rational agent must be able to articulate the shared idea of the good. It is not the result of deliberation.

This perspective might immediately seem adequate for understanding medical practice and health care. Isn't there one single goal or telos governing that practice: health? Broadie criticises the 'Grand End View' in general (Broadie 1991). We are not governed or directed by one unifying idea of the good in our social life. But things are also complex in medicine. Values are contested, negotiated and changeable. Health is a highly contested concept in contemporary health care, and we pursue different goods in its name (survival, quality of life, capabilities to carry out our functions of daily life, etc.). Sometimes the goals are compatible, sometimes incompatible. In concrete clinical reasoning the doctor (or the patient) is rarely deliberating in light of one particular and articulated value or vision of health.

Another interpretation of practical wisdom seems much more pertinent to medical practice as a unity of craft and phronesis. This interpretation repudiates the claim that one single idea of the good governs practice. We learn by training and experience what is the right thing to do in a particular situation. Quite often our judgements and actions are not based upon explicit and articulated grounds. A diagnosis or a therapeutic decision is an answer to particular questions: What is wrong? What can be done? What is the right thing to do under these circumstances? Often a clinician can answer such questions without being able to

articulate grounds for his or her decision. This is in agreement with an Aristotelian perspective on rational choice as expressed by Broadie: "... unless *grounds* are allowed to be to some extent inarticulate without it following that what is grounded is infected with inarticulacy, it is doubtful whether a grounded affirmation would ever be possible to human beings at any rate in the practical mode" (Broadie 1991, p. 237). According to Broadie's Aristotle, a combination of articulated questions and answers with *unarticulated grounds* is an inevitable feature of rational choice on any realistic view.

The capability to make such choices is learned in practice including practices informed by evidence, but also informed by ends that are not given once and for all, and which are continuously contested and negotiated among clinicians and—especially in medicine to day—among clinicians and patients. Broadie's interpretation of Aristotle's complex understanding of health provides a clue to understanding the interrelationship of craft and practical wisdom (*phronesis*) in clinical practice.

Broadie distinguishes between health as the 'defining end of medicine' shared by practitioners and patients and as 'the guiding end' that appears in a medical premise of deliberation about particular cases. As a defining end of medicine, 'health' figures in the premises of our deliberation when we consider the possibility of going to the doctor. The physician, though a craftsman, shares the end or *telos* of his craft, health, with ordinary people. Health is a condition "whose absence or presence ordinary people can recognise when they are aware of needing or not needing medical help and when they are satisfied or not satisfied with their treatment" (Ibid. p. 194).

The ordinary notion of 'health' which defines the end of medicine doesn't, however, provide a starting point "from which to deduce what medical action to take for a particular patient under particular circumstances" (Ibid. p. 194). More specific ends are necessary to guide deliberation about what to do in a particular situation. According to this analysis, ends (or 'pictures') guiding clinical decisions are influenced by changing, i.e. contingent conditions. According to Broadie the guiding end is articulated in terms of anatomy and physiology. This is probably correct concerning clinical practice in the age of modern medicine. The distinction between defining ends and guiding ends of clinical practice doesn't, however, imply that 'guiding ends' are necessarily defined by experts or professionals in contrast to 'defining ends' which are shared by professionals and lay people. The anatomical-physiological specification of health reflects a particular scientific and cultural-historical context. The anatomical-physiological specification of the guiding ends of medicine in the middle of the 20th Century is certainly different from the guiding ends in Hippocratic medicine, and it is different from the

picture and guiding end promoted by Feinstein. Feinstein paved the way for a guiding end of clinical practice infused with his clinical-epidemiological strategies and representations of illness as evolving processes in people's relations with their diseases.

Both Broadie's and Feinstein's articulations of guiding ends reflect the paternalistic tradition of medicine which was also the historical and cultural background of Aristotle's analysis of medicine and health and which has dominated medicine until the 1970s (Veatch 2009).

For Aristotle medical treatment consists of causal techniques for the manipulation of behaviour. Medicine is, in his interpretation, authoritative and one-sided while the exercise of practical wisdom, i.e. acting ethically, involves a reciprocal discourse. Here the pupil is not manipulated by coercive techniques (Nussbaum 1994: 70).

The Aristotelian doctor goes, according to Nussbaum, his own way: "It is at best peripheral, at worst confusing and dangerous, to instruct the patient in other available ways" (Ibid. p. 74). In ethics each person has, on the other hand, something to contribute to the truth.

The ordinary concept of health is however articulated and negotiated differently today than it was within the long paternalistic tradition of medicine. Feinstein's claim that patients' values and beliefs should be taken into account in developing a rational medical practice reflects the unprecedented change in relations between medical professionals and citizens since the end of the 1960s. Deliberation is—in principle—a process in which means as well as ends are negotiated and changed as a function of particular circumstances, constraints and possibilities of action. The Aristotelian analyses of craft and practical wisdom reveal the complexity of practical reasoning. It helps us understand the inadequacy of the mechanical means-end rationality articulated in flow chart diagrams or current models of clinical reasoning.

Though flow charts and evidence-based decision-making models (like the one developed by Wulff and Götzsche) are useful descriptions of aspects to be taken into account in clinical decision-making they are not an alternative to doctors' and patients' deliberation. Or, in the words of Wiggins, the development of a scientific model of rationality cannot by some conceptual alchemy spare us "the agony of thinking and all the torment of feeling that is actually involved in reasoned deliberation" (Wiggins 1975–1976, p. 48–49).

It is only during the last 3 decades that scholars in Aristotelian philosophy (Broadie, Dunne, Nussbaum) and Aristotelian-inspired theory and philosophy of medicine (ex. Pellegrino and Thomasma) have paid attention to the ordinary concept of health concepts and patients as agents in medical practice. Modern medicine has changed substantially and patients' perspectives and patient autonomy

are promoted in clinical practice in particular and in society in general. Numerous initiatives, politically, legally and culturally are taken to recognize patients as resourceful agents in health care. Attempts are made to transcend paternalistic clinical practice. Health as an ordinary concept and not just a concept possessed by medical experts was actually part of Aristotle's account of clinical deliberation, but the conditions for recognizing the Aristotelian insight and using them in contemporary discussions of clinical decision-making didn't exist before the 1960s.

This transformation of values raises, however, new methodological problems. It was one of Feinstein's great merits to see and stress the connexion between practice (and its embedded values and ethics) and method. Feinstein's *Clinical Judgement* had an implicit ethical basis. He warned against the growing influence of laboratory medicine and he wanted a renewed focus on the patient and patients' individual courses of illness. But he also recognized the need to develop adequate methods and means of representation to secure this. *Clinical Judgement* was an outstanding work but it also reflected the 1960s which were characterized by a growing interest in methodology and epistemology of medicine. It was before the heydays of bioethics.

Feinstein never abandoned this methodological drive. His insistence—just a few years before his death—that only persons can suitably observe, evaluate and rate their own health status—was in accordance with the growing cultural and political espousal and recognition of personal autonomy. Feinstein's arguments were, though, still primarily methodological. His work seems based on a conviction that espousal of ethical ideals doesn't change clinical practice if not accompanied by development of adequate methods integrating patients as subjects in clinical reasoning. He also made it clear that importing methods from outside medicine without adapting them to the ends of medicine is of no help either. One important lesson from Feinstein's work can be summed up in these words: It will be the end of medicine if methods aren't developed which are adequate in meeting the end i.e. telos of medicine; in our age health or well-being of self-reflective individuals possessing their personal standards of health and well-being. It was in that light he criticized parts of clinical epidemiology and also the status ascribed to controlled

clinical trials in contemporary evidence-based medicine (Feinstein and Horwitz 1997).

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