

Man as biological machine

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The dominant medical paradigm is bio-medical. Medicine is mostly seen either as biology applied to humans or the organisation of technical services to the community (hospitals, vaccinations, prevention etc.). Both approaches share the assumption that individuals are replicable units: no matter if they are members of a population of cells or of persons. This approach stems from the determinist-reductionist paradigm of modern science (1), which implies that "causes" are hidden beneath the "phenomena" (cells are hidden beneath tissues, molecules beneath cells etc.) and that the whole can be understood if one looks at its parts. The parts are assumed to be replicable tiles of a mosaic. In this view, man is a biological machine. The progress of technology is reinforcing the myth of the capacity of man to create machines behaving like men (see the history of automata and the many science-fiction novels and movies on humanoids) (2). If one can create a man, this warrants that one has a limitless capacity to repair him/herself and ultimately reach immortality. Hospitals must resemble repair shops, not caring homes. On the flip side of the same coin, angst is unavoidable due to the fear of being nothing else than a machine, without freedom and devoid of any real identity (3). This has profound consequences on medicine. Its clinical mission, the work of listening to and curing the ill or disabled person, is falling progressively into scientific disrepute (4). *Clinein*, in Greek, means leaning – namely towards a single bedridden person. For this reason, paradoxically, biomedicine and public health predominate. The merits of the man-machine metaphor are huge: suffice it to remind that as a paradigm it led to the enormous successes against infectious diseases due to a successful mix of biological research and public health policies. Yet, once the metaphor changed into a myth it failed to face whole-person problems like psychiatric illnesses, acute and chronic disabilities, ageing problems and terminal conditions. In these cases, the patient must be considered as a unique entity, the physician-patient relationship is an essential ingredient of the therapy and no real "cure" exists (in the sense of perfect "repair"), whereas caring (helping the patient to feel better) is always possible (5). The clinical model is thus more and more diverging from the biomedical model; is this heralding the expulsion of clinical medicine and related specialties (physical medicine and rehabilitation, psychiatry and the like) from the family of sciences? Are the clinicians becoming the "good-hearted" while biologists, surgeons and epidemiologists will remain the "clever guys?" (4) The medical model should recuperate its original scientific high ranking – mostly through innovative teaching models, starting from the academic level. To achieve that, several steps are needed: (a) research should respect the specificity of the medical model; (b) that model must remain within the boundaries of the contemporary scientific model; (c) upgrading cannot be done simply by adding ethical constraints or claiming that medicine is "more than science"; (d) advanced research instruments and methods should be borrowed whenever possible from the social sciences (6); (e) inductive reasoning, behavioural research methods, teaching and psychological skills should become explicit components of the clinicians' curriculum (7, 8, 9); and (f) medical training should provide that there be early branching into biomedical, clinical and population health specialisations. Clinical specialisations should be organised into areas sharing the level of interpersonal relationship rather than technical peculiarities (10). There is no cleavage between science and assistance: simply, the science of assistance should be developed (11,12).

Key words: Medicine, biology, paradigms, clinical medicine, biomedicine, public health, scientific model, physicianpatient relationship, medical specialisations, education and training.

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