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Abstract

Raimo Puustinen

**Is it Psychosomatic?  
- An Inquiry into the Nature and Role of Medical Concepts**

Medical diagnoses define the possible modes of being ill from the medical point of view. Medical diagnoses are theoretical concepts that gain their meaning as a part of the prevailing medical theory. As medical theories change over time, also medical concepts change, as can be seen in the long history of medical thinking.

The purpose of this essay is to illustrate medical thinking through examining the formation and use of one example of a particular medical concept “psychosomatic” in medical theory and practice.

The approach taken in this essay reflects the writings of Lev Vygotsky, who argued that scientific concepts are tools for scientific thinking. Since all conceptual tools have their own developmental history, to understand the content of any scientific concept to the full we need to understand the processes leading to adoption of that particular concept for scientific inquiry at that particular moment in history.

Vygotsky’s approach for analysing the development of science through analysing its concepts is reflected to the writings of Kuhn and Fleck on the development of science. It is argued, that Kuhn’s theory does not apply to the development of medicine. While Fleck’s approach seems to fit better to analysing the theoretical development in medicine, it remains somewhat superficial in analysing the nature and role of concepts in medical thinking.

The use of medical concepts in medical practice is discussed in the light of Mikael Leiman’s ideas on the therapeutic encounter as a dialogical process. While Leiman also draws from Vygotsky he takes the issue further toward semiotic understanding of clinical dialogue by using Bakhtin’s and Voloshinov’s ideas of the semiotic nature of human communication.

**Is it Psychosomatic?**

**- An Inquiry into the Nature and Role of Medical Concepts**

Raimo Tapio Puustinen

PhD-thesis  
School of Medicine and Health  
Durham University 2010

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## **Acknowledgements**

This thesis had developed from my long-time interest in the conduct of clinical consultation in General Practice, that is, in my own work as a GP. The question that I have been pondering is, how is meaning generated in those few fleeting moments of a clinical encounter? How are the often vague pains, aches, fears and worries that patients present to us GPs transformed into medical concepts and treated accordingly? When I was searching for theoretical and methodological tools to address the problem in the early 1990s I met Mikael Leiman, now a professor of psychology at the University of Joensuu, Finland, who moved to my neighbourhood when I was living and working in a small town Outokumpu in Eastern Finland. Mikael introduced me to his studies on psychotherapeutic dialogues and I found his approach to be in many ways applicable on my own work as a GP. Mikael has been consulting and supporting me for my research over the years for which I thank him dearly.

When I was looking for an academic niche to conduct my studies, Dr. Pekka Louhiala, a long time friend and a colleague of mine since our early medical undergraduate days, decided to enrol at the University of Wales, Swansea, to work on his second PhD studying the moral philosophical problems in preventing intellectual disability through selective abortions. Pekka knew about my academic homelessness and introduced me to Martyn Evans, now a Professor in Medical Humanities and the Principal of Trevelyan College at Durham University, who was working in Swansea at the time. Martyn was lecturing in Helsinki at the annual meeting of Finnish Medical Association and we met over a lunch. When I had explained my problem, Martyn suggested that I should take my project to Wales, which I eventually did. That led to many enjoyable years of visiting Swansea and writing articles in the midst of my clinical work as a country GP. I eventually gained a PhD by publication at the University of Joensuu in the year 2000, Martyn acting as my other opponent.

When Martyn moved to Durham, I followed him and enrolled as a PhD student at Durham University. I have been asked in many occasions, why get into writing another PhD? Well, first, since I am a GP in a full-time practice, retaining a student

status in a prestigious English university is a great excuse to take time off from one's everyday clinical as well as domestic duties. Second, being a PhD-student offers a possibility to apply for and obtain grants. My studies have been supported by Signe and Ane Gyllenberg's Foundation and I wish to express my gratitude to their trustees for making my study trips financially possible. Apart from Durham, these trips have taken me to Leipzig where Professor Ingrid Kästner arranged for me an opportunity to study old medical handbooks in the Karl Sudhoff Library. I also received invaluable information on Johann Heinroth from Holger Steinberg PhD, University of Leipzig, who devoted time to discuss with me the details of Heinroth's career and thinking. I thank them both for their generous help and advice during the early phase of this study.

To examine the original documents on the birth and development of the American Psychosomatic Society I travelled to New York City to see the Archives of the Society which are stored at the Oscar Dielthelm Library at the Weill Cornell Medical College. The Special Collections Librarian Ms Diane Richardson was of invaluable help in finding relevant material for this study during those days of intensive research I spent in her library. Her expertise was crucial for the outcome of this thesis and I cannot thank her enough for her genuine commitment to helping me during my stay.

I then, by browsing Google, got in touch with an antiquarian bookseller Fritz-Dieter Söhn in Marburg, Germany. I travelled to this beautiful old town and spent an interesting day browsing his amazing collection of tens of thousands of medical books and magazines, among them true rarities, and discussing the development of mind-body problem in medical theory during the long history of medicine. To thank him I'll attach here his website for those interested in taking a closer look at his treasures [www.medicusbooks.com](http://www.medicusbooks.com).

The greatest part of my library work has taken place at the Wellcome Library in London. I wish to thank the fabulously helpful staff of that magnificent library. I still keep going back there just to enjoy its tranquil atmosphere and browse its endless collections. The other library of great importance for this thesis has been Tampere City Library. I have ordered dozens of books and articles through them and they kept on amazing me by finding even the rarest topics in no time and practically for no

money except for an odd couple of euros apiece. I thank the staff of this lovely library for their help.

A pleasant by-project for this thesis during my years in visiting both Swansea and Durham is a peculiar group of physicians that have gathered together with Martyn Evans to write a series of books for Oxford-based publisher Radcliffe Press. The series, *Medical Humanities Companion*, is completing its third out of four volumes this coming summer. Doctors Iona Heath from England, Jane McNaughton and Anne McLeod from Scotland, John Saunders from Wales, Jill Gordon from Australia, Carl-Edvard Rudebeck and Rolf Ahlzén from Sweden, Pekka Louhiala from Finland and Ms Gillian Nineham from Radcliffe have become good friends during our writing sessions in Oxford, Durham, Stockholm, Hämeenlinna and Tuscany. I wish to express my warmest thanks for all of them for being not just great company but the most intellectually stimulating group of colleagues during our endeavour to understand better the essence of our work. Rolf Ahlzen has also read my manuscript in different phases of its formation and given constructive criticism to various aspects of it for which I thank him dearly.

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Finally, I wish to thank my dear wife Aino who has supported and tolerated me during these years in doing research on top of being occupied with the long hours of clinical work. Those hours have been spent away from my family of four children and four grandchildren. I thank her for keeping the family together and for keeping me a part of it. I now publicly announce that I shall keep the promise she demanded me to give her when I got seriously involved with the present work some years ago: No, I will not get into writing a third PhD.

“The concepts of health and disease have far-reaching consequences for diagnosis and therapy, the attitude and behavior of physicians, how patients deal with disease, social attitudes and structure, the shape of moral choices, and the cultural significance of sickness and wellness behaviors.”

von Engelhardt D. Health and Disease:  
History of the Concepts.<sup>1</sup>

## **Introduction**

“Could it be psychosomatic?” a patient asked me the other day when we were discussing her weekly attacks of migraine. I asked her what she meant. She paused for a moment and started to ponder her domestic problems wondering whether they were causing her headaches. I admitted that they might precipitate her migraine but added that the underlying mechanism is biological with neurovascular dysfunctions and apparent heredity, since her mother and grandmother had suffered from the same condition at her age. She was also likely to have an attack if she drank red wine or ate particular types of cheese, which underlines the biochemical essence of migraine. We then discussed her diet and stress management and I prescribed sumatriptane to control her headaches.

A conversation with a patient as presented above is not uncommon in today’s medical practice. However, a century ago it could not have taken place, simply because before the 1930s there was no such concept as psychosomatic in everyday medical or lay use. The patient’s clinical picture of migraine may have been more or less the same in, say, 1910 but instead of using the concept psychosomatic she might have asked whether her problem was due to neurasthenia, which was a widely used concept in medicine to denote a great variety of problems of health and illness in the early 20<sup>th</sup> century. But why did we not retain the concept neurasthenia rather than adopt a new concept psychosomatic into medical theory? On the other hand, the concept neurasthenia itself was introduced into the medical vocabulary in the mid 19<sup>th</sup> century only to disappear from medicine during the following century. Such has indeed been

the fate of many medical concepts in the long history of medical thinking. We do not encounter terms such as phrenitis, dyscrasia or phthisis in our contemporary medical textbooks denoting the phenomena of feverish derangement of the mind, distorted constitution of the blood or prolonged cough accompanied by blood stained sputum and wasting, respectively. Yet, we may assume that to this day many if not most of the phenomena physicians have encountered since the dawn of medicine have not essentially changed. People sustain injuries for various reasons, recover, are crippled or die. They have pains, fevers, rashes and diarrhoeas. Sometimes they develop seizures, are sleepless, become delusional and may go around raging. Some stop talking, become paralysed or simply waste away. And all who live up to an old age become eventually frail and die. Why, then, do we have medical concepts appearing and fading away if the phenomena we encounter as physicians remain essentially the same? This question raises more than mere historical interest since, as we saw in the clinical example above, medical concepts such as psychosomatic and neurasthenia carry assumptions about the nature and aetiology of the ailment they denote and guide the therapeutic measures applied accordingly. By using the concept psychosomatic my patient implied a psychological cause for her migraine. Now that I did not adhere to that concept I did not only reconceptualise her problem to a biochemical disorder, but, while doing that, resorted to treatments that targeted to adjust biological processes in her body with medicaments and behavioural changes instead of suggesting psychotherapeutic measures to relieve her ailment.

Despite the central role of theoretical concepts in medical thinking there have been relatively few attempts to examine their nature and role in medical theory and practice. In 1981 Pellegrino and Thomasma stated in their book *A Philosophical Basis of Medical Practice*, that “medicine must begin questioning its conceptual framework”.<sup>2</sup> The overall aim for the authors was to develop philosophy of medicine on what they called the ontology of practice, that is, on the “search for meaning in the practice of medicine, and specific applications of the results of this search.”<sup>3</sup> An ontology of practice addresses “the context or situations in which ideas come forth, including theories about health and disease.” That context is situated in the dialogue within medical consultation, which forms “the locus of meaning” in medicine.<sup>4</sup>

Pellegrino and Thomasma wrote that their primary aim in developing philosophy of medicine was to understand the nature of medical activity,<sup>5</sup> where “the starting point is an inter-human event, the relationship between physician and patient.”<sup>6</sup> “But”, they continue, “there is no common anthropology upon which to base such a philosophy”.<sup>7</sup> As for their methodology, they claimed that “any philosophical method chosen must pay attention to *praxis* as well as *theoria*.”<sup>8</sup> (italics original) That is, philosophy of medicine needs to be built on medical practice and address what kinds of knowledge medicine generates and what “logical tools”<sup>9</sup> are used in clinical consultation. The authors did not, however, go as far as to study the nature and role of those “logical tools” in medical theory and as used in clinical practice. Instead, after considering the complexity of modern medicine they chose to be eclectic in their philosophical methodology and attempted to combine “American pragmatism and European phenomenology”<sup>10</sup> to take “the first step toward what we hope will become a systematic philosophy of medicine”.<sup>11</sup>

There have been a few other attempts during the last couple of decades to develop philosophy of medicine on the basis of clinical practice and the cognitive tools applied in it. Lolas, for example, wrote in an article published in 1996, that “the main task of a critical theory of medicine should be to develop a perspectival, context-fair, and multidimensional science of actions which integrates both diversity and heterogeneity within medicine without eliminating either one.”<sup>12</sup> For Lolas the methodological solution was not eclectic, since that would lead to mere “juxtaposition of different perspectives”. Instead, he emphasized the need to define the epistemological status of medicine as a science of actions, or praxiology, where the focus is on the constitutive actions of the persons performing them. Lolas was content, however, to outline the task but he did not offer any methodology to explore the issue to any greater depth.

In 1998 the journal *Theoretical Medicine and Bioethics* devoted a whole thematic issue of medicine conceptualised and examined as a practice. The editors justified the effort by observing, first, that there was little interest among philosophers of the first half of the 20<sup>th</sup> century in the issue of human activity, and that it is only since the 1970s that practical philosophy has been rehabilitated. This renewed interest has largely emerged, according the editors, from within medicine. The editors proposed

that the desired unifying principle for medicine as an activity might be established on the idea that in medicine scientific knowledge is instrumental and hence secondary to the practice of clinical medicine.<sup>13</sup>

In the same issue Hucklenbroich asserted that the idea of medicine as divided into theoretical and practical spheres is misleading. To overcome this he suggested that the conceptual and philosophical analysis of medicine should distinguish between medical knowledge, different fields of medical practice and medical research. This might be done by using case-based studies as well as conceptual and theoretical analysis of medical concepts and principles.<sup>14</sup> Hucklenbroich does not, however, offer us tools to pursue that line of thinking any further and dividing medicine into three instead of two realms does not, unfortunately, clarify the relation between medical theory and practice.

Following Hucklenboich's paper, Paul also asked whether the current juxtaposition in medicine, medical science vs. medical practice, is incurable or if it could be theoretically surmounted.<sup>15</sup> He suggested that in attempting to answer this question philosophy of medicine should define and explain the theoretical preconditions of medical practice. It should also offer definitions for the conceptual cornerstones of medicine, such as health, illness, disease etc. Paul concluded, however, that philosophy of medicine is still far away from providing answers to these questions.

Another attempt to address the nature and role of theoretical concepts in medical thinking has been made by Thagard in his 1999 book *How Scientists Explain Disease*. Because Thagard's approach holds broader theoretical interest in terms of this essay his work will be discussed in more detail in Chapter 11.

As can be seen in the above, there has been a call to develop philosophy of medicine on the basis of medical practice seen as a form of human activity where medical knowledge holds an instrumental role. Yet, while acknowledging the need to examine the issue, none of the authors quoted above offered methods to execute the task they were proposing. In an attempt to contribute to this quest proposed by Pellegrino & Thomasma among others I will examine, in what follows, medical practice as dialogical activity and the nature and role of medical concepts within that activity.

To accomplish my task I will draw upon so-called sign-mediated activity theory, which has its roots in social-historical activity theory (activity theory for short). Activity theory was originally developed on the basis of Lev Vygotsky's theories on the social construction of mind by the Soviet-Russian scholars Leontjev and Luria, among others, since the 1930s.<sup>16</sup> Despite its roots in Vygotsky's psychology, activity theory should not, however, be considered as just another psychological theory, but rather as a broad approach "that develops novel conceptual tools for tackling many of the theoretical and methodological questions that cut across the social sciences today" as Engeström and Miettinen have emphasized.<sup>17</sup>

Activity theory sees human activity as object oriented, collective and culturally mediated. The basic elements of activity consist of the object, subject, mediating tools and the rules and the division of labour within the community in which the action is performed.<sup>18</sup> In this approach the different components of activity are not, however, addressed as distinct entities but as "individual(s)-acting-with-mediational-means...in the concrete [cultural-historical] situation", as Wertch<sup>19</sup> has expressed it.

According to the activity theory, no human activity can be apprehended without considering the goal of the activity, since the goal "determines the horizon of possible actions".<sup>20</sup> For example, if we see a person sawing, planing and nailing wood and try to understand that activity, we need to understand the goal of that activity. That is, if the person is building a table s/he will use different materials, tools and methods than when building a boat. To understand what kind of table or boat is under construction, we need to understand the cultural-historical content of the goal, since tables and boats vary widely in their shape and structure in regard to time, place and purpose when, where and for what use they are constructed.

This also applies to medical practice. We may hold that the primary goal of medical consultation is diagnosis, without which any therapeutic choice remains haphazard. It follows that it is the set of diagnoses as expressed in medical theory that constitutes the possible goals of the physician's actions and determines what materials and tools are needed to achieve them.

Medical diagnoses are a part of a medicine's conceptual system. While medical consultations are conducted to a large extent with everyday language that is familiar to both physician and patient, medical concepts differ from everyday concepts in that they derive their meaning from being a part of a certain theoretical structure. Like all human semiotic devices, medical concepts, too, have their own developmental history and are subjected to change. Therefore, to understand the content of medical concepts, whether used in theoretical texts or within clinical encounters, we need to understand their developmental history.

The aim of this essay is thus twofold. To understand the content of medical concepts, we need to examine first their nature, origin and development as theoretical entities and, second, we need to analyse their role in medical practice in determining the measures needed to transform the patients' complaints into medical concepts.

As to the first task, I will adopt Vygotsky's approach to the development and acquisition of concepts in human thinking in general and in scientific thinking in particular. To examine the role and function of medical concepts in medical consultation, I will adopt the approach developed from Vygotsky's ideas by Leiman, who has taken activity theory towards a more semiotic understanding of human cognition and communication in the psychotherapeutic context under the rubric of sign-mediated activity theory.

Of all the changing medical concepts, I have chosen the concept psychosomatic as a token because it holds a special interest in medical theory when addressing one of the most central and also one of the most perennial problems in medicine: the question of the relation of man's mind to his body. It is our everyday experience, as it has been since the earliest written accounts of the human condition, that our state of mind does seem to influence the workings of our body and, conversely, various phenomena in our bodies affect our mental well-being in one way or another. But how can this phenomenon be understood? Are there really two distinct substances in man's being, mind and body, acting on each other? If so, how is their mutual effect mediated? And what, if any, are the pathological and therapeutic consequences that follow from that mediation? These questions have been addressed in the medical literature since antiquity and they are still debated in present day medicine. However, as noted above,

the concept psychosomatic was adopted into the medical vocabulary only in the first half of the 20<sup>th</sup> century to spread with astonishing speed throughout the world. This concept is, thus, rather recent and its developmental history is relatively easy to trace and illustrate for the purposes this essay.

### **The structure of the argument**

I will start my inquiry by examining the role of concepts in medical thinking in general. To accomplish this I will draw on the philosophy of biology, where there are three central features to be discerned in biological theory. First, there are no strict and universal laws to be found in biology that can be expressed in mathematical formulae such as are used in physics and chemistry. Biological theory is cast, instead, in concepts. Second, since biological phenomena cannot be reduced to chemistry and physics, biology resists the idea of the unification of science. It resorts, instead, to scientific pluralism in its theories and methods. And third, since biology is concerned with changing and developing phenomena in relation to time and place, biological inquiry can be considered as a special case of historical inquiry as will be discussed in Chapter 1.

When addressing the human body, medicine borrows heavily from biology for its concepts and methods. Therefore, the three fundamental features in biology, theory cast in concepts, theoretical and methodological pluralism and historical inquiry can be seen also to apply in medicine. However, in medicine the object of its inquiry, human health and illness, is even more complex than in biology, because human beings exist and act with an agency in a human society. Thus the subject matter of medicine exceeds that of biology. It follows that medicine needs to build its own conceptual and methodological apparatus to be able to address the phenomena it deals with in a scientifically productive way.

I will then proceed to analyse concepts in medical theory. For this I will apply Vygotsky's idea of concepts as tools for our thinking. The acquisition of concepts is a social phenomenon and it has a characteristic developmental pattern, both for individuals and for the collective.

Medical concepts differ from our everyday concepts by acquiring their meaning as a part of the theoretical structure of medicine. Medical theory, in turn, is built on those concepts. There is, therefore, a constant dialogical relationship between theoretical concepts and the overall theoretical structure in medicine. Owing to their social and historical nature, medical concepts are in a constant state of change, emerging and disappearing from use. It follows that to understand the content of medical concepts, such as psychosomatic, we need to examine their developmental history in relation to medical theory.

I will start my inquiry by tracing in Chapter 2 the appearance of the word psychosomatic in the medical literature in the 19<sup>th</sup> century to the point at which it gained the status of a medical concept in the late 1930s. To understand the novelty of the concept, I will then examine in Chapters 3 and 4 how the mind-body problem was addressed in medicine prior to the introduction of the concept psychosomatic into medical theory. In Chapter 5 I will turn to a more detailed analysis of the formation of the concept psychosomatic on the basis of psychoanalytic theory of mind and its role in medical theory.

As a part of this historical analysis I will reflect on the material presented so far in light of Kuhn's and Fleck's theories of scientific development in Chapter 6. I will argue that Kuhn's theory does not apply to the development of medicine. As Kuhn derived his basic ideas from Fleck, it seems that Fleck's approach is better suited to the examination of the development of medicine (after all, Fleck was a physician writing about medicine). Yet Fleck's analysis of the nature and role of concepts in medical development remains rather superficial and needs to be developed accordingly.

In Chapter 7 I will follow the theoretical development of the concept psychosomatic to the point at which it started to lose psychoanalysis as its explanatory apparatus. The conceptual disarray into which the concept eventually fell is discussed in Chapter 8. In Chapter 9 I will claim that this conceptual disarray was largely attributable to the question of monism vs. dualism in medical thinking with regard to the mind-body issue. In Chapter 10 we shall see how the mind-body issue was eventually resolved by

cutting the psyche out of the equation and replacing psychoanalysis with behaviourism. Accordingly, the concept psychosomatic was shunned and the concept biobehavioral was introduced in its place. In this process the concept psychosomatic lost its content as a scientific concept and transformed into an everyday concept. In Chapter 11 I will discuss the developmental pattern of the concept psychosomatic from a word to a scientific concept to an everyday concept in light of Vygotsky's theory of the developmental pattern of scientific concepts in general. A note on the implications of the above for medical historiography is also made.

In Chapter 12 I will consider how medical concepts function in medical consultation. To explore this I will draw on Leiman, who builds his approach to analysing psychotherapeutic consultations on the idea of human thinking and communication as a dialogical and sign-mediated activity, as inspired by the Soviet-Russian philosophers of language Voloshinov and Bakhtin. I will reflect this approach in light of the so-called representational theory of mind and attempt to show that its stimulus-computing-response schema is too simple to account for the content and conduct of medical consultation. Since the primary goal of the consultation is diagnosis, this goal is shared by the participants in the clinical consultation. What emerges within the consultation is jointly created by the patient and the physician through the anticipatory and polyphonic clinical dialogue as directed by the goal of the consultation, that is, transforming the patients' problems into medical concepts.

As a conclusion I will claim that in order to understand medical practice we need to address it as a form of human activity determined by its goal, the diagnosis. Medical concepts contain the possible set of interpretations the doctor has at his or her disposal. They function as tools for the physician's thinking during the consultation when transforming the patient's complaints into medical concepts as a joint activity with the patient. To understand the content and conduct of medical practice we need to understand its goal, that is, the nature and role of the medical concepts guiding the process. This approach may offer a means to continue toward building a systematic philosophy of medicine from where Pellegrino and Thomasma's stood almost three decades ago.

### **Note on concepts used**

The idea of examining the nature and role of theoretical concepts in medical thinking has its roots in a long tradition in German philosophy, at least since Hegel, of studying the content, development and use of concepts in areas such as political history, theology and philosophy. This enquiry is seen as crucial to understanding the “sprachliche Erfassung der moderne Welt” (linguistic constitution of the modern world).<sup>21</sup> Acknowledging this background, it needs to be emphasized that when I use the term concept in this essay I do not use it in its common Anglophone sense denoting a “mental impression of an object”, a “mental picture” or an “idea” as a dictionary defines the word.<sup>22</sup> Instead, when mentioning in this essay medical concepts, I will use the term concept strictly in the sense of an idea cast in verbal form as a word or a string of words.

Furthermore, the English word concept has its roots in the Latin word concipere meaning to take in, denoting a passive reception of something. My use of the word concept derives, following the basic theoretical approach in this essay, from the German word concept Begriff, coming from the word greifen, which means to grab or to reach for something, (nach etwas zu greifen), denoting an active relation between subject and object. Likewise, in the Finnish language the word concept käsittää derives from the word käsi, a hand, from which comes also the word käsittää, to handle something.

When I use the term activity in this essay as a theoretical concept, I use it, again, in a narrower sense than in its common English sense. In Vygotskian theory the Russian term for activity *deyatelnost* does not denote activity in general but activity that is aimed to transform something. German equivalents to that are *Tätigkeit* or *Handlung* denoting activity that is purposeful and aimed at a goal, to handle something for a specific reason.<sup>23</sup> I contend in this essay that the primary goal of medical consultation is diagnosis, that is, to transform the patient’s problem into a medical concept. This transformatory process takes place through the sign-mediated activity between doctor and patient.

When I use the word science in this essay I do not use it in its Anglophone sense denoting natural sciences as apart from social sciences and humanities but what in German language falls under a general term Wissenschaft (Naturwissenschaft for natural sciences, Gesellschaftswissenschaft for social sciences and, for history, Geschichtswissenschaft). Hence, when I discuss natural sciences, in what follows, I will use the term natural science instead of science on those occasions.

### **Note on abbreviations**

For the journal *Psychosomatic Medicine* I will use the word Journal.

For the American Psychosomatic Society I will use the word Society.

For the archive of the American Psychosomatic Society, stored in the Oscar Diethelm Library, Cornell University, New York City, I will use the word Archive. The footnotes indicating Archive material are written according to the filing system used in the library.

## Chapter 1 - Medicine and conceptual thinking in science

We may consider the clinical consultation to be the core event in medicine. This event is based on communication between people. A person seeks a physician in order to find an explanation, alleviation and cure to a problem s/he, or someone on his or her behalf, considers as needing a physician's attention. The patient expresses his or her problem to the physician with the language s/he is able to use. Even in cases when the patient cannot express him or herself verbally (unconscious, a small child, demented) there is usually someone around to explain the reason for attending the surgery at this particular moment of time. The physician's task is to draw from the patient's expressions those details that s/he finds relevant to construct what the problem might be from a medical point of view, that is, to proceed to establishing a diagnosis. This basic setting in the clinical encounter was well recognised by the earliest medical authors, as expressed in a Hippocratic treatise *The Science of Medicine* (also known as *The Art*) dating to the end of 5<sup>th</sup> century BC<sup>24</sup>:

"...physician must have recourse to reasoning from the symptoms with which he is presented...the symptoms which patients... describe to their physician are based on guesses about a possible cause rather than knowledge about it... By weighing up the significance of...various signs it is possible to deduce of what disease they are the result..."<sup>25</sup>

As the ancient author observes, patients do not necessarily have knowledge on what is the matter with them. This is in many, if not most, cases the very reason people seek a physician's advice: to gain an understanding of the nature their ailment and, through gaining it, to find a means to cure or alleviate it.

The knowledge the physician possesses is based on medical theory. That theory is, in turn, historically situated and continuously evolving, as is our understanding of the phenomena of the world in general. Medical theory is expressed in language. While the linguistic structure of medical texts follows the language used at the time of their writing, the main theoretical assumptions in medicine are expressed with concepts specific to the prevailing theory such as infection, cancer and schizophrenia. Although many of these concepts may also be used in everyday speech, such as "her laughter is

infectious”, “corruption is the cancer of society” or “your attitude is schizophrenic”, their medical content can be discerned only in relation to the medical theory of which they are a part.

The question of the nature and role of theoretical concepts in medicine has attracted relatively little attention in the medical literature. This may partly be due to the fact that medicine regards itself as having dual domains of existence, art and science. Medicine as an art is seen as what doctors do with their patients, while medicine as a science is the study of the structure and function of the human body in health and in illness. What we call medical science falls, when addressing the human body, into the realm of biological sciences and does not seem to differ theoretically and methodologically from these, apart from the interest of medicine in pathological processes alongside the study of the normal structure and function of the body. And when medicine addresses questions such as the prevalence of a certain illness, say lung cancer among smokers, and discovers connections between low social class, smoking and cancer, these problems fall into the field of social sciences and statistics. It follows from this that theoretical concepts used in medicine can be seen to be derived from other sciences and that medicine does not enjoy the status of a science in its own right; it is merely a practical activity applying the concepts and methods of sciences proper to its ends. Kuhn, for example, excluded medicine from his theory of scientific development, and he mentions medicine only in passing in his book on scientific revolutions, equating it with crafts such as metallurgy and calendar making<sup>26</sup> and with fields such as technology and law<sup>27</sup>.

On the other hand, one may claim, as Forstrom<sup>28</sup> has done, that medicine can be seen as a science in its own right since it does have a definitively stated object of inquiry, health and illness in the human organism in its environmental context. This particular object of inquiry distinguishes it from all other scientific disciplines. Furthermore, medicine can be seen as an empirical science proper deriving its concepts and methods according to its object of inquiry as presented in its practice and it develops and corrects its hypotheses and methods in both in vitro and in vivo testing. And although there is considerable overlap in medicine with other sciences such as physics, chemistry, biology, psychology, sociology etc. when attempting to understand its object, this overlap is also common in other sciences, since the

boundaries of sciences are not, in practice, strictly fenced. Medicine does not, thus, merely apply the theories and methods of other sciences but operates with concepts and methods that are specific to medicine and which cannot be derived from or applied to any other scientific disciplines.

Furthermore, as noted in the Introduction, the problem of the scientific status of medicine may partly also be due to the way we use the word science itself. For Anglophone writers the term science refers to natural sciences, that is, physics, chemistry and biology, together with their subdisciplines. Other realms of systematic inquiry, such as linguistics, history and sociology are left outside of this conception of science by definition and they are thus identified as social sciences and humanities. In this sense it is justified to claim that medicine does not qualify as a science because its object of inquiry exceeds the limits of natural sciences. On the other hand, if we accept the argument that in order for any discipline be called a science, it needs to seek knowledge in a systematic, critical and open manner, then the humanities and social sciences do indeed qualify as sciences, as does medicine in its attempt to create knowledge as a means to understand the causes and mechanisms of human illness.

Accepting that medicine is a science in its own right and that it creates and operates with a conceptual system of its own, what is, then, the role of concepts in medical theory and practice? To try to answer this question, let us review first how biologists perceive the place and function of concepts in biological theory. After all, medicine relies heavily on biology when studying the structure and function of the human body.

### **Role of concepts in biological theory**

We can discern three fundamental features of current biological theory. First, underlying all current biological theorizing is the evolutionary principle. Yet the concept evolution defies all empirical testing. There is absolutely no way to replicate and test the reasons for the extinction of dinosaurs, for example. Therefore, as Rosenberg<sup>29</sup> has noted, historical method is required for biology because biological theories give accounts of living processes over limited periods of time of varying lengths. These narratives can be evaluated for their explanatory value in light of

emerging new evidence. We may consider, therefore, biological explanation to be a special case of historical explanation.

Second, biology resists the idea of the unification of science, where all scientific theories are seen to be hierarchically ordered so that theories of chemistry could be derived from the laws of physics, biological theories from chemistry and theories of social sciences from biology. Most philosophers of biology insist that owing to the properties of living organisms acting in a given environment in a certain period of time, no such unification is possible, even in principle. Therefore, instead of attempting to reduce biological phenomena to chemistry and physics, biology needs to adopt a pluralistic approach to science where theoretical concepts and methods are built according to its objects of inquiry.<sup>30</sup>

Third, as Ernst Mayr has argued, when classical physics looks for and finds laws in inanimate matter, there are no similar deterministic laws to be found in the living world where randomness, chance and environmental diversity play a central role. Furthermore, in the living world every individual is, for genetic reasons, unique. And when populations (conglomerations of individuals of a certain type) can be seen to differ from each other, it is not by their essences but by statistical mean values of their properties, which change gradually from generation to generation as a function of their existence in a particular environment and time. Therefore, in biology the properties or behaviour of individuals or populations cannot be defined by strict universal and deterministic laws. Instead of laws, theoretical fundamentals in biology are presented in the form of concepts, such as phylogeny, adaptedness, ecosystem, evolution etc.<sup>31</sup> Let us ask, then, whether these three fundamentals in biology, historical inquiry, theoretical and methodological pluralism and theory cast in concepts apply in medicine?

As in biology, medicine's scrutiny of the problem of human illness is based on historical method. People do not fall ill all of a sudden; every illness has its developmental history, which is always unique for each and every patient. This is precisely why a medical examination starts with "taking the patient's history". When building theoretical descriptions of the features of any disease, those descriptions are also based on the knowledge of the development of a great number of cases with more

or less similar features. They are historical descriptions from which some common features are discerned to form a diagnostic category.

Furthermore, while intra- and intercellular processes in the human body may be explained to a degree with physico-chemical principles, the workings of a patient's body cannot be reduced to the actions of any single cell or an organ nor even an entire organism, since a human organism exists in a particular historical period of time in a particular environment which modifies and affects the organism's structure and functions. But when an organism exists in a given environment, only people exist and act with an agency in a human society. It follows that in order to deal with people, medicine cannot operate merely with biological concepts and with the principle of dual causation of genetic programme and environment. Medicine in its attempt to understand, explain, prevent and cure human illness has been forced to develop its own conceptual system and methodology based on tripartite causation, genetic programme, environmental influences and human agency within a given society in a particular historical period of time. This tripartite theoretical structure makes medicine unique among sciences.

When medicine builds theoretical descriptions and explanations from its observations, they are cast and presented in concepts such as *infection*, *epidemic* and *immunity*. As in biology, these concepts do not operate as laws in the sense we understand laws in physics, but rather as building blocks for medical theories that are tested both at the bedside and through empirical medical research conducted on that particular field of inquiry.

But how do medical concepts differ, if at all, from our everyday words and what is their role in medical theory and practice? To try to answer these questions, let us first examine the role of language in our thinking in general and in scientific thinking in particular.

## Concepts as tools for thinking

The question of the role of language in our thinking was already examined, as so many of our perennial questions were, in the Age of Antiquity. In *Cratylus* Plato presents Socrates discussing the issue with Hermogenes:

Socrates: But again, that which has to be cut has to be cut with something?

Hermogenes: Yes.

Socrates: And that which has to be woven or pierced has to be woven or pierced with something?

Hermogenes: Certainly.

Socrates: And that which has to be named has to be named with something?

Hermogenes: True.

Socrates: What is that with which we pierce?

Hermogenes: An awl.

Socrates: And with which we weave?

Hermogenes: A shuttle.

Socrates: And with which we name?

Hermogenes: A name.

Socrates: Very good: then a name is an instrument?

Hermogenes: Certainly.<sup>32</sup>

The idea of the instrumental role of language in our thinking was elaborated further, among others, by a Russian psychologist and philosopher of language Lev Semenovich Vygotsky (1896-1934). During his short career that ended in premature death from pulmonary tuberculosis, Vygotsky wrote studies of lasting importance on the development of speech and thinking. Because of the political tension within Soviet Russia much of his work was left to wait for decades before being published and translated into other languages.<sup>33</sup>

Vygotsky's theory of the development of human thinking is summarised in his treatise *Thought and Language*, published posthumously in Soviet Russia in 1934 and translated into English in 1964.<sup>34</sup> In this essay Vygotsky holds that the process of language acquisition is based on human activity: "in the *beginning* was the deed. The

word was not the beginning – action was there first; it [the word] is the end of development, crowning the deed”.<sup>35</sup> (italics original) That is, we learn to speak a language via social activity. When mastering a language it functions as a tool for our thinking, not only in our everyday lives but also in our scientific undertakings:

“Thus, language itself contains the basis and possibilities for the scientific knowledge... The word is the germ of science and in this sense we can say that in the beginning of science was the word.”<sup>36</sup>

Yet, for Vygotsky, word meaning is a phenomenon of thought only in so far as thought is embodied in the activity of speech, be that inner or outer, and of speech only in so far as speech is connected to thought. Word and thought are thus united in the phenomenon of verbal thought in meaningful speech.<sup>37</sup>

Vygotsky illustrates the development of the ability to use language in one’s thinking with a child who reaches a stage where s/he can form a concept table or a skirt to refer to these objects as separate from other objects. S/he is not, however, mature enough at that stage to be able to adopt and use higher-level concepts such as furniture or clothes. The appearance of these generalized concepts is, then, a sign of progress to a new level of thinking. This development is also a necessary prerequisite to understand scientific concepts.<sup>38</sup> Historical concepts, for instance, can be assimilated and used only when the growing child’s everyday conception of the past is sufficiently differentiated, that is, when his own life and the life of those around him can be fitted into the elementary generalization in the past and in the present. Similarly, a child is able to grasp geographical concepts only after s/he has acquired the schema here and elsewhere. The same process may be seen in university freshmen courses where the students are introduced to the concepts of a particular scientific discipline. It is necessary for the students to understand and master the general concepts of the subject to be able to proceed deeper into the conceptual system of the given area of knowledge and to be able to operate mentally within it. The process, as a whole, is analogous to learning a language, be it the first or any other to follow. The simple elements of a language need to be acquired before the more complex ones can be mastered.<sup>39</sup>

Vygotsky presented his ideas on the development of science in the essay *The Historical Meaning of the Crisis in Psychology: A Methodological Investigation*<sup>40</sup>, which was completed in 1927 but, owing to political pressures in Soviet Russia, only published in 1982.<sup>41</sup> In this essay Vygotsky argues that science develops through the development of concepts and, like the development of thinking in general, the development of scientific ideas is also thoroughly social in nature.

Vygotsky holds that the formulation of concepts forms the basis for the development of any scientific discipline since concepts predetermine the objects of inquiry for that particular science and the way it explains the facts it obtains, that is, its main explanatory principles.<sup>42</sup> The material for science is logically elaborated natural material selected on the basis of certain features observed in the object of inquiry. Naming a feature by a word means framing this fact into a concept, to single out one of the object's innumerable aspects such as, in physics, mass or velocity. This naming is an act toward understanding the fact by including it in a category of phenomena that has been studied empirically before. To name an object is to apply a concept to it. By means of the concept we seek to comprehend the object within a certain system of thought.<sup>43</sup>

A scientific fact is thus a feature of an object that is explained through a certain theoretical system of knowledge. It follows that science is not merely a matter of amassing a greatest possible number of facts but of arranging and naming them according to some common feature which, in turn, guides and organises further questions and methods. What determines a common feature amongst the phenomena observed in an object is expressed in a theory. For example, we may appreciate sunrise, the phases of the moon and the changing position of stars but these perceptions do not, as such, constitute a scientific observation. With the concept of *gravity* Newton connected these phenomena under a set of explanatory principles, which offered tools for further research on the nature of these events. Similarly, we may admire the richness of nature, but only with concepts such as evolution, selection and biodiversity has biology obtained conceptual tools to address the phenomena of the living world in a theoretically coherent and methodologically productive way. When Pavlov conducted his experiments he did not content himself with measuring the amount of saliva from dogs waiting for a meal, but abstracted the concept

conditioned reflex from his observations on the relationship between sound, food and saliva. We may say, then, that a scientific concept, be it gravity or evolution or conditioned reflex, is a theory in itself. It contains the methods needed to obtain the facts, accumulation of observations gathered and assumptions made on the nature of the phenomena under inquiry.<sup>44</sup>

Each scientific field formulates a set of concepts specific to itself. It follows, then, that scientific concepts cannot be transposed from one theory, i.e. conceptual system, to another as such, even if it may seem that a fact is always a fact. For example, one may assume that observing one and the same object, say, the movement of a planet, and applying one and the same method, objective measurement of that movement, should render the transformation possible. However, while the models of Ptolemy and Copernicus rested upon observing the same facts (movements of planets), it turned out that the results obtained by means of different conceptual systems led to different interpretations of those facts.<sup>45</sup> Therefore, while the facts were the same (as objective events in the world), they were, nevertheless, different facts in the sense that the definition of these facts as facts rested on different conceptual systems. To use a medical example, when the ancient physicians observed a feverish patient with painful, swollen and coated tonsils they may have discerned the same phenomenon as we do today. Yet, they are deemed different, since the underlying theory (humoral pathology vs. cellular pathology) and its explanatory principles (humoral imbalance vs. microbial infection) are fundamentally different.

Theory cast in concepts and its explanatory principles determine scientific fields together. In psychology, for example, when psychopathological problems are approached through psychoanalytic theory, the phenomena observed are not organized through the concept of the unconscious only; a causal interpretation is also attempted through the explanatory principle of sexuality. This has led to an attempt to explain all psychological phenomena through these principles. Such an attempt is characteristic among rival theories in any scientific discipline where they compete for the status of universal theory.<sup>46</sup>

Vygotsky's approach to the development of thinking in general and scientific thinking in particular is materialistic in the sense that for him material reality determines our

experience. It is, therefore, impossible to study the concepts of any scientific discipline independent of the realities they represent.<sup>47</sup> The task for a science is to transcend the boundary of our perceived consciousness and continue by separating the concept from immediate sensations (i.e. sun does not set, the earth rotates). For Vygotsky the fact that scientific knowledge can transcend the boundaries of our plain everyday perceptions is rooted in the psychological essence of knowledge itself.<sup>48</sup>

To summarize Vygotsky's position, the concepts we use in any scientific theory are not isolated and immutable formations, but active and developing tools for our intellectual processes, constantly engaged in serving our communication and understanding.<sup>49</sup> Therefore, in order to understand any field of inquiry, such as medicine, we need to examine which conceptual instruments it utilizes, how they are derived and formulated, in what circumstances and for what reasons.

The epistemological implications of Vygotsky's thesis of socially formed concepts as tools for our thinking have been examined by another Soviet-Russian philosopher, Evald Ilyenkov (1924-1979), who argued that our idea of concept as verbally expressed generalities is too narrow. Ilyenkov traces this narrow conception of the word concept back to Kant and Locke, and even further to medieval nominalism, which did not distinguish at all between word and concept.<sup>50</sup>

For Ilyenkov, the narrow understanding and use of the word concept derives from an individualistic *Robinson Crusoe* model of epistemology, in which the knowing subject is seen atomistically, isolated from the social nexus into which s/he has been born and in which s/he develops. In reality the whole idea of an isolated individual is impossible. A child inevitably grows up as a part of a community of some kind, if only from sheer necessity to survive. When a child matures to conscious life, the process takes place within a certain society in a certain historical period of time with its pre-existing spiritual environment from where s/he acquires mental tools to observe and address the world and its phenomena. It follows that a maturing person does not encounter the world face to face, as a Lockean tabula rasa, but through the prism of the ideas of the nature of the world as comprehended in the prevailing community and as expressed in the language used in it. Therefore, the material for mental activity available to the observer, his or her sensory data, is not what s/he

contemplates directly, but rather what s/he knows about the object from all the others s/he is involved with. And this can be known only through what has been recorded in social notions, that is, in speech.

To illustrate this with a medical example, let us consider our opening case where the conversation with my patient was based on the concept psychosomatic instead of neurasthenia. This derives directly from the fact of the time and culture in which we were brought up and where our meeting took place, although the patient's migraine would have been the same now as a hundred years earlier. To use another clinical example, when I was practising as a GP in the Kingdom of Saudi Arabia in the early 1990s, I had several conversations with my Arab Muslim patients on the possible role of *evil eye* and *jinns* (malevolent spirits) causing their ailments. For my Arab patients the presence of evil eye and Jinns in their lives was not folklore but a plain fact of life.<sup>51</sup> Those conversations would sound rather odd, however, if I were to try to initiate them with my Lutheran Finnish patients in Tampere, Finland. Medical anthropology is rich, indeed, with examples of diverse ideas about health and illness from all around the globe. Ideas that flourish and make sense in a particular community in a particular historical period of time but which may be considered strange, if not wholly incomprehensible, in some other times and surroundings even if the objective phenomena addressed with those ideas were the same.

This all applies to our scientific thinking as well. We do not get our scientific ideas spontaneously as revelations falling on us while contemplating some object of our personal interest. Scientific ideas emerge and develop as a part and consequence of our scientific work conducted in a particular community in a particular period of time. In order to do scientific research we need to acquire basic tools to start with, be they the skill to comprehend scientific language, use laboratory instruments or understand mathematical formulae. All this is acquired during our education, which defines for us the problems worth studying in the first place and offers the conceptual and technical tools to address them. Only when our tools turn out to be unfit to resolve a problem that we find ourselves facing, do we have to develop new tools to resolve the question, be they better instruments for measurement, new equations to disclose connections between phenomena under inquiry or novel concepts to redefine the problem at hand.

With the idea of the developmental basis for acquiring and using concepts as tools for thinking in general and scientific thinking in particular both Vygotsky and Ilyenkov echo Hegel, who writes in the *Introduction to the Philosophy of History*, how

“Kepler had to have *a priori*, acquaintance with ellipses, cubes and squares, and with the theory of how they are related, before he could invent – from empirical data – his immortal laws consisting of determinations of those concepts. One who is ignorant of the elementary concepts of that science could no more understand those laws than he could invent them – no matter how long he stared at the heavens and the movement of the stars.”<sup>52</sup> (italics original)

It is precisely in this sense that Newton’s famous maxim (in a letter to Hooke in 1676) “if I have seen further it is by standing ye shoulder of giants”<sup>53</sup>, is to be understood.

What, then, makes scientific concepts scientific? That is, how do scientific concepts differ from our everyday concepts? Ilyenkov maintains that reality is not construed as a sea of individual things, in which separate individuals catch abstract general definitions, but consists rather of an articulate system of men’s relation to nature. Language is a direct expression of this system of relations between men and things. Scientific language does not, therefore, merely give names to the phenomena of the world; it expresses the relations between them as revealed by scientific research and expressed in scientific theory.

For example, when Newton defined the concept of mass in his *Principia*, he did not merely adopt a name to refer to an object. Instead, he formulated a concept denoting the relation of two other concepts, density and bulk, to introduce a theoretical entity mass as a part of a larger theoretical system. As Newton writes:

“The quantity of matter is...arising from its density and bulk conjunctly...It is this quantity that I mean hereafter everywhere under the name of body or mass”.<sup>54</sup>

When Marx defined commodity as one of the fundamental concepts for his economic theory he wrote that in order for a thing (i.e. a mere material object outside of us) to

become a commodity it needs to contain both use-value and exchange-value. These values, in turn, are created through the socio-economic relations and activities between people in a given time in a given society.<sup>55</sup> Furthermore, as we saw before, biology does not operate only with living, concrete objects such as singular plants and animals and their constituents, but with concepts such as organism, species and selection. By means of these concepts biology studies the same reality as its sub-disciplines botany and zoology, but it does so at still more theoretical level than those sub-disciplines. It is concerned with the abstractions and concepts by which its objects of inquiry (spanning its sub-disciplines) are related; whereas the sub-disciplines proceed on the basis of prior classifications and distinctions from within biology's objects.

It is precisely in this sense, Ilyenkov claims, that a word (notion, term, everyday concept) as a verbal symbol and a scientific concept as a form of thought need to be considered as essentially different. A definition of any scientific concept refers, thus, to a *system of relations of concepts* expressing the system's organisation. A scientific concept is not just an empirical generalisation, but addresses the relations between the objects observed and links them as a part of a theoretical system. Studying the logical processing of empirical data into scientific concepts needs, therefore, to extend beyond merely observing the naming of an object with a word.<sup>56</sup>

Let us illustrate the difference between everyday concepts (words, terms, notions) and scientific concepts with an everyday example. Cooking is a highly developed human activity with its own and distinct vocabulary used in cookbooks and spoken in kitchens, both domestic and professional. Terms such as boiling, stirring, raw and ripe are commonly used to denote certain phenomena in the activity of cooking. If we claim that science operates with and develops through concepts, why do we not, then, consider gastronomic notions as concepts similar to scientific concepts when we are discussing about the preparation and taste of our last dinner? The answer is that even though the concept as a word might appear identical, such as boiling in cookery and in chemistry, in the kitchen the word boiling is used in a narrow technical sense to denote a certain phenomenon occurring in a heated pan, but in chemistry the term is used as a scientific concept encapsulating a whole theory of the behaviour of liquids and gases in relation to thermodynamic laws and the explanatory principles used in

chemistry and physics. When uttered in the kitchen, the word boiling contains no theoretical dimension apart from its technical use and it remains restricted to the realms of a stove only, while in chemistry it is used as a theoretical concept denoting a phenomenon which is logically connected to other concepts used in chemistry as a part of its theoretical structure.

Likewise, to take a medical example, a patient may complain to his or her physician of a sore throat. For the patient sore throat is an everyday concept. In medicine everyday concepts do not qualify as diagnoses and a physician needs to transform the patient's complaint to medical concepts such as laryngitis, pharyngitis, tonsillitis, mononucleosis etc, depending on the location and aetiology of the ailment, to express the nature of the problem according to the theory.

We may claim, then, that medicine is not based on technical procedures but on conceptual thinking, that is, on discerning the relations between phenomena observed and casting them into concepts that serve as tools in medical theory and practice. But how are new concepts formed and adopted into medicine? To analyse this necessitates a historical method.

### **On historical method**

As argued above, concepts in different sciences such as physics, chemistry, biology and medicine have been formulated as theoretical tools for their particular fields of inquiry. These concepts change over time. Therefore, to understand the formulation and adoption of any scientific concept as a part of scientific theory entails a historical examination of the scientific discipline in question.<sup>57</sup> Vygotsky holds that the development of scientific ideas, the rise and fall of concepts, the renewal of classifications etc, need to be analysed in relation to the general socio-cultural context of the era, together with the general conditions of the prevailing scientific knowledge and the objective demands upon the scientific approach that follow from the nature of the phenomena studied in a given stage of scientific investigation.<sup>58</sup>

For Vygotsky, the historical development of scientific concepts is fully dialectic and social in its nature. The evolution of a scientific field has its zigzags, returns, and loops which all have their own historical character and which are necessary links and stages in that development.<sup>59</sup> Therefore, an examination of the history of a scientific field is needed to explain why, at a given stage of its development, the demand and possibility for a new concept, such as psychosomatic in medicine, emerged and why that concept did not come into existence, say, a hundred years earlier. Which ideas developed into scientific concepts and which did not, which ideas were advanced, which paths they covered, what their fate was, all this depends upon often extrascientific factors that affect the development of that particular science and determine its history.<sup>60</sup>

It follows from the foregoing that we should not approach medical concepts as random products of solitary geniuses. Yet in medicine we like to think that the discoveries of the past are single-handed achievements of individual luminaries. We also like to think of the development of medicine as a logical process, where one idea has progressed to another and presumably better idea, as Burnham notes in his recent survey on the writing history of medicine.<sup>61</sup> Indeed, when we read books on the history of medicine we learn that Vesalius revealed the structure of the human body, Harvey discovered the circulation of the blood, Jenner introduced inoculation, Fleming discovered penicillin etc. True enough. Many of the landmark discoveries in medicine have been achieved because of the tenacity of some certain individuals. They have often been practising physicians facing the fact that prevailing medical theory and treatment has been, as indeed it still is, insufficient by far to resolve many of the problems we encounter in our everyday surgeries. Many if not most physicians have contemplated ways of finding better methods for diagnosis and cure but only a few have had the time and means to do scientific research in the midst of their everyday workloads and responsibilities. And even fewer of those who have had the means, have possessed the insight, stamina and luck to end up with anything useful. These are the individuals we hail as heroes in the history of medicine.

Alongside the individualistic approach, our traditional inquiries into the development of medicine have started from our current medical theory to look back towards those who have shown the way to the truth as we understand it today. As Tauber and

Chernyak point out, while exploring the birth of immunology, we have a tendency to replace “the history of a thought with our thoughts about the history”.<sup>62</sup> This approach marks those occasions that suit our present ideas of the way things are but leaves unnoticed the terrains those early researchers encountered when trying to answer the questions they felt it necessary to ask. Moreover, it fails to address the dynamics of these questions, that is, the dialogues and debates within medicine and in society at large. That is, we tend to fill the description of the development of an idea with our final, redefined and filtered appraisal of how things are and came to be.

The widely used individualistic and retrospective approach in writing history of medicine is, thus, too narrow, as beaten paths often are, to accommodate the variety of ideas and metaphors alive in the minds of our early colleagues while tackling clinical problems they encountered in their surgeries - those very problems that we face today and which justify, in the end, the whole existence of medical endeavour. As Tauber and Chernyak propose, we may attempt to adopt a complementary approach to examine theoretical developments in medicine. That is, to appreciate an idea as cast into a medical concept, we need to correlate the retrospective approach with a prospective inquiry, where the development of an idea is evaluated against its own historical context.<sup>63</sup> That is to say that whatever has been formulated in the past has been formulated in certain intellectual circumstances that provided the questions to be asked and the tools to search for answers.

Applying a historical approach to analysing the development, meaning and use of medical concepts faces two basic methodological problems inherent in any historiography. First, when attempting to illustrate the birth and fate of a concept we shall not, as Carr has reminded us<sup>64</sup>, deceive ourselves with the idea of history as merely collecting the facts and reconstructing the past *as it was*. Yet, to be plausible, constructing a historical development must be based on factual evidence. No evidence, no history, as the historian John Vincent has bluntly stated.<sup>65</sup> But historical facts are not there just waiting to be picked up and put into chronological order. They are, to use Carr’s metaphor, more like fish swimming about in a vast and often inaccessible ocean. What the historian will catch depends partly, as for any fisherman, on sheer luck, but also, and more importantly, on where he chooses to fish and what

tackle he chooses to use. And all this is, of course, determined by the kind of fish he wants to catch.<sup>66</sup>

Tracing the birth and development of a medical concept is, therefore, a process of selection from available historical material chosen for the aims of the study. As Carr notes, the historian chooses from the infinite number of available facts those which are significant for his purpose. From the multiplicity of sequences of cause and effect he extracts those that can be fitted into a rational explanation and interpretation. All the other facts and sequences of cause and effect have to be rejected as accidental, not because the facts are not true or that the relations between causes and effects are vague, but because the sequences themselves are irrelevant for that particular analysis.<sup>67</sup>

The second problem when analysing the development of scientific concepts from the early to modern era is that the meanings of concepts, even when similar as words, have changed over the course of time. For example, in chemistry the meaning of concepts such as quality, element, composition etc. have changed to the extent that no medieval chemist could understand a modern law of chemistry in the same way as we do and conversely, as Fleck<sup>68</sup> has pointed out. To use a medical example, the concept hypochondria has been a part of medical vocabulary for ages. For us the term refers to a patient's constant concern about his or her health and conviction that s/he has some unnoticed moribund disease lurking behind his or her occasional discomforts. Yet, in the seventeenth century hypochondria was considered a disease entity of its own with pains in the upper abdomen (hypo chondros, beneath the sternal cartilage), flatulence, constipation and irritability as its characteristic symptoms.<sup>69</sup> These examples underline the idea that a scientific concept cannot be comprehended without consideration of its particular historical context and the intellectual environment in which the concept was adopted and given its structure and content.

Therefore, when examining the adoption of the concept psychosomatic into medical theory I will start by first analysing how the question of the possible effect of the mind (psyche) on the body (soma) has been addressed in the medical literature throughout the history of medicine and, second, what historical circumstances and theoretical arguments led to the formulation and introduction of the concept into

medical vocabulary during the first half of the 20<sup>th</sup> century. It is only after this background information that we can attempt to comprehend the content and subsequent development of the concept psychosomatic in medical theory.

To summarise, I am testing, in what follows, a conceptual-historical approach which may offer us tools to examine, to quote Pellegrino and Thomasma, “not only what medicine is but also what kinds of knowledge it generates [and] what logical tools it uses” in medical theory and practice. We shall see in the subsequent chapters, whether the approach outlined in the foregoing may help to shed light on the understanding of the development of medicine by examining the development of its concepts before addressing the role these concepts have in everyday medical practice.

## Chapter 2 - Psychosomatic, a word

Although bodily manifestations of various states of man such as anger, fear, joy and pleasure have been well recognised and depicted in the medical literature since antiquity, the word psychosomatic is of relatively recent origin. Several authors<sup>70 71 72</sup> attribute the first use of the word psychosomatic to Coleridge, who used the term twice in an unpublished manuscript in 1828 when discussing the problem of passions in Descartes' writing.<sup>74</sup> While this may be the first known use of the word psychosomatic in the English language, Margetts has traced the first occurrence of the word in the medical literature to a *Lehrbuch der Störungen des Seelenlebens oder der Seelenstörungen und Ihrer Behandlung. Vom rationalen Standpunkt aus Entworfen* (A Textbook of the Disturbances of the Life of the Soul or Disturbances of the Soul. Treatment Considered from a Rational Point of View) by a German physician Johann Christian August Heinroth, published in Leipzig in 1818<sup>75</sup>. Margetts' finding has not been disputed to this day and it stands as a standard reference in the psychosomatic literature.<sup>76 77 78 79 80</sup> Since Margetts' observation has more bearing on the discussion to follow than that of a mere historical detail of interest, let us first take a closer look at Dr. Heinroth and his use of the term psychosomatic in his book.

Johann Heinroth was born the son of a surgeon in Leipzig in 1773. He studied medicine in the town of his birth and was awarded a doctorate in medicine in 1805. In 1810 he published his first significant work *Beyträge zur Krankheitslehre* (Contributions to the Study of Illness). Since he had developed an interest in *Seelenheilkunde* (healing of the soul), a topic he had elaborated in his 1810 book, he was nominated an extraordinary professor *in der Psychischen Therapie* in 1811 and a full professor in 1827. That made him, in effect, the first professor of psychiatry in the history of medicine. He died in 1843 while serving as Dean at the University of Leipzig.<sup>81 82</sup>

Among Heinroth's prolific writings the two volume *Seelenstörungen* constituted his Magnum Opus. In his book Heinroth gave an overview of the present state of the understanding and treatment of *disturbancies of the soul* in medicine together with an account of the history of medicine in relation to mental problems from antiquity to the

19th century. He also addressed, among various other topics, the problem of sleeplessness. Heinroth assumed that "Gewöhnlich sind die Duellen der Schlafslösigkeit psychisch-somatisch, doch kann auch jede Lebensphäre für sich allein den vollständigen Grund derselben enthalten".<sup>83</sup> That is, the problem of sleeplessness may be partly due to the inner *psychic-somatic* conflict. It is important to realise, however, that this is the only occasion Heinroth used the term *psychisch-somatisch* in his whole literary output.<sup>84</sup> Furthermore, he did not develop any theoretical considerations whatsoever based on that particular term. As a word, *psychisch-somatisch* remained in Heinroth's writings a solitary semantic expression.

It is also noteworthy that in Heinroth's thinking the terms *Seele* (soul) and *Seelenströrung* (soul-disturbance) had a strong religious resonance in the Christian-Protestant sense due to his profoundly Pietist background (Roy Porter is mistaken here when he claims that Heinroth was a Roman Catholic<sup>85</sup>). For Heinroth, sin was the ultimate cause of mental problems. Sin was not, however, a single event of wrongdoing, but rather as a life wrongly led as a whole, that is, aspiring solely to earthly possessions and bodily satisfaction instead of the Kingdom of God. It follows that the treatment of mental problems needed to be based on a moral readjustment of the patient's life through persuasion and education and even disciplinary measures.<sup>86 87</sup>

During the 19<sup>th</sup> century there are occasional occurrences of the word psychosomatic both in lay and medical literature. The Oxford English Dictionary gives an example of the use of the word by referring to a passage in Reade's novel *Hard Cash*, published in 1863: "The nocturnal and diurnal attendance of a Psycho-physical physician, who knows the Psychosomatic relation of body and mind." A British physician Bucknill discusses this approach in medicine in his book *Unsoundness of Mind in Relation to Criminal Acts* published in 1856<sup>88</sup>. For Bucknill, there were three prevalent theories of insanity in the mid-19<sup>th</sup> century, the somatic, the psychic and the somato-psychic. The first considered mental disorders to be of purely bodily origin. The second, according to the author, was founded by Heinroth who, as we saw, considered insanity to be a perversion of the soul and tantamount to sin. As for the third, Bucknill writes that "the psychosomatists find in the liability of the cerebral instrument to disease, a reasonable basis for the irresponsibility of the insane; and, in the freedom of

the spiritual will, a just ground for the responsibility of the sane.” The term psychosomatist thus denotes here the idea that the workings of one’s mind are dependent on the workings of the cerebral instrument (that is, the brain) and, as any other organ, the brain may also become diseased leading to mental impairment. The problem was where does one’s personal responsibility end if one’s ability to reason is diminished because of a brain disease.<sup>89</sup> This discussion was a part of a wider issue of man’s responsibility for his deeds before the law and under the legislation, an issue that had gained prominence by the Woyzeck case, where an apparently mentally ill man was executed in 1824 in Leipzig for murdering his ladyfriend.<sup>90</sup>

Toward the end of the 19<sup>th</sup> century an increasing number of papers were published in medical journals discussing the effects of man’s mind to the body. This was owing to the rapid advancements in both psychology and physiology, which offered novel theoretical and methodological tools to examine the workings of the human body and mind and their effects on each other. The earliest use of the term psychosomatic in an article heading that I have been able to trace<sup>91</sup> is a paper by a Henry Smith Williams entitled as *A Few Psycho-Somatic Base-Lines*, published in *American Journal on Insanity* in 1891.<sup>92</sup> The author, an assistant physician in Bloomingdale Asylum, New York, does not, however, use the term psychosomatic anywhere in the text but concentrates on discussing the neurological basis of the mind-body relationship.

During the decades to follow articles and books dealing with the mind-body issue in medicine did not seem to use the term psychosomatic in their discussions. Instead, the term psychogenesis was commonly used to indicate the supposed mental origin of various bodily ailments, especially in the German medical literature as, for example: *Zur Psychogenität des Asthma bronchiale* (1913)<sup>93</sup>, *Kriegserfahrungen über psychogene Taubheit und Stummheit* (1916)<sup>94</sup> and *Ueber psychogene Dermatosen* (1922)<sup>95</sup>. Meanwhile, the growing influence of psychoanalytic theory on medicine was seen in the early decades of the 20<sup>th</sup> century in article titles such as *Psoriasis as an hysterical conversion symbolization* (1914)<sup>96</sup>, *Die Heilung eines schweren Falles von Asthma durch Psychoanalyse* (1914)<sup>97</sup> and *Ueber die Psychoanalyse des Organischen im Menschen* (1921)<sup>98</sup>.

Another concept coming into fashion, especially in the USA, in the early 20<sup>th</sup> century was *psychobiology*. Adolf Meyer, one of its main proponents and a professor of psychiatry at Johns Hopkins University, defined the concept in an article published in JAMA in 1915 as follows:

“Psychobiology...forms clearly and simply the missing chapter of ordinary physiology and pathology. The chapter dealing with functions of the total person and not merely of detachable parts...”<sup>99</sup>

Concepts such as *psychophysical* or *psychophysiology* can be traced back to Wundt and his studies on human psychology as introduced in his *Grundzüge der physiologischen Psychologie* in 1874.<sup>100</sup> Zweig explains the use of these concepts in medicine in his article of 1931 that it is based on an idea of “...dem psychophysischen Materialismus, welcher durch die kausale Bondung der seelischen Funktionen an die Gehirnvorgänge charakterisiert erscheint...”.<sup>101</sup> (psychophysical materialism where there is a causal bond between mental functions and the brain).

In the early years of the twentieth century the literature on the effects of the mind on the body burgeoned to the extent that in 1925 Oswald Schwarz, a Privatdozent at the University of Vienna, edited a compendium on the studies conducted on the issue so far entitled: *Psychogenese und Psychotherapie Körperlicher Symptome*.<sup>102</sup> Schwarz writes in the Foreword how a new age in medicine was dawning. This was due to the post-war developments in culture and society in general which were also reflected in science and, alas, in medicine. In past decades medical research had provided new knowledge on human physiology while psychological research had revealed the workings of the human mind. These taken together presented an opportunity to understand how psychical phenomena may lead to bodily symptoms (*Psychogenese körperlicher Symptome*) and it could form a new basis for medicine as a whole. In this compendium we encounter terms such as *psychogenie* and *psychophysische* but the word *psychosomatic* does not appear anywhere in the book.

The term *psychosomatic* occurred, albeit in a truncated form in an article title in 1928 *Disease, a psysomatic reaction* published in JAMA by an American physician, George Draper.<sup>103</sup> The author writes, how

“This perfectly coordinated interplay of different tissues is accomplished through the physical agency of the sympathetic nervous systems and the imponderable forces of the emotional life. It is for this reason that man cannot be looked on segmentally as having a soma or body department on the one hand, and a psyche or spiritual-mental-nervous department on the other. He is, in fact, a psysome, or mind-body, and all his reactions to environment are psysomatic.”

The breakthrough for the word psychosomatic into medical literature was in 1935, when an American physician Helen Flanders Dunbar published a compendium *Emotions and Bodily Changes. A Survey of Literature on Psychosomatic Interrelationships 1910-1933*.<sup>104</sup> Dunbar’s book was to a large extent an expanded copy of Schulz’s work quoted above. (The subtitle of Dunbar’s book can, in turn, be seen to draw on an article by Hellmut Marx *Psychosomatische Wechselwirkungen*, published in Germany in 1933).<sup>105</sup>

In the first edition of her massive inquiry into the prevailing medical literature on the mind-body issue Dunbar writes how

“In the past it has been occasional leaders who have called attention to the problem of psyche-soma as fundamental for the physician, within the last decades this realization has begun to permeate medical literature, changing it intrinsically...there is no major division in the quarterly Cumulative Index Medicus devoted to our problem...The nearest group heading is “physical-mental relationships”, which appeared, incidentally, in 1931, after this study was already under way”<sup>106</sup>

Dunbar’s work ultimately led to the founding of a new medical journal *Psychosomatic Medicine - Experimental and Clinical Studies* in New York in 1939. In the first issue the editors discussed the novelty of the term *psychosomatic medicine*:

“Psychosomatic medicine is an expression which has not yet obtained citizenship. It does not appear in the standard medical dictionaries. To physicians this expression will have various connotations. Like all new expressions, the term “psychosomatic medicine” may lead to misconceptions and misunderstanding unless a definition is provided.”

The editors then define the object of inquiry for their approach as follows:

“Its object is to study in their interrelation the psychological and physiological aspects of all normal and abnormal bodily functions and thus to integrate somatic therapy and psychotherapy.”

We may conclude, then, that despite the occasional occurrence of the word psychosomatic in the medical literature since the early 19<sup>th</sup> century, it was introduced and adopted as a scientific concept in medicine only in the latter half of the 1930s with the founding of a scientific journal that focused on integrating somatic medicine with psychotherapy. How this integration was achieved on a conceptual level will be discussed in more detail in Chapter 5, but to put the Journal’s theoretical background into a wider medical context let us consider the following paragraph in the same editorial:

“...intensive interest and research in medical psychology is a symptom of a new orientation toward the problem of disease, in fact the sign of the beginning of a new era in etiological and therapeutic thought.”<sup>107</sup>

The editorial thus proclaims that their integrative approach marks the beginning of a “new era” in medical thinking. To understand the meaning of this claim we need now to consider against what their approach was offered as new. That is, we need to examine how the mind-body issue was addressed in medicine as a clinical and theoretical problem prior to the introduction of the concept psychosomatic into the medical vocabulary.

### Chapter 3 - Mind and body in early medical theory

Medical thinking was based on the humoral theory of health and illness for more than two millennia, until it was gradually abandoned toward the second half of the 19<sup>th</sup> century, when the cellulopathological approach replaced the remnants of the age-old assumptions on the workings of the human body and mind. To understand this conceptual change in regard to the mind-body issue we need to start our inquiry by outlining the basic features of the humoral theory. The main source for this approach is Galen, whose writing formed the basis of European medicine for centuries. To understand Galen's position we shall, however, make a brief transgression into the Hippocratic tradition since Galen considered Hippocratic texts as his ultimate authority in medicine, both in theory and in practice.<sup>108</sup>

#### The Hippocratic Corpus

The early Greek medical treatises, constituting what we today call the Corpus Hippocraticum, date from the last centuries BC. What is extant through medieval translations includes a variety of manuscripts, some seventy in all, on the theoretical and practical aspects of illness and healing. Various historians of medicine have stressed that the Corpus was not written or compiled by any single author, but it may rather be considered as the remains of an ancient medical library.<sup>109 110</sup> Among the works are practical textbooks dealing with topics such as ulcers, fractures and haemorrhoids, manuals for physicians, philosophical contemplations, lectures and notebooks. The original writings underwent numerous translations, editions and compilations in subsequent centuries. The oldest manuscripts extant date back to the 10th century AD, while the majority of surviving copies were written during the 14th-16th century. In what follows, I will rely on *Loeb Classical Library* Volumes I-VIII together with some other contemporary English translations. I will leave aside the scholarly debates on the historical and linguistic problems of the texts since it is beyond the scope of this study and also of my professional competence. An interested reader may find well-founded arguments on the problems of translation and the authenticity of the texts in recent studies on the subject.<sup>111</sup>

## The Theory

Plutarch comments on the Greek approach to health in his treatise *Aetia Romana* in the first century AD:

"Why is the shrine of Asclepius outside the City? Is it because they consider it more healthful to spend their time outside the city than within its walls? In fact the Greeks, quite reasonably, have their shrines of Asclepius situated in places which are both clean and high."<sup>112</sup>

“Quite reasonably” is not a coincidental expression used by Plutarch. Reasonably, indeed, is the prevailing tone in the Hippocratic writings when dealing with problems of health and illness. The authors of the Corpus represent a down-to-earth approach to medical practice. A physician needs to establish his diagnostic and therapeutic reasoning on sense perception, observation and experience. These are combined with medical theory, which, in turn, needs to be based on demonstrated facts instead of vague hypotheses.

Hippocratic medicine is based, as a whole, on the ancient Greek theory of the world as being composed of four elements: air, fire, water and earth. Man's body, in turn, consists of four humours elemental to man's living and wellbeing as the author of *Nature of Man* writes:

"The body of man has in itself blood, phlegm, yellow bile and black bile; these make up the nature of his body, and through these he feels pain or enjoys health. Now he enjoys the most perfect health when these elements are duly proportioned to one another in respect of compounding, power and bulk, and when they are perfectly mingled. Pain is felt when one of these elements is in defect or excess, or is isolated in the body without being compounded with all the others."<sup>113</sup>

The ancient authors stressed, however, that these theoretical fundamentals should not be applied in a mechanistic manner when evaluating man's condition. Instead, they need to be considered in caution and in relation to each and every patient's particular constitution.<sup>114</sup> Furthermore, the patient does not live in a vacuum but the physician

needs also to consider the particular circumstances the patient lives in and their effect on the patient's symptoms.<sup>115</sup>

## Diseases

We may assume that the human condition has not essentially changed since the days of the emergence of Hippocratic medicine. The joys and sorrows, pains and pleasures, ills and enjoyments of man are basically the same today as two millennia ago. In the Corpus we find discussions on conditions such as fevers, colds, sore throat, cough, diarrhoea, sciatica, asthma, varicose veins, haemorrhoids, wounds, fractures, tumours, joint problems and all sorts of other ills and ailments familiar to us also in the 21st century. It is therefore reasonable safe to assume that most, if not all, of diagnostic labels found in the Corpus refer, more or less, to same phenomena we observe in our patients today.

Together with bodily ailments there are various diagnoses in the Corpus referring to the patient's altered state of mind such as melancholia, sleeplessness, fear, dysthymia and mania, which we classify within our present diagnostic system as psychiatric symptoms. However, interpreting ancient terms such as mania or melancholia is not as straightforward as understanding diagnoses such as fractured leg, constipation or nosebleed. It seems that the authors of the Corpus applied their terminology of what we would consider mental derangements to a fairly wide spectrum of phenomena. Melancholia implies, for example, a range of symptoms from severe depression to mere nervousness.<sup>116</sup> Moreover, mania seems to include a cluster of symptoms when, broadly speaking, a person is "out of his mind".<sup>117</sup> But let us ask next, how are these mental phenomena related to the workings of the body?

## Mind and body

The Corpus holds fairly unanimously that all mental phenomena have a bodily basis. In short: Man's mind is seated in the brain. The author of the *Sacred Disease* is very clear on this:

"Men ought to know that from the brain, and from the brain only, arise our pleasures, joys, laughter and jests, as well as our sorrows, pains, griefs and tears. Through it, in particular, we think, see, hear, and distinguish the ugly from the beautiful, the bad from the good, the pleasant from the unpleasant...It is the same thing which makes us mad or delirious, inspires us with dread and fear, whether by night and by day, brings sleeplessness, inopportune mistakes, aimless anxieties, absent-mindedness, and acts that are contrary to habit.<sup>118</sup>

Since man's mental capacities are dependent on the brain, they are, consequently, subject to alterations in the brain's functions:

"These things that we suffer all come from the brain, when it is not healthy, but becomes abnormally hot, cold, moist, or dry, or suffers any other unnatural affection to which it was not accustomed. Madness comes from its moistness. When the brain is abnormally moist, of necessity it moves, and when it moves neither sight nor hearing are still, but we see or hear now one thing and now another...But all the time brain is still a man is intelligent."<sup>119</sup>

We may conclude from the above and other examples in the Corpus that in the Hippocratic theory the basic explanatory principle for mental phenomena is physical in the sense that the imbalance of humours leads to mental derangement. This imbalance is, in turn, caused by wrong conduct of life or unhealthy environment. But can the situation be the other way around? Did these ancient writers consider the possibility that man's mental state could affect his or her body to the extent that it caused diseases?

#### Mind-body causality

It appears that the Hippocratic writings as presented in the Loeb editions are rather sparse in discussing the possible effects of man's mind on the workings of the body. For example, the author of *Epidemics III* describes a woman in Thassos

"...of gloomy temperament, after a grief with a reason for it, without taking to bed lost sleep and appetite, and suffered thirst and nausea."<sup>120</sup>

The poor lady eventually developed

"...fears, much rambling, depression and slight feverishness. Early in the morning frequent convulsions; whenever these frequent convulsions intermitted, she wandered and uttered obscenities; many pains, severe and continuous."<sup>121</sup>

The case history ends with the patient having copious menstruation on the third day. How the illness eventually developed, we have no accounts to rely on. But how is grief, or any other emotion, transmitted to physical symptoms? It seems that the case is, according to the *Corpus*, the other way around: bodily changes cause mental aberrations. The author of the *Sacred Disease* explains:

"Those who are mad through phlegm are quiet, and neither shout nor make disturbance; those maddened through bile are noisy, evil-doers and restless, always doing something inopportune. These are the cause of continued madness. But if terrors and fears attack, they are due to a change in the brain. Now it changes when it is heated, and it is heated by bile which rushes to the brain from the rest of the body by way of blood-veins. The fear besets the patient until the bile re-enters the veins and the body."<sup>122</sup>

The author continues by distinguishing causeless distress, nightly terrors and fears, which are due to chilling and contraction of the brain caused by phlegm, heating of the brain due to bile, and excess of blood in the brain, respectively. When the balance of humours is achieved, the patient will regain his sanity.

There are a few other occasions in the *Corpus* where mental problems are presented together with bodily symptoms, but there are next to no remarks on possible mind-body causality whatsoever, as seen in following examples:

"Among psychical symptoms are intemperance in drink and food, in sleep and in wakefulness..."<sup>123</sup>

"In every disease it is a good sign when the patient's intellect is sound and he enjoys his food; the opposite is a bad sign."<sup>124</sup>

For madness to be followed by dysentery, dropsy or raving is a good sign.<sup>125</sup>

The *Corpus* is also scant in addressing what we would consider psychotherapeutic measures to alleviate patients' problems. Only a couple of practical observations can

be found on the importance of considering man's state of mind during the course of treatment and recovery:

"One must also take into consideration the inclinations of the person's mind and the strength of his body. For different patients carry out different instructions either easily or with difficulty."<sup>126</sup>

"For some patients, though conscious that their condition is perilous, recover their health simply through their contentment with the goodness of the physician...But he who has taken the sick man in hand, if he displays the discoveries of the art, preserving nature, not trying to alter it, will sweep away the present depression or the distrust of the moment.... Yet I do not forbid you trying to please, for it is not unworthy of a physician's dignity."<sup>127</sup>

There are, however, a few remarks to be found in the Corpus referring to the bodily manifestation of emotions. The author of Humours remarks how

"...the sudden sight of a snake causes pallor."<sup>128</sup>

Different emotions such as fear, shame, pleasure, passion etc. were seen to affect different organs specific to the emotion:

"...to each of these the appropriate member of the body responds by its action. Instances are sweats, palpitation of the heart and so forth."<sup>129</sup>

The author of the Sacred Disease observes how when in pain the body shivers and is tense, the same phenomenon is

"...produced by excess of joy, because the heart and the diaphragm are best endowed with feeling."<sup>130</sup>

The explanatory principle for the mediation in these phenomena is physical, or, to be more accurate, humoral. On the whole, there are no attempts whatsoever in the Corpus to explain bodily illness with mental processes. The case between psyche and soma in Hippocratic medicine seems to fall on the benefit of the soma, as

indicated in *Regimen IV* (also known as *Dreams*), which offers a strong argument on the superiority of man's body to his soul:

"...For when the body is awake the soul is its servant, and never her own mistress, but divides her attention among many things, assigning a part of it to each faculty of the body - to hearing, to sight, to touch, to walking, and to acts of the whole body; but the mind never enjoys independence."<sup>131</sup>

We need to be cautious, of course, of inferring from the Corpus unanimous ideas of early Greek physicians on any of the matters presented in the text available. As noted earlier, we are dealing with remnants of treatises written by several authors during the last centuries BC, when various ideas and theories of health and illness were alive and well and rivalling. The approach presented in the Corpus is, however, the one that formed the basis for medical thinking for centuries to follow as compiled, expanded and explained by Galen in the second century AD. Let us then see, what he has to say about the mind-body issue in medicine.

## **Galen**

Galen (AD129-200) was by far the most influential medical writer of antiquity – if not in the entire history of medicine. Born in Pergamum, he made a career in Rome where he practised as personal physician to the Emperor Marcus Aurelius. He wrote some 300 treatises on medicine and philosophy of which some 150 have been preserved to our day in Kühn's Greek edition with Latin translation.<sup>132</sup>

To the best of my knowledge no comprehensive studies have been published on the mind-body question in Galen's thinking. This is partly due to the lack of critical modern translations of Galen's extant texts. While only a small portion of Galen's writing has been translated into English I try, nevertheless, to build a case for Galen's position on the mind-body issue on available translations.

## Mind and body

Galen discusses the problem of the origins and essence of man's soul in his book *The Construction of the Embryo*. He contents himself, however, with describing different approaches to the question while avoiding taking a definite stand to any of them and ultimately leaves the issue open.

Galen follows closely the Hippocratic doctrine in his treatise *The Soul's Dependence on the Body*, where he sees man's rational soul as being seated in the brain.

“The rational soul, seated in the brain, is able to perceive through the organs of perception, through the objects of that perception to remember, and by itself to discern the conflict and consistency between facts, and to analyse and collate them...the rational soul has several faculties: perception, memory, and understanding, as well as all the others...it can hear, smell, taste, and touch...it has the following faculties: visual, acoustic, olfactory, gustatory, tactile.”<sup>133</sup>

The faculties of the rational soul depend on the mixtures of the body while their composition is affected by the way we conduct our lives:

“...we derive a good bodily mixture from our food and drink and other daily activities... this mixture is the basis on which we then build the virtue of the soul.”<sup>134</sup>

When dealing with the substance of body and soul Galen follows Aristotle's doctrine, where the common substance of all bodies comprises on two principles, matter and form. Matter is in itself lacking in quality but contains within it a mixture of four qualities, heat, cold, dryness and wetness and these qualities give rise to the flesh, fat, gristle and other bodily entities. Since the soul depends on the body, its properties follow those of the body. The soul is

“...the ‘form’ of the body...meaning the mixture of these qualities...thus the substance of the soul, too, must be some mixture of these four qualities, heat, cold, dryness, and wetness – or ...the hot, the cold, the wet, and the dry.”<sup>135</sup>

Galen opposes the Platonic idea of the immortality of the soul in favour of the soul's mortality and dependence on the body.<sup>136</sup> Not only is man's soul dependent on the body and thus mortal, but its workings are also based on the composition and workings of the brain. Galen illustrates this in his treatise *The Art of Medicine*:

“Quick-wittedness is an indication of a fine substance in the brain, while slowness of intellect is an indication of a thick one; aptitude to learn an indication of a substance which takes impressions easily; and memory of a stable one. Similarly, inability to learn indicates a substance which takes impressions with difficulty, and forgetfulness one which is loose and fluid. Changeability of opinion indicates a hot one, while stability indicates a cold one.”<sup>137</sup>

### Mind-body causality

If the rational soul is entirely dependent on the body to the point of being mortal what, then, might be the reverse situation? Is there a way in which the workings of the soul can affect the body? This seems, in Galen's opinion, to be the case. In the treatise *The Best Constitutions of our Bodies* Galen writes that

“There are two causes of harm to our bodies: external influences and excretions from our food. External influences are, for example, when someone is heated, cooled or moistened, or dried beyond the appropriate level. Exhaustion, grief, insomnia, worry, and all such matters should also be put into this category...”<sup>138</sup>

In his book *The Art of Medicine* he deliberates the matter as follows:

“And if we make a classification of all the necessary factors which alter the body, to each of these will correspond a specific type of healthy cause. One category is contact with the ambient air; another is motion and rest of the body as a whole or of its individual parts. The third is sleep and waking; the fourth, substances taken; the fifth, substances voided or retained; the sixth, what happens to the soul.”<sup>139</sup>

What, then, may happen to the soul to the extent that it may harm one's bodily well-being? In his treatise *The Affections and Errors of the Soul* Galen writes that there are five “affections of the soul”, grief, rage, anger, desire and fear.<sup>140</sup> The effects of

anger to the body are illustrated in Galen's short introductory book for medical freshmen *The Pulse for Beginners*:

“In anger the pulse is deep, large, vigorous, quick, and frequent. In pleasure it is large and sparse...In grief it is small, slow, faint and sparse. In...fear it is quick, tremolous, irregular.”<sup>141</sup>

The ill effects of the affections of the soul on the body are mediated, according to the underlying theory, through imbalance of humours in the body as noted, for example, in *The Art of Medicine*:

“...motion, emptiness, sleeplessness, evacuation, and all mental affections dry the body, while their opposites moisten it.”<sup>142</sup>

#### Clinical applications

It seems that while there is little to be found in the Hippocratic Corpus in terms of the effects of the mind on the body, Galen is more generous in reflecting on the effects of one's mental state to his or her bodily well being. But what are the therapeutic consequences, if any, of these deliberations on the effects of the soul on the body? In *The Best Constitution of our Bodies* Galen writes, that

“the relative immunity of the well-proportioned body to external influence is clear from the very fact of its good mixture, which is equidistant from all extremes and therefore not liable to fall into imbalance...Such a body will automatically be endowed with the best humours of all, and will thus be better able to withstand grief, anger, insomnia, worry, rain, drought, plague, and indeed all causes of disease.”<sup>143</sup>

In *The Art of Medicine* Galen advises us:

“Obviously one must refrain from excess of all affections of the soul: anger, grief, pride, fear, envy, and worry; for these will change the natural composition of the body.”<sup>144</sup>

In *The Affections and Errors of the Soul* Galen takes the issue further:

“Since errors arise from false opinion, while affections arise from irrational impulse, I judged that one should first free oneself from affections: it is not unlikely that these may in themselves constitute another source of false opinion. There are affections of the soul that are universally acknowledged as such: spirit, anger, fear, envy, excessive desire; and I would add excessive haste in forming love or hatred for any object as another affection. ‘Moderation is best’ seems to me a good saying, nothing that happens without moderation is good.”<sup>145</sup>

To summarise, for centuries to follow these treatises formed the basis for the question of the effects of mental phenomena to the bodily workings and vice versa for physicians. According to this approach, whatever mental alterations a patient presented with, they are, in essence, a result of the imbalance of humours affecting the functions of the brain. These imbalances, in turn, are consequences of wrong diet and unbalanced conduct of life. One’s soul is, thus, totally dependent on the workings of the body and there was little room for the idea of the mind affecting the body causally as an independent entity. On the other hand, there was the Platonic doctrine, adopted and defended by Christian theology during the centuries to follow, that man’s soul is independent and immortal and guided his or her bodily existence. Aristotle, in turn, stood somewhere in between those two approaches favouring neither the one nor the other. This ambiguity left Aristotle open to be enlisted by either side of the debate, as will be seen below.

While remnants of Galenic ideas were influential for European medical thinking until the 19<sup>th</sup> century (and can still be heard to echo in our own days) new fundamentals for medical theory started to emerge during the Renaissance leading to what we now consider to be modern medicine. To outline the development of these fundamentals from Galenic thinking, I shall examine the ideas of Descartes as the next starting point for what follows. After all, it is Descartes who is commonly presented as the central figure for the transformation of European philosophy from Medieval to Modern<sup>146</sup> and who is, simultaneously and erroneously, blamed for the separation of man’s mind from his body.

## Chapter 4 - Passions, imagination and the body

According to his own testimony, the central motive and theme for Descartes in all of his works was medicine. In his treatise *Discourse on Method*, published in 1637, he declares how the principal aim of practical philosophy is not only to gain mastery over nature but the “preservation of health, which is undoubtedly the first good, and the foundation of all the other goods of this life”.<sup>147</sup> Furthermore, he assumed that “if it is possible to find some means of rendering men as a whole wiser and more dexterous than they have been hitherto, I believe it must be sought in medicine”.<sup>148</sup> Descartes was convinced that with proper methods of research it would eventually be possible to “...free ourselves from an infinity of illnesses, both of the body and of the mind, and even perhaps also of the decline of the age, if we knew enough about their causes and about all the remedies with which nature has provided us.”<sup>149</sup>

Although Descartes formulated his basic ideas about body and soul already in the *Discourse*, he entered head on into the perennial dispute on the mind-body problem in the *Preface of his Meditations*:

“...as regards the soul, although many have considered that it is not easy to know its nature, and some have even dared to say that human reason has convinced us that it would perish with the body, and that faith alone could believe the contrary, nevertheless, inasmuch as the Lateran Council held under Leo X (in the eighth session) condemns these tenets, and as Leo expressly ordains Christian philosophers to refute their arguments and to employ all their powers in making known the truth, I have ventured in this treatise to undertake the same task.”<sup>150</sup>

Descartes was not, thus, inventing the idea of the separation man’s soul from his body. Instead, he took the challenge to defend the doctrine of the Catholic Church with philosophical, instead of theological, arguments together with “natural reason” following the Pope’s dictum as a devoted Christian and a Catholic philosopher. But what was that Lateran Council declaration all about and why did the Church take such a strong position on that issue at that particular moment in history, a position that was worthwhile for Descartes to defend more than a hundred years after its introduction?

## Body and soul

By the time of the Lateran Council meeting in 1517 the Catholic Church had adopted Thomas Aquinas' (1225-1274) formulation of the structure of the human soul. Aquinas had postulated, relying on Aristotle, that in each living thing the soul is one substantial form and it determines the nature of man's living body and it also has powers to activate the body. In addition to this, human beings have another, rational soul with five faculties: intellection, vegetative and sensitive powers, local motion and appetite. The last four are immersed in particular organs and activate them accordingly, while intellection is a psychic power which is active without the use of any specific organic structure. As the body is destructible and mortal, the soul could be destroyed only if it were totally dependent on the body for its activities, as is the case with the souls of animals. But since humans have rational soul with an activity (intellective cognition), that is not dependent upon any bodily organ, it can exist independently of the body and it is, hence, immortal.<sup>151</sup>

At the time St Thomas wrote his essays, the treatise *On Generalities* by Abu al-Walid Muhammad ibn Ahmad ibn Rush (known in the Latin West as Averroes, a polymath born in 1126 in Cordoba, Spain) had become one of the standard textbooks in European medical education. Averroes also based his argumentation on Aristotle and he asserted, aligning himself with St Thomas, that body and mind are two distinct substances. He claimed, however, that there is a single eternal mind common to all human beings, while each human body entails a mortal soul. This idea raised serious concerns in the Catholic Church, since it suggested that there is no individual immortal soul to survive after a person's death. By the 15<sup>th</sup> century Averroes' ideas had been deeply immersed in the Italian medical schools, especially those in Padua and Bologna. This doctrinal controversy, eventually, led to an open conflict between medical scholars and the Catholic Church. In an attempt to end the dispute once and for all Pope Leo X banned Averroist ideas in the Lateran Council of 1517, the very text Descartes refers to in his Preface mentioned above.<sup>152</sup>

The Pope's dictum did not, of course, solve the theoretical problem of the relationship between man's mind and his body. Only three years after the Lateran declaration

Pietro Pomponazzi (1462-1525), a professor of medicine at the University of Padua, published a treatise *On the Immortality of the Soul* where he argued, relying again on Aristotle's reasoning, that each human rational soul is material and it is dependent upon the body in all its activities: "...the human soul is unqualifiedly the act of a physical and organic body, since it has no operation in which it does not depend in some way on the body".<sup>153</sup> It is, therefore, inseparable from the body and, therefore, mortal.

Pomponazzi's book fuelled the debate on the nature and relationship of the human mind to the body to continue both in theology and in medicine. This controversy gained further momentum in the late Renaissance, with new attempts to prove the immortality of the soul apart from the Thomist interpretations of Aristotle. For example, Francesco Piccolomini (1582-1651), a professor of philosophy at the University of Padua and the head of the Jesuits, postulated against Pomponazzi and claimed that humans are composed of a body, an organic soul and a mind that are all distinct. The organic soul is mortal material form immersed in and extending throughout the body, whereas the human mind is an immaterial substantial form created by God. The power of the organic soul activates the bodily organs but the mind has no organic powers whatsoever, it only thinks. The organic soul operates by means of organs. Sense perception is the result of motions produced by external objects affecting sense organs, nerves and brain. The mind, in turn, can understand and contemplate concepts such as God, religion and the infinite, which are not produced by sense organs, but are workings of a mind independent of the body.<sup>154</sup>

These controversies were not limited to the Italian medical faculties, but flourished throughout the Catholic medical world of the time. For example, Thomas Fienus, a professor of medicine at the deeply Catholic University of Louvain, joined the debate in 1608 with his book *De Viribus Imaginationis*<sup>155</sup> where he discussed the relation of the soul, or "imagination", to the body relying on the Catholic interpretation of the issue. He held that imagination was a cognitive, immanent and immaterial faculty and could act directly upon matter, including the human body. It follows that imagination cannot cause or cure diseases either. Imagination may, however, arouse emotions, which can affect the body via the movement of humours and spirits and if that affection lasts long enough, that can lead to disease. As a general conclusion Fienus

established that “diseases...are caused and cured through the natural vegetative powers, and vegetative powers are not directed or commanded by the sensitive powers of the intellect.”

Returning now to Descartes, it is obvious that the problem of the relation of man’s mind to his or her body had been widely discussed well before Descartes entered the scene and his ideas concerning the mind-body question were not so very original. His main thesis concerning the relation of the mind to the body had been formulated and discussed before and he merely repeated and defended contemporary Catholic interpretations of the issue. What Descartes propagated was the idea that the essence of all things material is extension and what is extended can be measured and analysed with mathematical, that is, precise and “infallible” methods. The human body is material and, hence, extended and has the same properties as any other corporeal entity, size, shape, position, rest and motion. The human body can, therefore, be analysed by mechanics and mathematics like any other mechanical system, be it a water pump or a mechanical clock. (The clock metaphor is not Descartes’ idea for describing the structure and function of the human body; it seems to have appeared in the European literature some time in the 14<sup>th</sup> century.<sup>156</sup>) The human mind, as the Catholic doctrine maintained, is not material, and being immaterial, it lacks extension and it cannot, therefore, be divided into parts or measured. As Descartes plainly established his position in the Sixth Meditation: “...body, by its nature, is always divisible and ...mind is entirely indivisible”.<sup>157</sup> The human mind cannot, thus, be measured and analysed by mathematical, that is, exact methods. Mind has only one function, to think. It is related to the whole body but it is not the agent that moves the body. The workings of the body are to be explained solely on corporeal and mechanical principles such as the circulation of the blood. The death of the body is due to the disintegration of bodily systems without interference from the mind.

Even though the mind is unextended, Descartes was of the opinion that it is related to the body as a whole and communicates with the body. In the *Passions of the Soul* Descartes writes how the mind, when desiring something, moves “the little gland to which it is closely united to move in the way requisite to produce the effect which relates to this desire”.<sup>158</sup> It follows, then, that wrong desires may harm the body. And similarly, events in the body may move the gland and thereby affect the mind. This

entails therapeutic possibilities since: “the health of the body...very much aid the mind to rid itself of all the passions that are involved in sadness and make way for those that are involved in joy”.<sup>159</sup> Descartes does not, however, take these conclusions any further in a clinical sense to analyse their pathological and therapeutic implications.

Descartes’ reasoning and optimism about revealing the secrets of nature through mathematical methods were met with enthusiasm as well as criticism already in his lifetime. Indeed, Descartes’ confidence in mathematics as a solid foundation for disclosing the true nature of things must have been assuring to those aspiring minds who have found endless scholastic debates leading, seemingly, nowhere. As Descartes writes in *Discourse*:

“Above all I enjoyed mathematics, because of the certainty and self-evidence of its reasoning...I was astonished that on such firm and solid foundations nothing more exalted had been built...”<sup>160</sup>

In short, Descartes was convincing his readers, that there is “an infallible method”, which could solve our problems in understanding the world. But that method, mathematics, was to be applied merely to corporeal phenomena since only corporeal, that is, extended phenomena can be measured and analysed by mathematical methods. While this approach boosted the study on the workings of the human body, leading to what in medicine was to be called iatromechanics, it inhibited the possibility of the development of psychology as a science since, being unextended, the human mind could not be measured or analysed by mathematical methods, even in principle. However, as it turned out, disputes on the relation of man’s mind to his or her body and on the effect of one’s mind to one’s bodily health and illness were not settled with Descartes’ doctrines either and the debate continued.

### **Mechanistic vs. spiritual doctrines**

By the time of the debates taking place between Catholic theologians and medical scholars, the developing doctrines of the Reformation had to face the same questions

on the relation of man's mind to his body and to formulate answers based on emerging Protestant theology.

Luther's main associate Philipp Melanchton, (1497-1560), a professor of theology at the University of Wittenberg, can be seen, quite naturally, as the first to attempt to address the mind-body issue from the Protestant point of view. In his writing Melanchton followed the ideas accepted by the Catholic Church (Melanchton was, after all, educated as a Catholic). The rational soul is divinely created and infused into the body. It has the capacity to think, create and judge. Since no corporeal organ can perform these activities, the human mind must be distinct from the body and, thus, immortal.<sup>161</sup> While this doctrine did not essentially differ from Catholic interpretations, it nevertheless formed the basis of the theoretical developments within emergent Protestant medical scholarship.

Towards the end of the 17<sup>th</sup> century the rapidly developing German Protestant economic and intellectual life was concentrated within a triangle formed by Berlin, Erfurt and Dresden. Within that triangle we find towns such as Leipzig, Wittenberg, Halle and Jena, which hosted renowned universities with theological faculties defining and defending the essence of Protestant ideas of what Christianity and the world are all about. But it was not merely academic Protestant doctrines that guided the intellectual and practical lives of the 17<sup>th</sup> and 18<sup>th</sup> century Prussians and Saxons, but also, and perhaps more importantly, emerging German Pietism that gained a strong hold over the minds of the people struggling between the demands of the Faith and the urges of their earthly and seducing minds and bodies.

German Pietism originated in Frankfurt in the late 17<sup>th</sup> century as a response to the rigid Lutheran orthodoxy and secularization that had crept into the parish life. A group of believers started to gather together to pray in people's homes instead of in churches. Their aim was to encourage people to read the Bible themselves instead of listening to the clergy and to take personal responsibility for one's spiritual life. These ideas soon developed into a vastly influential movement throughout the Protestant Christian world (the movement gained its name from the way the forerunners named their groups, *Collegium Pietatis*).<sup>162</sup>

In 1694 a new university was opened in Halle, less than forty kilometres from Leipzig, by order and under the protection of Elector Frederick III of Brandenburg-Prussia. From its very beginning the university became the stronghold of the Pietist movement, when August Herman Francke, one of the central figures of early Pietism, was appointed as the first professor of theology. There was, however, increasing tension among Pietists between those with strong emotional undertones to those preferring a more moderate approach to the questions of faith and Christian life. This tension was also palpable in the new university, which was to be fully staffed with Pietist professors.<sup>163</sup>

The university also established a medical faculty, which became widely influential in the developments of 18<sup>th</sup> century medicine through the works of Hoffmann (1660-1742), who was appointed as a professor of medicine in 1693 and Stahl (1660-1734) who received a chair in medicine in 1694. They defended somewhat antithetical ideas of how man's mind is related to his body and wellbeing.

Friedrich Hoffmann was born in 1660 the son of a town physician in Halle. In 1678 he enrolled at the medical faculty in Jena to follow in his father's footsteps in medicine. After graduating in 1681 he travelled in Holland and England. On his return he practised in various positions and was eventually elected the first professor of medicine and natural philosophy in Halle.<sup>164</sup>

Hoffmann was a devout Pietist, but he kept his distance from the enthusiastic side of Pietism on the grounds that a physician should not be superstitious. According to Hoffmann, the light of grace is to be found in the Scriptures and the sacraments, whereas the light of nature can be found only by studying nature. The purpose of the latter was to expose the relationship between Creator and His skilful Creation as expressed in Hoffmann's inaugural oration *On Defeating Atheism by Reference to the Skilful Structure of the Body*.<sup>165</sup>

Hoffmann was an ardent admirer of Descartes. He published a small medical textbook *Fundamenta Medicinae ex Principiis Naturae Mechanicis* in 1695, where he writes in the Introduction how natural philosophy must avoid speculation, rest on experience and establish its conclusions by a clear mathematical method. Truth rests, in short, on

sensory observation and mathematical proof. For Hoffmann, the ultimate principles for nature and the body were matter and motion and all motion stems, ultimately, from God, the prime mover of all things.<sup>166</sup>

In 1694 Hoffmann invited his old friend Georg Ernst Stahl, with whom he had studied and shared a room in Jena, to work as a second professor of medicine in Halle. Stahl (1660-1734) was born the son of a Protestant clergyman in Anspach, Bavaria. After graduating in medicine at the University of Jena in 1684, he remained at the university as a teacher. In 1687 he was appointed as a court physician to Duke Johann Ernst von Sachsen-Weimar. He held a chair in medicine at Halle from 1694 to 1717, when he was appointed physician to King Friedrich Wilhelm I of Prussia in Berlin.<sup>167</sup>

Like Hoffmann, Stahl was also a devout Pietist. He was a prolific writer on various fields of knowledge and by coming generations he was to be remembered especially for his ideas on chemistry. He supported a theory according to which combustible bodies contained a substance *phlogiston* that was released during combustion, leaving behind vitreous earth as ashes, such as after burning coal.<sup>168</sup> Stahl's influence, however, was at least as important for the medicine of his time as it was for chemical theory. In his magnum opus *Medicina Vera* of 1708 he outlined his ideas on the human body and soul from the medical point of view.

Stahl developed his approach to the workings of the body by observing his patients and presenting them as case studies in his writings. For example, when dealing with General von Natzmer's sleeplessness and nausea he dismissed simple somatic causes. He sought instead the aetiology and cure from the mental problems the general was having at the time. When Stahl observed the symptoms of the enthusiastic Pietists while being in a state of religious turmoil, he paid attention to the overall changes in the working of their bodies. These, he found, did not fit satisfactorily with the mechanistic explanations that were in fashion at the time and favoured by Hoffmann.<sup>169</sup>

For Stahl, the human body was in the service of the soul, which penetrated and guided it to the full. His work *De Passionibus Animae Corpus Humanum Varie Alterantibus* (On the passions of the mind variously affecting the human body) published in 1695 was one of the first attempts ever to establish the connection between cognitive,

emotional and bodily changes within the human organism.<sup>170</sup>

Stahl's Pietism was more enthusiastic than of Hoffmann, who took a more rational approach to life. While Hoffmann considered a Christian to have two lives, the one spiritual communicating with God and the other physical as a regular appearance of motions in the body, Stahl considered all motions of the body to be derived from spiritual life. The soul, in Stahl's view, gave momentum and direction to all bodily motions. Body and soul thus formed an indivisible unity.<sup>171</sup> Intelligence is, in turn, a sum of sensory, imaginative, emotive and mental perception and these are coordinated in an individual organism. He maintained that mechanical theories could not possibly explain the purposeful action of living beings.<sup>172</sup>

Stahl's ideas were keenly adopted by the Pietists since they were readily compatible with their worldview of man as a total and independent actor in the world.<sup>173</sup> This particular vein of German medical thinking leads, eventually, to the early 19<sup>th</sup> century Leipzig medical circles and to Professor Heinroth and his profound Pietist conviction that Sin is the ultimate cause of man's illness and misery in this world.

### **Physics, psychology and medicine**

As seen in the above, the solutions suggested to the mind-body problem in 17<sup>th</sup> and 18<sup>th</sup> century medicine were closely tied to Catholic and Protestant interpretations of the issue. These approaches rested on Aristotelian ideas of the structure of man's soul where man's mind is seen to act as an independent entity, unable to directly affect the body. A mediator was needed, and this was found in the harmful effects of the emotions on the body, aroused by unsound thinking or sinful conduct of life.

While Descartes' doctrines had left man's mind outside the systematic study of nature, the rapidly developing research on natural phenomena based on mathematical method opened up possibilities to address medical problems with novel concepts. To illustrate this new phase in medical thinking let us consider the following paragraph from a medical paper published in Paris in 1779:

“According to the familiar principles of universal attraction, ascertained by observations which teach us how the planets mutually affect one another in their orbits, how the sun and moon cause and control the ocean tides on our globe and in the atmosphere, I assert that those spheres also exert a direct action on all parts that go to make up animate bodies, in particular on the nervous system, by an all-penetrating fluid. I denoted this action by the *Intensification and the Remission* of the properties of matter and organic bodies, such as gravity, cohesion, elasticity, irritability, electricity...By these considerations I established that the animal body, being subjected to the same action, likewise underwent a kind of ebb and flow.<sup>174</sup> (italics original)

In this short paragraph we meet an attempt to apply the recently developed concepts of physics, such as *gravity* and *electricity*, to explain the workings of living bodies. Indeed, why would forces able to influence the movement of oceans and planets not affect living bodies as well?

While phenomena such as magnetism and the attraction of hair to objects rubbed with cloth were already recognised and described in antiquity, the first large scale systematic study on magnetism, *De Magnete*, was published as late as in 1600 by William Gilbert (1540-1603), the appointed physician to Queen Elizabeth I. The next major step in publishing observations on electricity and magnetism was due to another Englishman, Stephen Gray (1666-1736) who, apart from describing the properties of conductors and insulators, demonstrated the ability of the human body to act as a conductor.<sup>175</sup> As a consequence of these and many other contemporary studies, public demonstrations of various magnetic and electric phenomena using people as media had become fashionable throughout Europe by the mid 18<sup>th</sup> century. It is from this vein of experimenting and theorizing that the quotation above from a Swabian-born physician Anton Mesmer (1743-1815) derives. Mesmer wrote, how

“I possessed the usual knowledge about the magnet: its action of iron, the ability of our body fluids to receive that mineral. The various tests carried out in France, Germany and Britain for stomachache and toothache were known to me. These reasons, together with the analogy between the properties of this substance and the general system, induced me to regard it as being the most suitable for this type of test.”<sup>176</sup>

Mesmer observed, however, that *mineral magnetism* was not sufficient to explain the phenomena encountered in the living body, since obviously

“another principle was causing the magnet to act, the magnet itself being incapable of such action on the nerves, and I saw that I only had a short way to go in order to arrive at the *Imitative Theory*, which formed the subject of my research.”<sup>177</sup> (Italics original)

To replace the concept mineral magnetism Mesmer offered a new concept *animal magnetism* to refer to the phenomena he observed in his practice. This new concept was to be understood as a whole new theoretical opening, since

“I have always stressed in my writings that the use of the magnet, however convenient, was always imperfect without the assistance of the theory of Animal Magnetism...The desire to refute such errors once and for all, and to do justice to truth, determined me to make no further use of electricity or of the magnet from 1776 onwards.”<sup>178</sup>

Mesmer offered, thus, a new concept Animal Magnetism as the explanatory principle for the phenomena encountered in therapeutic sessions where the patients experienced and demonstrated various bodily phenomena during his treatment. Mesmer postulated that these phenomena were due to magnetic fluid that emanates from the physician and affects the patient.

Mesmer's theory of Animal Magnetism was widely accepted and also much disputed in medical circles well into the 19<sup>th</sup> century. Especially so, when the essence of Animal Magnetism as distinct from mineral magnetism or electricity was lacking a plausible physical explanation. We shall not go into detail on the often venomous debates that took place especially in British medical circles in the early decades of the 19<sup>th</sup> century, when Mesmerism had become famous in Britain. We may note, however, that by 1843 the dispute on Mesmerism had become so heated among the British medical establishment, that the supporters of Mesmerism saw fit to launch a journal of their own, *The Zoist*, to publish studies in the field. In the first issue of their journal the editors were convinced that “The science of Mesmerism is a new physiological truth of incalculable value and importance”<sup>179</sup> while in the decennial issue of the Journal in 1853 the Editorial declared that

“Our work is the most important, though not the most able, work of the age. For it conducts mankind into a new region of physiology, a new region of psychology, and a new region of the healing art. Animated nature transcends the inanimate: cerebral physiology transcends the physiology of all the rest of the body; and medicine, comprehending the good formation and training of the whole human being, and the prevention, cure, and assuaging of disease and suffering, transcends all other arts, however noble, and whatever talent and labour their successful cultivation may require.”<sup>180</sup>

In this editorial we encounter the idea of bringing together a “new region of physiology” and a “new region of psychology” to develop a “new region of healing art”. We also see, how cerebral physiology is able to have a command of the workings of the body both in health and illness. However, the opponents of Mesmerism were not so enthusiastic. For example, a few years prior to the editorial above, an American physician Herbert Mayo wrote, referring to phenomena Mesmer and his followers had produced in their practice, that

“...regarding it from our present vantage ground, it presents no marvellous characters. The phenomena were the same which we have been recently contemplating – a group of disorders of the nervous system. The causes which were present are not less familiar to us, not their capability of producing such effect; they were – mental excitement, here consisting in raised expectation and fear; the contagiousness of hysteria, convulsions, and trance, its force increased by the numbers and close-packing of the patients.”<sup>181</sup>

What the editorial of the *Zoist* addressed as cerebral physiology (itself taken to be the dominating influence over those bodily phenomena that were supposedly produced by ‘animal magnetism’ in therapeutic sessions) was regarded instead by Mayo, a “group of disorders of the nervous system” for whom any remaining influences could be explained by hysteric group reactions. It was evident to the critics that the conceptual apparatus offered by Mesmer and his followers was not satisfactory, since no one had been able to demonstrate the existence of any such physical entity as animal magnetism or magnetic fluid to explain the phenomena observed in their patients. Yet, the patients’ reactions during treatment sessions were there for anyone to see with their own eyes. Obviously new conceptual openings were needed.

In 1843 a British surgeon, James Braid (1795-1860), presented a critical inquiry into Mesmerism in a book titled *Neurypnology, or the Rationale of Nervous Sleep, Considered in Relation with Animal Magnetism*.<sup>182</sup> In his book Braid suggested a new concept *Neurypnology* to address the phenomena previously referred to by the concept Animal Magnetism. Braid derived his concept from the Greek words *neuron* (nerve), *hypnos* (sleep) and *logos* (discourse). He defined neurypnology as a study of “a peculiar condition of the nervous system, into which it can be thrown by artificial contrivance...induced by a fixed and abstracted attention of the mental and visual eye, on the one object, not of an exciting nature.” From neurypnology Braid derived the term Neuro-Hypnotism to denote the activity to induce the condition. For the sake of brevity Braid suggested the term Hypnotism that is to be understood as nervous sleep.<sup>183</sup> He wrote how he had with his new conceptualisation

“...now entirely separated Hypnotism from Animal Magnetism. I consider it to be a merely simple, speedy, and certain mode of throwing the nervous system into a new condition, which may be rendered eminently available in the cure of certain disorders.”<sup>184</sup>

While the word hypnosis was offered as a new medical concept, it was rapidly deployed as a common notion used in public stage shows both in the USA and Europe where volunteers were hypnotized to perform awkward activities. Everyone attending those events could testify with their own eyes how strong and often strange reactions could be caused to the body with mere words and gestures. But apart from the amusement, the phenomenon also had scientific interest. There was a genuine call for an understanding of the hypnotic process, a call which boosted the adoption of the developing new discipline of psychology into medicine as the editorial in *Zoist* had proposed. For example, in 1866 an American physician, Wright, wrote in his book *A Treatise on Medical Psychology or The Influence of the Mind over the Health of the Body*, referring to the public presentation of hypnosis, how we may

“...appreciate the influence of the mind over the body. This being a new science, the author cannot more than approximate to completion. Scientifically considered, Psychology is the science of all sciences, for without mind there is no science. Any influence operating so powerfully over the health of the body as does the mind must at once become a proper object of study.”<sup>185</sup>

Wright concludes by stating that the best medical minds of his era have agreed that psychology is essential in considering the patients' ailments and treatments.<sup>186</sup>

Another American physician, John Gray, wrote in *the American Journal on Insanity* in 1868 that "The reciprocal influence of body and mind is a fact constantly before the physician". For Gray, bodily ailments have mental consequences since "through the emotions we have all those ephemeral disturbances denominated passions, and with the subsidence of the cause, reason reasserts itself." According to the author psychological medicine should thus be advanced to foster the development of medicine as a whole and include the study of mental disturbances in its all variety as a part of medicine.<sup>187</sup>

A British physician, Daniel Tuke, also supported the idea of adopting psychology as a part of medicine in his treatise *Illustrations of the Influence of the Mind upon the Body in Health and Disease* published in 1872:

"The medical reader who, I hope, may be induced to employ Psycho-Therapeutics in a more methodical way than heretofore, and thus copy nature in those interesting instances, occasionally occurring, of sudden recovery from the spontaneous action of some powerful moral cause, by employing the same force designedly, instead of leaving it to mere chance. The force is there, acting irregularly and capriciously. The question is whether it cannot be applied and guided with skill and wisdom by the physician. Again and again we exclaim, when some new nostrum, powerless in itself, effects a cure, 'It's only the Imagination'. We attribute to this remarkable mental influence a power which ordinary medicines have failed to exert, and yet are content, with a shrug of the shoulders, to dismiss the circumstance from our further thought. I want medical men who are in active practice to utilise this force, to yoke it to the car of the Son of Apollo, and rescuing it from the eccentric orbits of quackery, force it to tread, with measured step, the orderly path of legitimate medicine."<sup>188</sup>

While Tuke's text sounds familiar to us even today, the word psychosomatic does not appear anywhere in his book and it took another sixty years for the concept to develop and find its way into medical theory.

## Chapter 5 - Psychosomatic, a concept

Having now outlined some central developments in medical theory in regard to the mind-body problem, let us examine next in what sense the editorial of the first issue of the Journal portrayed the concept psychosomatic as being new. As the theoretical approach adopted in this essay suggests, to understand the meaning of a scientific concept we need to understand its relations to a larger system of concepts constituting the theoretical framework of that particular area of scientific inquiry. This can be discerned from the way concepts are used in scientific articles and books. However, what is published is an end product, a refined form of a concept as used in its accepted form after having gone through rigorous referee procedure. To examine merely the end product hides the formative progress from an idea to a generally accepted scientific concept. Therefore, in what follows, I will trace the formation of the term psychosomatic into a scientific medical concept not only by analysing its use in print but also by considering the theoretical discussions that led to the introduction of that particular concept into medical theory.

Let us start by examining an unpublished memorandum written in December 1937, a year before the publication of the first issue of the Journal *Psychosomatic Medicine*. The memorandum was written by the would-be Editor of the Journal, Dr Dunbar, and sent to Adolf Meyer, the proponent of psychobiology, who by then had become one of the most influential figures in american psychiatry. I will quote the memorandum in full as a basis for what follows.

December 24<sup>th</sup>, 1937

Memorandum to Dr. Meyer

Dear Dr. Meyer

“This memorandum is by way of confirmation our conference and recent telephone conversations. Considerations have arisen which make it seem more that ever desirable to have a section or column in the [Psychiatric] Quarterly dealing specifically with what is coming to be called Psychosomatic Medicine.

As Analysts we are drawn into this field inevitably because no patient completes an analysis without developing some symptoms in the somatic sphere; often these are puzzling and serious. More than this, general physicians are beginning to discover that psychoanalysis may be of both diagnostic and therapeutic aid in dealing with patients with actual somatic disorders. Some of us are especially interested in the psychosomatic problems from the point of view of research, both because of its importance to medicine today and because it represents a meeting ground with general physicians and representatives of the other medical specialties where we are constantly called upon to answer vital questions. For all its importance, however, this is a field where it is very difficult to be well informed because literature of basic is so widely scattered throughout general and special periodicals, and to make matters worse, inadequately cross-listed in the CUMULATIVE INDEX MEDICUS.

At present I am in touch with several groups of physicians interested in this problem on whom we could depend for bibliographical references, book reviews, abstracts, and even clinical case reports should these seem to be desirable. There has been discussion of inaugurating a section dealing with such material in an American and an English journal devoted to general medicine. It occurred to me that it might be highly desirable before this is done for the Quarterly to take the lead. Such a measure would probably be helpful in terms of subscriptions, but more important in the opportunity it would give us for real leadership in a field where there is much confusion, some of it resulting from failure to recognize the fact that psychoanalysis is an indispensable tool. General medicine and physiology for example, are demanding help with the psychic aspect of this problem of a more scientific nature than general psychiatry can offer. These points I think, represent the gist of our discussion, although if requested I could say more on the subject.”<sup>189</sup>

There are three keys to be found in this concise summary of the theoretical bafflement in medicine in relation to the mind-body issue in the late 1930s. First, the initiative for establishing a special field of medical research, psychosomatic medicine, came from psychoanalysts and their need to comprehend the physical manifestations of their patients' problems as observed during the analysis. Second, it was well known then, as it is today, that general practitioners encounter a variety of psychic problems in their patients with somatic illnesses and there is a need to understand the relationship of these phenomena. Third, although there was extensive scientific activity addressing the mind-body issue in medicine at the time, it was scattered to the extent that there was even no proper terminology available to have them organised in a coherent manner in the Cumulative Index Medicus. Dunbar concludes that the time was ripe to take real leadership in the field and to bring order to this line of inquiry, especially

because there was now an “indispensable tool” available for research, that is, psychoanalysis.

Dunbar’s explicit quest was, thus, to introduce and apply psychoanalysis as a tool to comprehend the interplay of psychological and somatic phenomena in patients. To understand the theoretical developments leading to Dunbar’s initiative, we need first to follow how psychoanalytic theory found its way into general medicine. To accomplish this, let us begin with examining the contribution of Dr Felix Deutsch, a Viennese internist and a family friend of Sigmund Freud.

### **“Indispensable tool”**

Felix Deutsch (1884-1964) was an internist by training and, according to his biographers, he came to know the Freud family through Freud’s son, Martin. He developed a close relationship with Freud senior to the extent that he came to be Freud’s personal physician.<sup>190</sup> (Jones mentions him to be as the one who realised that Freud had developed cancer in his oral mucosa, leading to years of suffering through repeated and agonising operations to control the disease.)<sup>191</sup>

Deutsch developed an interest in psychoanalysis and had himself analysed. He then took on the task of expanding Freud’s theory of conversion hysteria from psychiatry to patients who were suffering from various somatic diseases as encountered in internal medical wards. Deutsch presented his ideas in a paper he read at the *Seventh International Psychoanalytic Congress* in Berlin in 1922. The paper was developed to an article and published in the *Internationale Zeitschrift für Psychoanalyse* in 1924.<sup>192</sup> (The article was translated into English and published in 1959 in a book edited by Deutsch.<sup>193</sup>) The argumentation in Deutsch’s 1924 article can be summarised as follows.

Deutsch justifies the adaptation and broadening of the meaning of Freud’s concept conversion from hysteric patients to somatic diseases by noting that similar transformatory processes from psychic to bodily phenomena can be also observed on patients in medical wards with illnesses that have been commonly considered to be

purely somatic. Deutsch then proceeds to explain the process of conversion with physiological concepts. He describes how our bodily reactions are embedded in subcellular phenomena where the chemical compounds of a cell constitute the basis for the reactions of the organism. Whatever happens to the organism, it stores the memory of these events into what Deutsch calls the functional memory of a cell or of an organ system. This memory may be activated in the future and guides bodily reactions accordingly. Endocrine factors influence the chemical process in the organism altering cell activity. Mental processes, in turn, may influence the hormonal activity of the endocrine glands governing the metabolic processes. This may lead to hypo- or hyperactivity of cells. Now that cells have retained the memory of previous experiences, each time the memory of an experience is evoked, it will affect the activity of the cell system.

Deutsch asserts that a continuous conversion process is necessary in a normal individual for the maintenance of health and well-being and to adjust the individual's instinctual drives to the demands of the culture in which s/he lives. The conversion symptom originates when the memory of a cell system or of a whole organism reacts in a deviant form to certain stimuli as a consequence of a previous traumatic experience. A conversion symptom does not, however, appear suddenly but as a result of gradual and long-lasting psychic processes. It occurs only when, as Deutsch expresses it, "well-defined psychic components coincide most suitably with an organic disorder. The relationship between psychic and organic determinants is interlinked, similar to that of two communicating tubes. If the level in one goes down, it goes up in the other."

Deutsch introduces two more psychoanalytic concepts, libido and unconscious, into somatic medicine when he expands the concept conversion to cover everyday symptoms such as blushing, excessive perspiration, spells of diarrhoea and attacks of migraine. They all occur, however, only "as discharges of pent-up libido and of the emotional debris which through its accumulation burdens the unconscious. The concept of conversion has to be broadened to encompass such reactive patterns."

For Deutsch the temporal coincidence of psychic and physical manifestations develops from the identity of these processes. Therefore, the concept of a

psychophysical parallelism must be rejected since, as Deutsch writes, “nothing parallel occurs here”. Deutsch concludes that “perhaps with the exception of the infectious diseases or bodily injuries through accidents, all illnesses are subject to the principle of psychophysiological determination.”

It is noteworthy that Deutsch did not use the term psychosomatic anywhere in this paper. Yet his article is one of the first systematic attempts to introduce psychoanalytic concepts into the diagnosis and treatment of general medical patients treated in a regular clinic for internal medicine. As we already saw with Oswald Schwarz’s compendium published in 1925, there was widespread interest on psychogenesis and the psychotherapeutic approach to bodily symptoms at the time Deutsch wrote his paper. This interest had been boosted with the development of psychological theories such as Pavlov’s theory of conditioned reflexes and also with the experiences in the battlefields of the World War I denoted as shell shock and psychogenic blindness. Psychoanalytic concepts encountered, therefore, a fertile ground to address this field of interest. However, as Schwarz (1922) shows, in the early 1920s terms such as Psychoanalyse and Ödipuskomplex could be read in medical articles of the time, while terms such as Conversion or Unbewusstsein (unconscious) had not as yet found their way into general medical papers.

In 1928 Deutsch deepened his approach in another article *Die Stellung der Psychoanalyse in der internen Klinik* (The Place of Psychoanalysis in the Internal Medicine Clinic) published in *Medizinische Klinik*.<sup>194</sup> In this paper Deutsch did not introduce any new conceptual openings but discussed his approach in relation to some well-defined somatic illnesses such as asthma. Some authors consider this paper groundbreaking in the development of psychosomatic medicine because Deutsch used in his article the term psychosomatic. He did, however, use the term only once in the form psychosomatischen Bindungen (psychosomatic bonds) when referring to the relation between mind and body in illness without giving any deeper theoretical definition or position for the term.

Since Deutsch builds his approach firmly on Freud’s concept conversion and that concept will have a central position in the theoretical developments in the late 1930s

onwards in what will be called psychosomatic medicine, a closer look at the sense in which Freud himself used the concept and for what purposes is appropriate.

### **Conversion**

The details of Freud's (1856-1939) career are less relevant here except for a brief mention of the often-told story that, after receiving a medical degree in Vienna in 1881, Freud developed a special interest in neuropathology and was considering a future in adolescent neurology. In 1885 he obtained a grant from the University of Vienna to go to Paris to improve his skills and understanding in neuropathological laboratory techniques. The laboratory in Salpêtrière proved a disappointment for the aspiring young Doctor Freud. However, during his stay he attended Professor Charcot's weekly clinical demonstrations with hysterical patients and this experience turned Freud's interest for the rest of his life from neuropathology to psychopathology. As he wrote in his Paris Report for the University of Vienna, the laboratory had failed his expectations, but the Salpêtrière

“provided such a plethora of new and interesting material that it needed all my efforts to profit from the instruction which this favourable opportunity afforded...I had an opportunity of seeing a long series of patients, of examining them myself and hearing Charcot's opinion on them...”<sup>195</sup>

Freud seemed to be genuinely astonished when witnessing hypnotic phenomena during Charcot's demonstrations: “...it was quite impossible to doubt, but which were nevertheless strange enough not to be believed unless they were experienced at first hand.”<sup>196</sup> Freud notes how Charcot did not show any preference for rare and strange material to exploit them for any mystical purposes but regarded hypnotism merely as a field of phenomena to be submitted to scientific description in the same manner as multiple sclerosis or progressive muscular atrophy.<sup>197</sup>

In his Report Freud quotes Charcot, who had proclaimed that “the work of anatomy was finished and the theory of the organic diseases of the nervous system might be said to be complete: what had next to be dealt with was the neuroses.”<sup>198</sup> By the time Freud visited Salpêtrière Charcot had already made a great effort to distinguish and

define hysteria as a clinical entity in its own right with a number of characteristic somatic signs such as anaesthesia, disturbances of vision, distorted movements of the limbs etc.

One of the main conclusions for Freud was, according to his Report, the “enormous practical importance of male hysteria”<sup>199</sup> and particularly of the hysteria which follows upon trauma. Freud writes how through the works of Charcot “hysteria was lifted out of the chaos of the neuroses, was differentiated from other conditions with a similar appearance, and was provided with symptomatology which, though sufficiently multifarious, nevertheless makes it impossible any longer to doubt the rule of law and order.”<sup>200</sup>

Soon after returning to Vienna, Freud translated Charcot’s book *Lecons sur les maladies du systeme nerveux* into German under the title *Neue Vorstellungen über die Krankheiten des Nervensystemen insbesondere über Hysterie* (New Lectures on the Diseases of the Nervous System, particularly on Hysteria, published in Leipzig and Vienna in 1886). Freud writes in the Preface how, after he had overcome his “initial bewilderment at the findings of Charcot’s new investigations” and “learnt to appreciate their great importance”, he had asked Charcot’s permission to translate his lectures to introduce “the teachings of a master of clinical medicine to wider medical circles”. For Freud the core of Charcot’s book “lies in the masterly and fundamental lectures on hysteria, which, along with their author, we may expect to open a new epoch in the estimation of this little known and, instead, much maligned neurosis.” Freud writes, that this was the reason he added (with Charcot’s permission) the term hysteria to the original French title of the book.<sup>201</sup>

On October 15, 1886, some six months after Freud’s return from Paris, he presented a paper before the *Wiener Gesellschaft der Aerzte* (The Vienna Society of Medicine) with the title *Über männliche Hysteria* (On Male Hysteria).<sup>202</sup> Freud discussed a case of a 29 year old man with no previous history of nervous or mental disorder. The man had been attacked by his brother with a knife over a debt the brother had refused to pay. He had escaped unhurt but developed, during the months to follow, a cluster of somatic symptoms such as palpitations, ringing in the ears, numbness of the left arm, clumsiness in walking etc. Freud then described his findings from a thorough

neurological examination and argued that since the symptoms were not anatomically and functionally constant, they were to be understood, therefore, as a case of hysteria. It is noteworthy, however, that Freud did not make any references to possible underlying psychological mechanisms except that of a psychic trauma caused by the attack. Instead, he approached his patient as a neurologist dealing with a case of hysteria as understood through Charcot's writings.<sup>203</sup>

In 1887 Freud published two short reviews on the literature on neurasthenia. (The concept neurasthenia is commonly attributed to an American surgeon, Georg Beard, in 1869<sup>204</sup> although the term can be found in medical discussions predating Beard in the form neurosthenia<sup>205</sup>.) The rationale in Beard's conceptualisation rested partly on the idea suggested by a Scottish physician, John Brown (1735-1788), who divided illnesses into sthenic and asthenic, an idea that developed into what was to be called Brunonian medicine and was widely discussed in medical periodicals and textbooks in the early 19<sup>th</sup> century.<sup>206</sup> Beard also drew on the rapidly developing field of neurology, where the studies focused on electrical phenomena in nerves based on Galvani's works and called animal galvanism in the late 18<sup>th</sup> century and which subsequently developed into medical galvanism in the early 19<sup>th</sup> century. Beard's idea, as cast into the concept neurasthenia, was that in the case of a patient's exhaustion, other causes being eliminated, his or her nervous energy was lost due to overstrain. The new concept was readily adopted into the medical vocabulary and Freud considered it to be the commonest of all diseases in the society of his time. Since it also complicates all other diseases, neurasthenia deserved, in Freud's opinion, "the most general attention on the part of the physicians who are working scientifically".<sup>207</sup> In the second review Freud evaluated the German translation of Silas Weir Mitchell's book on the method of treatment for neurasthenia, which consisted of bed rest, isolation, feeding-up, massage and electricity. Since the method follows, quite logically, the idea of the loss of nervous (electrical) energy in need of recharging, Freud concluded that with this book a consistent therapeutic measure was introduced into German medicine to treat the condition.<sup>208</sup>

In 1888 Freud wrote an entry on hysteria for Villaret's *Händwörterbuch der gesamten Medizin* (Handbook of Medicine) published in two parts in 1888 and 1891 respectively. In this paper Freud still closely follows Charcot's approach but the

cathartic method adopted by Freud's close associate Breuer is discussed. In the opening paragraph Freud defines hysteria as

“...a neurosis in the strictest sense of the word – that is to say, not only have no perceptible changes in the nervous system been found in this illness, but it is not to be expected that any refinement of anatomical techniques would reveal any such changes. Hysteria is based wholly and entirely on physiological modifications of the nervous system and its essence should be expressed in a formula that took account of the conditions of excitability in the different parts of the nervous system. A physio-pathological formula of this kind has not yet, however, been discovered; we must be content meanwhile to define the neurosis in a purely nosographic fashion by the totality of symptoms occurring in it, the same sort of way as Graves' disease is characterised by a group of symptoms – exophthalmus, struma, tremor, acceleration of the pulse and physical change – without any consideration of the closer connection between these phenomena.”<sup>209</sup>

Freud then discussed the conceptual problems in the medical literature of his time where hysteria was grouped among other ill-defined neurotic conditions. He maintains, relying again on Charcot, that hysteria is an illness in its own right with its characteristic nosology. Hysteria can be well differentiated e.g. from neurasthenia and it is, in fact, contrary to it. (Neurasthenics tend to be lethargic due the lack of nervous energy while hysterics are often over-excited). Freud listed the typical symptoms of hysteria in detail, such as convulsive attacks, the presence of hysterogenic zones, disturbances of sensibility, disturbances of sensory activity, paralyses and contractures.

It is noteworthy, however, that in this paper Freud saw hysteria as “a constitutional anomaly rather than a circumscribed illness”<sup>210</sup>. The first signs of the condition are already exhibited in early youth as a rule and the course and manifestations of hysteria follow certain stages and phases of life with somatic manifestations in the foreground. In a number of cases, however, the hysteria is merely a symptom of a deep-seated degeneracy of the nervous system, which is manifest in permanent moral perversion.

For the treatment of hysteria Freud proposed another method, used by Breuer, where the patient is led back to the prehistory of his or her symptoms by hypnosis to reveal

and acknowledge the psychological occasion on which the disorder originated. Freud noted, however, that it was not at the present possible to know with certainty how far psychological influence plays a part alongside physical treatments. Freud summarised, that “anything that alters the distribution of the excitations in the nervous system may cure hysterical disorders: such effects are in part of a physical and in part of a directly psychological nature.”<sup>211</sup>

At this stage Freud had, thus, come to the firm conclusion that hysteria needed to be approached as an entity in its own right and separated from other neuroses. The following years Freud was occupied with applying hypnosis as a treatment method but he eventually abandoned it for not reaching the therapeutic successes he had hoped for. Meanwhile he was facing the fundamental theoretical problem of the relation of man’s mental phenomena to the nervous system. Freud had started off as a neuropathologist, but when entering into the problematics of neurotic phenomena he soon realised that there were no clinical correlatives to be found between the somatic symptoms of neurotic patients and the anatomy and physiology of their nervous systems. While a physiological explanation, as yet undiscovered, was plausible, how did psychological problems actually transfer to somatic symptoms via the nervous system? No current neuropsychological theory was able to satisfactorily explain these phenomena. Freud, then, took the task of delving into theoretical issues to explain hysteric phenomena together with his long-time friend and colleague Joseph Breuer. Their basic theoretical formulations were first presented in an article *Über den Psychischen Mechanismus Hysterischer Phänomene (Vorläufige Mitteilung)* (On the Psychological Mechanism of Hysterical Phenomena: Preliminary Communication), published in Vienna in 1893. The paper was eventually developed into a book *Studien über Hysterie* (Studies in Hysteria) published in 1895.

Breuer and Freud start their *Preliminary Communication* by noting, how

“A chance observation has led us, over number of years, to investigate a great variety of different forms and symptoms of hysteria, with a view to discovering their precipitating cause – the event, which provoked the first occurrence, often many years earlier, of the phenomenon in question. In the great majority of cases it is not possible to establish the point of origin by a simple interrogation of the patient, however thoroughly it may be carried out.

This is in part because what is in question is often some experience which the patient dislikes discussing; but principally because he is genuinely unable to recollect it and often has no suspicion of the causal connection between the precipitating event and the pathological phenomenon.”<sup>212</sup>

They continue by observing how the precipitating event is easily discerned in cases of ‘traumatic’ hysteria, where what provokes the symptoms is an accident:

“In traumatic neuroses the operative cause of the illness is not the trifling physical injury but the affect of fright – the psychical trauma...Any experience which calls up distressing affects – such as those of fright, anxiety, shame or physical pain – may operate as trauma of this kind; and whether it in fact does so depends naturally enough on the susceptibility of the person affected.”<sup>213</sup>

In other cases the connection is not so straightforward. It may consist only in what the authors chose to call a symbolic relation between the precipitating cause and the pathological phenomenon. For example, neuralgia may follow upon mental pain, and vomiting may be caused by a feeling of moral disgust.<sup>214</sup> Yet, the causal relation between the psychical trauma and the hysterical phenomenon is not that the trauma merely acts like an “agent provocateur” in releasing the symptom. Rather, the psychical trauma, or more precisely the memory of the trauma, acts “like a foreign body which long after its entry must continue to be regarded as an agent that is still at work”. The authors concluded that the determining process continues to operate in one way or another for years – not indirectly, through a chain of intermediate causal links, but as a directly releasing cause – “just as a psychical pain that is remembered in waking consciousness still provokes a lachrymal secretion long after the event.” It follows, as the authors put it, that “hysterics suffer mainly from reminiscences”.<sup>215</sup>

As for the therapeutic measures the authors write, relating to their clinical experience, that while treating their patients each individual hysterical symptom immediately and permanently disappeared when they had succeeded in bringing to light “the memory of the event by which it was provoked and in arousing its accompanying affect, and when the patient had described that event in the greatest possible detail and had put the affect into words. Recollection without affect almost invariably produces no results.”<sup>216</sup>

In a footnote the authors acknowledge that a therapeutic procedure of this kind had been recognized before their attempt by various authors such as Delboeuf in 1889 and Binet in 1892. They also refer to Janet's study of 1889, where there is an account of the cure of a hysterical girl by a method similar to that used by Breuer and Freud.<sup>217</sup> But apart from their clinical observations and theoretical formulations a question remained: why do events experienced long ago still provoke physical symptoms? Why do painful memories not just fade away? The authors reasoned that an event provokes an affect (an emotion). An affect needs to be discharged, be that by tears, action etc. If the reaction to the affect is adequate, it exercises a cathartic effect. Language may serve as a substitute for action. Therefore, with the help of language an affect can be abreacted as by lamenting or e.g. by confessing a tormenting secret. If there is no such opportunity, whether in deeds or words or even tears, any recollection of the event retains its affective tone.<sup>218</sup>

The *Preliminary Communication* does not, however, dig any deeper to reveal the mediating mechanisms between the suppressed affects and the physical consequences of that suppression. In 1894, a year after the publication of the *Preliminary Communication*, Freud continued to discuss the basic mechanisms behind symptom formation as a result of inhibited traumatic memories in his study *Die Abwehr-Neuropsychosen* (The Neuro-Psychoses of Defence).<sup>219</sup> In this paper Freud introduced two new concepts, defence and conversion, both of which are of fundamental importance for the rest of his emerging theory and also for the development of the concept psychosomatic in medicine decades later. Freud writes how for some of his patients with previously good mental health “*an occurrence of the incompatibility took place in their ideational life*” (Freud's italics).<sup>220</sup> That is, when a person is faced with an idea or an experience that is too difficult to face, s/he suppresses it from his or her consciousness. This suppression Freud chose to call a defence. This process may lead to somatic phenomena since an

“incompatible idea is rendered innocuous by its *sum of excitation* being transformed into something somatic. For this I should like to propose the name of *conversion*.”<sup>221</sup> (italics original)

Freud postulates further, that in mental functions there must be a

“quota of affect or sum of excitation which possesses all the characteristics of a quantity (though we have no means of measuring it), which is capable of increase, diminution, displacement and discharge, and which is spread over the memory-traces of ideas somewhat as an electric charge is spread over the surface of the body... This hypothesis, which, incidentally, already underlies our theory of ‘abreaction’ in our ‘Preliminary Communication’... can be applied in the same sense as physicists apply the hypotheses of a flow of electric fluid. It is provisionally justified by its utility in co-ordinating and explaining a great variety of psychological states.”<sup>222</sup>

In this closing passage of his paper Freud sketches a working hypothesis for understanding hysterical phenomena by drawing analogies with physics with the idea of the flow of electric fluid as an explanation for somatic manifestations in patients with mental problems.

For the next year and a half Freud continued to work intensively to develop this hypothesis further. In April 1895 Freud wrote in a letter to his friend Wilhelm Fliess that he was deeply involved in writing a treatise with no title as yet. (He never published his material; the English title *Project for a Scientific Psychology*<sup>223</sup> was given by Strachey, who made a revised translation of the text, published in London in 1954).

Freud wrote, that his intention was

“to discover what form the theory of psychical functioning will take if a quantitative line of approach, a kind of economics of nervous force, is introduced into it, and, secondly, to extract from psychopathology a yield for normal psychology. It is in fact impossible to form a satisfactory general view of neuro-psychotic disorders unless they can be linked to clear hypotheses upon normal psychical processes.”<sup>224</sup>

Some six months later he wrote in another letter to Fliess that

“...it was possible to see through from the details of the neuroses to the determinants of the consciousness... The three systems of neurone, the free and bound conditions of quantity, the primary and secondary processes, the

main trend and compromise trend of the nervous system, the two biological rules of attention and defence, the indications of quality, reality and thought, the state of the psycho-sexual groups, the sexual determination of repression, and, finally, the determinants of consciousness as a perceptual function – all this fitted together and still fits together.”<sup>225</sup>

Freud’s approach in his *Project* may be summarised by noting that he regarded the “cathectic” processes as material events (nerves loaded and discharged) and he established his idea on two distinct premisses. First was the recent discovery that the nervous system consisted of chains of neurons where the impulses pass from one neuron to another over synapses. The second was the idea that excitation of the neurons was to be regarded as a quantity which is subject to the general laws of motion. By combining these two assumptions Freud arrived at the idea that “a ‘cathected’ neuron is filled with a certain quantity, though at other times it may be empty” and this may serve as a neurological principle through which a hysterical symptom formation may be understood.<sup>226</sup>

Freud has, thus, built his ideas of discharge of drives, the principle of constancy and repression of psychic energy on the images of electrical and hydraulic science prevalent in that era. This phase in Freud’s thinking culminated in two major works, the above-mentioned *Studies in Hysteria* with Josef Breuer and the unfinished *Project for a Scientific Psychology*. In these works Freud theorized that in hysteria disturbing emotions or affects underwent a process he called conversion to a motor or sensory symptom. In hysteria, the body did the talking and feeling so that the individual could forget. Freud had moved, thus, from a simple trauma theory to a theory of defence and conversion that was available to be applied not just to hysteria but also to a wide variety of other symptomatic situations.

To return to Dunbar’s Memorandum we may now conclude that the new in Dunbar’s initiative was, specifically, to introduce Freud’s psychoanalytic theory and concepts described above into general medicine. This process had already started at the beginning of the century when Freud’s theoretical concepts were finding their way beyond psychiatric problems into somatic medicine, for which Deutsch’s works serve as an example. This development culminated in the publication of the first issue of the *Journal Psychosomatic Medicine* in New York in January 1939.

## Birth of a Journal

By the time Deutsch was formulating his ideas Europe was recovering from war and the USA was rapidly taking the leading role in medical science. This development was promoted by wealthy American philanthropists, in particular the Rockefeller Foundation (established in 1913), which sponsored the formation of the infrastructure of modern medical science in the USA in the early decades of the 20<sup>th</sup> century.<sup>227</sup> A crucial part of this process was to finance targeted research projects, which were executed by full-time salaried scientists. While the Foundation's general mission was "to promote the well-being of mankind throughout the world", it laid special emphasis on financing medical research in general and, since the early 1930s, psychiatric research in particular.<sup>228</sup> Pressman has argued that one of the main reasons for the Rockefeller Foundation to promote research with a wide perspective on the human condition was that many of the officers and trustees of the Foundations were deeply religious in the Baptist tradition and were openly sceptical about the power of laboratory science alone to redeem humankind. The science of man could not, thus, rest on reductionist and mechanistic models of natural sciences, but on the holistic study of the entire organism, echoing the Pietist roots of the Baptist movement<sup>229</sup> and its approach to man's well-being as exemplified in Stahl's ideas of medicine discussed in Chapter 4. That is, in order to fulfill its goals, medicine needed to broaden its scientific approach and also to heed the knowledge derived from the social sciences and humanities.<sup>230</sup>

The idea to include psychiatry on the Foundation's medical agenda was brought into the discussion in the mid-1920s when the Foundation's *Annual Report* declared that part of the medical funding should be directed to studying the borders of the fields of biology and psychology as both of these have a bearing on medicine and public health.<sup>231</sup> The Foundation urged its Division of Medical Sciences to work with existing medical school departments of psychiatry and neurology to develop closer relations with natural scientists by use of measurable and precise methods.<sup>232</sup>

One of the first concrete steps in the Foundation's initiative was the decision to support the Institute of Psychiatry in Munich under the direction of Emil Kraepelin, who was considered the world's leading psychiatrist at that time. Kraepelin's overall approach was to examine the structure and function of the psychopathological phenomena and combat mental illness with the methods of natural sciences, an idea compatible with the Foundation's overall objective to combine different scientific approaches for the benefit of mankind.<sup>233</sup> Kraepelin was, however, openly intolerant of the growing influence of Freud's psychoanalytic theories in psychiatry.<sup>234</sup> In the USA, too, tensions between biological and psychoanalytical approaches to psychiatric problems were on the rise toward the end of the 1920s.

A central figure in forming the Foundation's agenda toward reconciling these opposing trends in American psychiatry was Dr Alan Gregg, who had joined the Foundation in 1922 as an assistant to the Division of Medical Education. In the mid-1920s Gregg was stationed in Europe with the special task of examining the present state of medical education in Italy. During his stay he also travelled in German speaking Europe, where he met prominent psychiatrists of the time such as Bleuler in Zurich and Oskar Vogt in Berlin, where clinical psychiatric research was combined with studies of the cellular structure of the brain, neuropathology and physiology. In Berlin Gregg also met with Franz Alexander, who had received an MD from Budapest in 1913 and published studies on brain metabolism before becoming a psychoanalyst. By the time of Gregg's visit, Alexander was already a well-known expert in psychoanalysis frequently visited by many American psychiatrists.<sup>235</sup>

Although Gregg had originally been trained as a serologist and had published studies on hookworm disease in Brazil, he had developed an interest in psychoanalysis when he met Freud personally in 1909 during Freud's visit to the USA. As a consequence, Gregg felt that psychoanalysis could and should be combined with biological studies on psychopathology.<sup>236</sup> Gregg's grand idea was to join psychoanalysis with natural sciences and to promote extensive research programmes based on this amalgamation with the Foundation's financial support.<sup>237</sup>

In 1931 Gregg was appointed Director of the Foundation's Division of Medical Sciences. Within the next couple of years he managed to persuade the Foundation to

support medical research programmes intended to bring together psychoanalytic ideas with physiological research to study the workings of the human mind and body. Although there was great scepticism among the American medical elite toward psychoanalysis, the Foundation agreed upon the programme. This was partly due to support for Gregg's ideas offered by Adolf Meyer, who had promoted already in his 1915 article published in *JAMA Objective psychology or psychobiology with subordination of the medically useless contrast of mental and physical* the importance of "the activity and behaviour of the total organism or individual as opposed to the activity of single detachable organs"<sup>238</sup>. Meyer had suggested that "Psychobiology...forms clearly and simply the missing chapter of ordinary physiology and pathology...functions of the total organism which blend...constituting a special level of integration which has been especially and most characteristically enriched the inter-individual and social development of language".<sup>239</sup> Another prominent supporter of Gregg's project was Stanley Cobb of Harvard, who was the leading American neurologist of the time and who had had himself psychoanalysed to deal with his life-long problem of stuttering.<sup>240</sup> (Part of Gregg's success may also be due to the fact that Max Mason, the President of the Rockefeller Foundation from 1931, had a special interest in psychiatry since his wife had died after a long and severe mental illness.)<sup>241</sup>

In 1933 the Rockefeller Foundation's trustees agreed to promote psychiatric studies according to the ideas put forward by Gregg despite severe financial difficulties due to the Great Depression. Several projects were supported, including topics such as epilepsy, schizophrenia, dynamic psychology, neurophysiology, conditioned reflexes, neuroanatomy and neurosurgery.<sup>242</sup>

Meanwhile, in 1930 Franz Alexander had travelled to America to participate in an International Congress on Mental Hygiene held in Washington. Alexander's attendance led to an invitation to become a visiting professor of psychoanalysis in Chicago. Alexander was eventually appointed director of the newly founded Chicago Institute of Psychoanalysis in 1932. The Institute soon became the leading centre for American psychoanalytic thinking and was first funded by private supporters and, starting from 1936, by the Rockefeller Foundation under Gregg's supervision.<sup>243</sup> The Institute made detailed plans for systematic research into psychological factors in

various somatic problems such as gastrointestinal disorders, respiratory ailments, hypertension, endocrine gland disturbances and skin disorders. These were based to a large extent to Alexander's general idea to amalgamate psychoanalytical and physiological approaches. He suggested a particular neurophysiological pathway, which conveys the psychic stimulus from the cerebral cortex to the midbrain and further to the internal organs via parasympathetic stimulation.<sup>244</sup>

While the Rockefeller Foundation was building its research agenda, another American philanthropic fund, the Josiah Macy, Jr. Foundation, was also preparing to sponsor an integrative medical research programme in 1930 where, as the patroness of the Foundation Mrs Kate Macy Ladd expressed it, health was seen as residing in the "wholesome unity of mind and body".<sup>245</sup> The Foundation set out to fund projects addressing "the interrelations between the psychological and physiological aspects of normal and abnormal bodily functions".<sup>246</sup> A part of this initiative was to conduct a bibliographical survey of the medical literature on the "relation of emotions and bodily changes".<sup>247</sup> This task was assigned to Dr Helen Flanders Dunbar, a polymath with degrees in medieval literature, theology and medicine and who had developed a special interest in the relation between religion and health, an interest widely shared among American theologians and physicians since the beginning of the century.<sup>248</sup>

In the 1920s Dunbar had spent time in Europe preparing her dissertation on Dante. During her travels she learned to know Dr. Felix Deutsch in Vienna. Dunbar developed an interest in psychoanalysis and undertook an analysis with Deutsch's wife Helen, a noted analyst at the time. Dunbar also met with Carl Jung while visiting the famous Burgholzi clinic in Zurich. After returning to the USA Dunbar was appointed in 1931 Director of the Joint Committee on Religion and Health of the Federal Council of Churches and the New York Academy of Medicine, sponsored by the Josiah Macy, Jr. Foundation.<sup>249</sup>

Dunbar's task to build a bibliography of early 20<sup>th</sup> century medical literature dealing with the mind-body issue was accomplished in 1935 when Columbia University Press published her compendium under the title *Emotions and Bodily Changes. A Survey of Literature on Psychosomatic Interrelationships 1910-1933*. The book consisted of more than 400 pages with some 2,000 references to articles and books on the field.<sup>250</sup>

(During the years to follow Dunbar edited and enlarged her book and the fourth edition, published in 1954, consisted of twelve hundred pages with almost five thousand references.<sup>251</sup>)

Dunbar's book was the first systematic attempt at a comprehensive survey of the early 20<sup>th</sup> century English language medical literature on the mind-body problem in medicine. It made Dunbar the leading figure in the field in the USA in the late 1930's and her book became the standard reference and established the use of the concept psychosomatic in the discussions and debates on the ensuing mind-body issue in medicine.

By the time of the publication of Dunbar's book the discussions on establishing a scientific journal on psychosomatic questions with the Macy Foundation's support were already under way.<sup>252</sup> With the Foundation's support Dunbar took on the task of finding and bringing together scientists involved with research programmes related to the mind-body problem in medicine from various fields in the USA.

After a period of intense preparation Dunbar sent a letter of invitation to Dr. Franz Alexander, Dr. Stanley Cobb, Dr. Hallowell Davis and Dr. Walter S. Palmer to attend a luncheon meeting "at the Waldorf-Astoria on Tuesday December 28<sup>th</sup> 1937 at 12:30 o'clock, in a private dining-room engaged in my name".<sup>253</sup>

At the time of the meeting Stanley Cobb was working as Psychiatrist-in-Chief and a professor of neuropathology at the Massachusetts General Hospital, Boston. He was widely regarded as a neurologist but, as he reflected in a letter to Dunbar in July 1938 "...we are people who are broad and able to see the overlaps [in neurology and psychiatry]. Personally...I am not especially enthusiastic about being labelled a mere neurologist."<sup>254</sup> Hallowell Davis was, in turn, a professor of physiology at the Department of Physiology, Harvard Medical School and Walter S. Palmer was working at the Columbia-Presbyterian hospital in New York City.

The idea of establishing a journal devoted to the field had obviously been discussed among the interested parties for some time, as Alexander indicated in his response to

Dunbar's invitation by stating that the meeting would be "the first step toward the realization of our long standing plan".<sup>255</sup> I can present no data on what was discussed during the meeting since I was not able to locate the minutes of this gathering in the Archives (they may be missing altogether) but it is quite clear that the meeting was a success in terms of launching a new journal dedicated to publishing articles "in the field of psychosomatic medicine" as the rationale of the meeting was indicated in the letter of invitation.

Then followed a period of intensive planning and preparing with Dunbar in charge to deal with the practicalities. On April 14<sup>th</sup>, 1938 Dunbar wrote to Dr Miles, the President of the Josiah Macy, Jr. Foundation, to express her gratitude for the support of the Committee to sponsor a journal "devoted to 'Psychosomatic Research'". She also accepted a five-year appointment as associate editor of the journal. After defending the idea of linotype publication, she wrote how

"A journal of this type would reach a most heterogeneous group of readers – internists, psychiatrists, neurologists, and a number of other medical specialists, such as dermatologists, paediatricians, nose and throat men who continuously have to deal with the psychological problems of their field; moreover psychologists and physiologists. If we only count on those individuals who are especially interested in the psychosomatic problems, this alone would represent a considerably large number of readers."<sup>256</sup>

Various titles were suggested for the forthcoming journal in the discussions between Dunbar and the Macy Foundation. Among those were titles such as *Physiology of Emotions*, *Investigative Psychophysiology*, *A Journal of Psychiatry and Medicine*, to mention a few. Eventually the title for the Journal was established as *Psychosomatic Medicine, Experimental and Clinical Studies*. (Published quarterly with the sponsorship of the Committee on Problems of Neurotic Behaviour Division of Anthropology and Psychology. National Research Council, Washington D.C.) The first number appeared in January 1939 with Flanders Dunbar as managing editor. The list of editors consisted of: Franz Alexander, Psychoanalysis; Dana W. Athley, Internal Medicine; Stanley Cobb, Neurology; Hallowell Davis, Physiology; Flanders Dunbar, Psychiatry; Clark L. Hull, Psychology; Howard S. Liddell, Comparative Physiology; Grower F. Powers, Paediatrics; Theodore P. Wolfe, Review Editor.

On the back cover of the first issue, under the title *Purpose*, it was declared that

“The aim of PSYCHOSOMATIC MEDICINE, which has been initiated with the assistance of the Josiah Macy, Jr. Foundation, is to encourage and bring together studies which make a contribution to the understanding of the organism as a whole, in somatic and psychic aspects. These materials are now usually separated widely in manner and place of publication because of differences in concept, approach and methods. The inauguration of this journal will provide a channel for the prompt and inexpensive publication of relevant investigations.”

On the same page, following the title *Scope* we read that

“The investigations published in this journal will deal primarily with phenomena observed concurrently from somatic and psychic angles rather than from either one alone. The scope therefore will include appropriate experimental studies of animal and human behavior, and well-controlled clinical studies of both children and adults. Pertinent examples are: investigation of experimental neuroses, of frustration, of physiological changes accompanying emotion, of vegetative and hormonal disturbances, and of psychiatric aspects of general and specific medical problems.”

The articles in the first number fall into four groups, starting with an overview of the theme *Psychological Aspects of Medicine* by Franz Alexander, followed then by two themes *The Hypothalamus – Review of some Recent Contributions* and *Symposium on Hypertension*. The last part of the first number consisted of *Reviews, Abstracts and Correspondence*. As to the articles, there are titles such as *Hypothalamic Functions in Psychosomatic Interrelations*, *Some Cardiovascular Manifestations of the Experimental Neurosis in Sheep* and *Blood Pressure and Palmar Sweat Responses*. Two articles were explicit in their adherence to the psychoanalytic theory, *Psychoanalytic Study of a Case of Essential Hypertension* and *Blood Pressure and Inhibited Aggressions*. There were two other titles dealing with emotions and bodily reactions: *Hostility in Cases of Essential Hypertension* and *Emotional Factors in Essential Hypertension*.

Seeing this diversity of articles and having the conceptual and methodological problems in the field acknowledged on the back cover of the Journal let us examine

next, how the word psychosomatic was conceptualised by the advocates of psychosomatic medicine. We now have three sources at our disposal at this stage of our inquiry, Dunbar's book, the material published in the first number of the *Journal* and the correspondence between the editors on what submitted articles should be rejected and on what grounds. After all, what is *not* published may also help us to understand the theoretical thinking behind the introduction of the concept psychosomatic into medicine.

### **The concept psychosomatic defined**

Since Dunbar was one of the main advocates in bringing the concept psychosomatic into the medical vocabulary let us see, first, how she justified the choice of the word in her 1935 book.

Dunbar opened the Introduction in the first edition of *Emotions and Bodily Changes* by noting how

“Scientific study of emotion and of the bodily changes that accompany diverse emotional experience marks a new era in medicine. We know now that many physiological processes, which are of profound significance for health, not only of the individual but also of the group, can be controlled by way of emotions. In this knowledge we may have the key to many problems in the prevention and treatment of illness, yet we have scarcely begun to use what we know. We lack perspective concerning our knowledge in this field and are confused on the interrelationship of the psychic, including emotional, and somatic processes in health and disease”

Dunbar gave then an extensive account of the early 20<sup>th</sup> century medical literature addressing the question of the effects of mind on the body. It is noteworthy, that much of this literature was, at the time, written in German and there were problems, as Dunbar noted, in providing precise translations into English language owing to the lack of English equivalents for various German expressions.

Throughout her book Dunbar used the word psychosomatic as a general concept without attempting to give it any precise definition as a scientific concept. It seems

that she was somewhat cautious with the term as a whole since she wrote in the Conclusion that

“...the phrase ‘psychosomatic interrelationships’, conveys an emphasis we are outgrowing; it is inadequate to express the conviction that psyche and soma are not entities which interact but actually two aspects of a fundamental unity. Nevertheless, the phrase ‘psychosomatic interrelationships’ will probably persist in the literature because as yet no other is current which better expresses this unity considered in its psychic and somatic aspects”<sup>257</sup>.

Dunbar justified not offering her own interpretations or definitions for the concepts used by noting, that “it must be borne in mind that this work is essentially a bibliography... a minimum of critical comment has been given”<sup>258</sup>.

Despite the conceptual ambiguity, Dunbar was convinced that this emerging field of research was worth pursuing, since

“...the great bulk of material...demonstrates...that soma can be influenced through psyche in ways increasingly subject to our control, and that appropriate application of such techniques as suggestion, hypnosis, and of psychoanalysis is of fundamental therapeutic significance – in the prevention of disease; in the early diagnosis and treatment of disease; in the cure of certain diseases where the physiological changes involved are reversible by this means; and as an adjuvant ... where serious structural changes have taken place, even in fatal illness itself.”<sup>259</sup>

Dunbar perceived that the basic theoretical problem in medicine resided in dualism in medical thinking. This dualism needed, in her opinion, to be resolved in order to be able to develop methodology to address the essential unity of a person:

“...the change from emphasis on a psychosomatic dichotomy to recognition of an underlying unity with the simultaneous reflection of the struggle to develop research methods directed toward this unity, our research methods thus far having been developed particularly for the handling of fragments... Why this is so and how - that is, just what psychophysiological mechanisms are involved - is not yet clear; and the majority of formulations are guesses unsupported by facts or developed on the basis of a few facts, and by way of often questionable methodology.”<sup>260</sup>

For Dunbar, the psychosomatic approach leads, eventually, to fundamental questions in medical theory, as she concluded her book:

“At the outset, the field of psychosomatic interrelationships was presented as a borderline problem between the specialties. It has been pointed out, however, that this is much more than a borderline problem: it is the kernel and focus of all medical knowledge and practice”.<sup>261</sup>

In the first edition of her book Dunbar perceived psychoanalysis as a therapeutic tool among other tools such as suggestion and hypnosis. Two years later, in the Memorandum to Meyer discussed earlier, she was explicit that the concept psychosomatic medicine denotes the integration of psychoanalysis to general medicine.

According to the correspondence I was able to retrieve from the Archive, Dunbar did not make any further efforts whatsoever to address the theoretical or conceptual problems in psychosomatic medicine during the preparatory phase of the Journal in 1938. Instead, she stood firm in her role of an editor concerning herself mainly with practical issues such as the intended size of the Journal, the quality of the paper, typesetting, layout and so forth. At that stage of development the conceptual worries seemed to fall on Alexander, who wrote in a letter to Dunbar in August 1938 that

“If we want to reach both groups – the medico-somatic as well as the psychiatric psychological – our articles cannot be written in the slang of either one. We cope here with a difficulty no other journal has to cope with – namely, that we deal with a much more heterogeneous group of readers than any other scientific journal. Since one of our main purposes is to introduce into medical circles psychiatric interest, we must bear in mind above all that most physicians do not understand our psychiatric or psychoanalytical slang. Neither are they familiar with our fundamental concepts. The editing of our contributions therefore will become an issue of vital importance.”<sup>262</sup>

When the publication of the first issue of the Journal was approaching Alexander's concerns were rising as he confided in another letter to Dunbar in October 1938:

“I must confess that with the publication of the first issue approaching I am having stage fright. I realise more and more how much this journal will be in

the limelight and will be scrutinized most critically by psychiatrists, psychoanalysts as well as by organicists. Therefore, the editors have to face an extremely difficult job and must be double careful to do good editorial job both in the selection of the articles, the style, and general attitude.”<sup>263</sup>

An apparent consensus on the aim of the Journal was eventually found among the editors, however. The Introductory Statement<sup>264</sup>, opening the first issue and signed The Editors, summarised the general rationale of the Journal: “Briefly, psychosomatic medicine concerns itself with the psychological aspects of medicine”.

The concept psychosomatic medicine was first further defined through negation:

“Psychosomatic Medicine is not equivalent with what is understood by the term ‘psychiatry’”.

And then:

“While psychiatry’s principal interest is “the diseased mind”, the subject matter for psychosomatic medicine is to study the relationship between “psychological and physiological aspects of all normal and abnormal bodily functions and thus to integrate somatic therapy and psychotherapy”.

The need and justification for this integration arose, for the editors, from the fact that there was “intensive and active work of this type going on in this and other countries” and that the medical profession had “awakened to the necessity to studying systematically what is commonly referred to as the ‘art of medicine’”.<sup>265</sup> In short, the Journal’s aim was to “promote unity and progress in the rapidly expanding field”.<sup>266</sup>

The Introductory Statement did not, however, address the conceptual problems in their approach any further. Instead, the editors dissociated themselves from theoretical issues by stating that the Journal was not “concerned with the metaphysics of the mind-body problem. Emphasis is put on the thesis “that there is no logical distinction between ‘mind and body’, mental and physical”. Furthermore, the editors wrote that “the division of medical disciplines into physiology, neurology, internal medicine, psychiatry and psychology may be convenient for academic administration, but biologically and philosophically these divisions have no validity”.<sup>267</sup> The aim of the

editors was to “adhere to a unitary conception of medicine as an experimental science, to bring scientific precision into the ‘art’”.<sup>268</sup>

After the Introductory Statement there followed a review article by Franz Alexander entitled *Psychological Aspects of Medicine*, offering a broad theoretical account on what would follow. Alexander started his paper with an historical overview of the development of medicine to the conception of disease seated in cellular pathology, where disturbances of functional problems in the human body are seen as a consequence of structural changes in tissues and organs. Alexander claimed that there had been little room in this approach to any psychological analysis of patients’ problems beyond mere classification of mental symptoms into psychiatric disease categories as presented by Kraepelin. This was partly owing to the lack of proper instruments to penetrate man’s mind. Freud’s psychoanalysis had, however, changed the situation by offering a “psychological microscope” to study the structure and function of mental life and to correlate the findings to those revealed with optic microscopes and physiological measurements. Alexander wrote:

“Our body, this complicated machine, carries out most complex and refined motor activity, under the influence of such psychological phenomena as ideas and wishes... The originating psychological situations can only be understood in terms of psychology, as total responses of the organism to its environment.”<sup>269</sup>

Alexander expressed, however, some reservations concerning the conceptual basis of the Journal’s general approach. For him the notion psychosomatic medicine was “not most fortunate because it may imply a dichotomy between psyche and body (soma).” Alexander attempted to overcome this dichotomy by stating that if “we understand psychic phenomena as nothing but the subjective aspect of certain bodily (brain) processes this dichotomy disappears”.<sup>270</sup> While this statement entailed significant ontological assumptions as also did the editor’s claim that “there is no logical distinction between ‘mind and body’”, Alexander did not pursue the issue any further. Because of their theoretical importance, I shall return to these statements later.

Alexander asserted that the psychosomatic approach based on psychoanalysis did have a fundamental meaning for medical theory in terms of aetiological thinking. Following Freud's idea of conversion it was apparent, for Alexander, that functional changes, such as repressed emotions, can lead to structural changes in the cellular level such as damage in the gastric mucosa. This idea reversed the conception prevalent in then current medical thinking where functional disturbances were seen as resulting from structural changes in the body. Alexander assumed that there may even be specific relations to be found between certain types of emotions and particular organic structures (echoing the idea that was present already in the Hippocratic treatises and repeated in St. Thomas's doctrines, as noted in the above). For example, inhibited rage may be connected to the cardiovascular system, dependence to nutrition, sexual conflicts to the respiratory system and so on.<sup>271</sup> Alexander concluded that this "psychological approach" offers a scientific basis to understanding better patient's symptoms in relation to their emotional life.

The rest of the articles in the first issue of the Journal did not attempt to address the conceptual issues in psychosomatic medicine beyond what is discussed above. Therefore, to shed light on what constitutes the "scientific basis" of the emerging field of psychosomatic medicine, we may next turn to the "the selection of the articles, the style, and general attitude", as Alexander expressed it.

From the correspondence preserved in the Archive we can distinguish three main arguments for the rejection of papers submitted to the editors of the Journal. A few examples may suffice to clarify the issue. I begin with rejection of papers submitted on the grounds of not properly addressing the main theme of the Journal, psychosomatic relationship. (The name of the reviewer is given in parentheses.)

"It does not fit in however in the Psychosomatic Medicine. The psychodynamic background of the organic symptoms of the patient are not discussed at all." (Alexander)<sup>272</sup>

"...he offers the hypothesis that the skin symptom is the manifestation of the patient's guilt feelings...Neither the skin symptoms nor the psychological condition of the patient are adequately described...The psychiatric descriptions are even poorer...There is no convincing evidence offered for

the explanation of the skin symptoms from guilt feelings...I suggest unconditional refusal.“ (Alexander)<sup>273</sup>

“I am uncertain about the Rosenberg paper. It is unconvincing to one experienced in hypertension and it is definitely unsophisticated from a medical point of view in several ways. It is a far cry from decreasing the blood pressure following a series of conversations and believing that one has the aetiology of hypertension.” (Atchley)<sup>274</sup>

“Ranson’s paper is a beautiful presentation of the neurophysiology of the mechanism for regulating body temperature in the hypothalamus. It is too good not to publish, although I wondered while reading it whether there is any “psycho” to accompany the “somatic”. It could perfectly well appear in the Journal of neurophysiology...”(Davis)<sup>275</sup>

“...they look on this manuscript as reporting psychosomatics because both the psyche and the soma of the patient were simultaneously attacked. I do not think that their paper brings out anything about the physiology of the emotions or the relationships that we are really interested in.”(Cobb)<sup>276</sup>

Another argument for declining to publish submitted papers in the Journal was based on conceptual obscurity:

“...Schimmenti’s article, “Some Remarks on the Cause of Essential Hypertension and its Prevention by Psychotherapy”... I consider utterly unsuitable for publication for the following reasons: It is a palaver written in somewhat amateurish psychoanalytic and physiological jargon consisting of an undigested mixture of psychoanalytic concepts with some general physiological statements without any reference to literature or independent observations.” (Alexander)<sup>277</sup>

“Many pages of this manuscript are devoted to theoretical discussion written in a difficult style. The concepts and vocabulary are unusual and can only be understood by studying other writings of the author. Without this background for some of the definitions, I believe the discussion is logically meaningless. I therefore believe that it should be recast in familiar current phraseology in order to be acceptable.”(Davis)<sup>278</sup>

Yet another argument for rejecting submitted manuscripts rested on the lack of sufficient empirical data:

“Takat’s paper strikes me as the worst of the lot. It is without supporting data; it accepts the function of the hypothalamus and diencephalon as proven; it talks as if all “sympathectomised” patients were alike. In short, it is not a scientific paper, but a resumé suited to “Time” or “Newsweek”. (Cobb)<sup>279</sup>

“This is a perfectly good theory and in the introduction and discussion the authors show that it offers a plausible explanation for the symptoms. They do not, however, give any evidence at all, and in a scientific paper, the evidence presented is the main point...the patient’s words are not put into the record, and we feel that is just what is needed as data...that is what psychiatry needs – more data and less opinions.” (Cobb)<sup>280</sup> (underlining original)

“Our policy is to publish data of scientific interest with the smallest possible amount of discussion...The part of the paper that would interest me (to be published) is that which presents data...(it has been presented) too briefly and only in generalizations from many cases. It leaves the reader unconvinced both because of paucity of data but because lack of control data. (Cobb)<sup>281</sup>

It seems, according to the material available, that it was specifically Cobb among the editors who was becoming frustrated at the scientific level of many of the manuscripts submitted for publication in the Journal. As he expressed it in a letter to Dunbar in August 1939:

“The whole object in bringing ‘Psychosomatic Medicine’ into existence was (from my point of view) to give authors a chance to present evidence at length and express conclusions that could be checked by the reader. We hope to do this and thus combat the present tendency in psychiatric ‘literature’ to expound without producing evidence.”<sup>282</sup>

Cobb’s worries were taken into serious consideration as revealed in a reply by Dunbar a couple of months later:

“I was very glad to have a copy of your letter...I thought it was splendidly worded and [I] read it at the Meeting of the Board. There was a unanimous feeling that the general statements referring to our policy were so well expressed that they might well be incorporated in our...letter of refusal to authors of general articles that do not prove acceptable.”<sup>283</sup>

We may now conclude, in light of the material presented above, that at the time of the founding of the Journal the concept psychosomatic had developed to a stage where it

was used in two distinct meanings. First, the *new* in this approach was methodological, that is, recombining psychoanalysis with studies on human physiology in order to find correlations between emotional states and bodily phenomena. These studies needed to be based on empirical research. Secondly, the concept was used in an ontological sense to denote the unity of a person to overcome the mind-body dualism in medical thinking. We shall return to these postulations later when exploring the subsequent development of the concept psychosomatic in medicine. But I pause here for a moment to reflect on the material I have presented so far to discuss the question of conceptual development in medicine in general.

## Chapter 6 - On the development of science

During the formative phase of the concept psychosomatic in medicine in the 1930s, the philosophy of science was dominated by logical positivism, where the aim was to construct a set of formal logical methods for scientific inquiry by using the results of scientific research as a point of departure. This approach did not consider the process of scientific research itself as philosophically interesting and it was excluded from the inquiry. This attitude was challenged, among others, by Karl Popper, who suggested that if we are to look upon the theory of knowledge, we should not build it solely on examining the structure of facts obtained by scientific research. Instead, we need to look at the growth of knowledge, that is, how discoveries emerge and solve scientific problems.<sup>284</sup> This criticism gained momentum when Thomas Kuhn published his widely acclaimed treatise *The Structure of Scientific Revolutions* in 1962.<sup>285</sup> Kuhn's idea of the development of science through revolutionary paradigm shifts has been widely debated ever since. But I ask, for the purposes of this essay, whether Kuhn's approach does indeed apply in the development of medicine.

To summarise Kuhn's position, a scientific discipline, such as physics, holds certain basic assumptions about its object of inquiry as given and scientific work consists of applying methods to examine the object(s) that belong to that particular scientific field. If the research produces results that do not fit into prevailing theoretical framework, they may be discarded as anomalies or as simply erroneous. But if anomalous results accumulate, they eventually reach a point when they challenge the current theory. The theory then needs to be reformulated or replaced with a new one, as when Ptolemaic astronomy was replaced by Copernican theory on the order and movement of celestial bodies.

When the theoretical change, or revolution as Kuhn calls it, has occurred, there follows again a period of normal science where new theory is tested with empirical research. Kuhn calls this process the mopping up phase, when researchers apply the new theory to anything they can think of, until new anomalies start to appear that lead to new ideas and revolutions.<sup>286</sup>

While Kuhn's theory has been widely appreciated, it has also been found to be problematic in many of its core assumptions. As Kuhn himself concedes, his approach leaves important questions uncovered such as the actual process (the conduct of the people who are involved with everyday scientific work) of scientific development.<sup>287</sup> His basic concept paradigm also remains somewhat ambiguous, since he gives various definitions for it in his book.<sup>288</sup> More importantly, for the aims of this essay, he leaves medicine outside his theory altogether without giving a proper justification for so doing. As discussed earlier, he mentions medicine only in passing, equating it with crafts such as metallurgy and calendar making<sup>289</sup> and with fields such as technology and law<sup>290</sup> which he does not consider to be sciences since they derive their justification from external social need – an argument he does not, however, pursue any further.

Not only did Kuhn not consider medicine a science in its own right, but also, it seems, the development of medicine does not fit into Kuhn's model. In light of what has been evinced so far, it is apparent that the development of the concept of psychosomatic in medicine is not a consequence of drastic paradigm shifts resulting from anomalous findings amassed over a period of normal scientific enquiry. On the contrary, the issue of the mind-body relation has long been debated in medicine and the introduction of the concept psychosomatic into medical theory did not occur because of anomalous observations that did not fit into some previous theoretical model. The development of the concept psychosomatic followed quite another developmental route, where there were new theoretical, rather than empirical, openings to perennial questions.

This observation is not confined to the development of the concept psychosomatic in medicine. For example, it has been received wisdom among physicians that there is something affecting the patient's well being (or ill being) during the clinical encounter between physician and patient brought about by the physician's mere presence. But how could this phenomenon be explained? In the late 18<sup>th</sup> century Mesmer postulated, following the ideas within the rapidly developing field of physics, that there must be some mediating agent acting between the doctor and the patient causing this effect. As an explanation Mesmer suggested the possibility of magnetic fluid emanating from the physician to the patient. Since it was obvious that this effect

had to be based on a different kind of magnetism as that observed in iron particles, Mesmer proposed the concept animal magnetism to explain the phenomenon. This theoretical approach inspired a number of physicians to apply the new conceptual framework in their practice. It was only after decades of practising and debating shedding no light on the essence of these phenomena that Braid solved the problem by proposing a new conceptual approach to the issue as we discussed in Chapter 4. Braid's solution was, thus, not based on new empirical and anomalous findings, but offered a new conceptual apparatus where the essence of the phenomenon was moved from what occurred between physician and patient mediated by physical substance such as magnetic fluid to the properties of the patient's nervous system induced by suggestion. The adoption of the concept nervous sleep and, eventually, hypnosis, into the medical vocabulary came, thus, because of the weaknesses in the previous conceptual system to explain the phenomenon.

To give another example in the development of medicine that does not quite fit into Kuhn's idea of paradigm change through the amassing of anomalous findings in the course of empirical research, let us consider the case of tuberculosis. We find among the earliest written observations on human illness descriptions of the phenomenon of gradual wasting of the patient's body accompanied by blood-stained sputum and increasing difficulties in breathing, a process that most often proved fatal. In the early medical writings these phenomena were grouped under a concept phthisis. The underlying theoretical assumption held dyscrasia or disturbed composition of the blood to be an explanation for the condition. The treatment was targeted, in accordance with the theory, at restoring the properties of the patient's blood through diet, exercise, venesection and enemas. The problem from a theoretical point of view was identifying what led to dyscrasia, whether the condition was contagious and, if so, what the mediating agent for the contagion might be.

The idea that certain diseases can be acquired through contact with a sick person is as old as medicine itself. Different plagues have afflicted mankind since the dawn of history and it has been obvious even for an interested layman that there is some contagious element around when the illness tends to move from one person to another after close contact with the diseased. (This phenomenon has not concerned only humans, but also domestic animals as discussed, for example, in the 9th century AD

Arabic treatise Al-Bukhari, which advises against mixing diseased animals with healthy ones to prevent the spreading of disease.<sup>291</sup>) Hence, people avoided afflicted villages and towns and fled, if possible, when a plague arrived in the vicinity. Those who succumbed to a disease were restrained from physical contact with healthy ones, as in the case of leprosy. It has also been apparent that moving from one place to another is a means for spreading the disease. Therefore, authorities imposed restrictions on travel during outbreaks of plague as long as there were any authorities present having the power to issue and enforce such restrictions.

It has also long been a common observation that not all of those who have been in contact with diseased individuals have fallen ill. There have been various explanations for this phenomenon, such as the use of protective chants and amulets or Divine grace, which has been deemed the ultimate cause for man's fate in the world anyway. As Pepys wrote in his diary in May 1665, when the first cases of plague were seen in London: "Great fears of the sickness here in the city...God preserve us all!"<sup>292</sup>

Together with the apparent contagion of a disease from one afflicted person to another the question of the mediating agent has been discussed in medical literature since antiquity. For example, a Roman scholar Varro (116-27 BC) contemplated intermittent fevers in his treatise on farming *Rerum rusticarum libri tres*, and came to a conclusion that there must be "certain minute animals, invisible to the eye, [that] breed there [swampy land], reach the body by way of the mouth and nose and cause diseases"<sup>293</sup>.

In 1546, more than a hundred years before Leeuwenhoek published his observations with a microscope on minute living creatures, *Animalculae* as he called them, a Veronese physician Girolamo Fracastoro (1483-1553) discussed the problem of transmission in his book *De Contagione*. He postulated that there were three ways for a disease to spread, direct contact, via infected objects or *fomites* and air. He presumed that there were certain imperceptible particles, *seminaria*, which could exist outside the body for long periods of time and still be infectious when coming into contact with a human being. When entering the body the *seminaria* generate offspring

similar to themselves until the person's bodily humours were fully infected by them<sup>294</sup>.

By the early decades of the 18<sup>th</sup> century the observation of microscopic phenomena had become commonplace and the issue was frequently debated in scientific periodicals. For example, by 1720 a number of studies had been published in *Philosophical Transactions* alone on *Animalculae*<sup>295</sup> and by the end of the century hundreds of different creatures were differentiated and described in the scientific literature.<sup>296</sup>

In 1722 an English physician, Benjamin Marten, contemplated the aetiology of phthisis, or *consumption* as the disease had become known, in his book *A New Theory of Consumption, more especially of a Phthisis or Consumption of the Lungs*. He concluded that the illness could be caused by "wonderfully minute living Creatures", which, once they had gained a foothold in the body, could generate the lesions and symptoms of the disease. He wrote how "For this Distemper as I have observed by Frequent Experience, does infect those that lie with the sick Person with a certain taint". Marten concluded that there were also other diseases such as *itch*, *leprosy* and *venereal Distemper* that were more likely to spread in the same manner. Yet, as Marten noted, the role of contagion was fiercely contested in the medical circles of his time, since in many cases people did not fall ill despite in being close contact with the diseased.<sup>297</sup>

Until the nineteenth century the theoretical development of the problem of consumption had consisted mainly of regrouping the various signs and symptoms of the ailment in order to extrapolate its essential features and to achieve better understanding of and treatment for it. Yet, these attempts did not challenge the underlying theoretical idea of the foul mixture of blood as the cause of the disease. For example, in 1685 an English physician Richard Morton published a book *Phthisiologia: or a Treatise of Consumption* where, while recognising the great clinical variety of the disease, he offered three key features for it: wasting of the whole body, a hectic fever, and an exulceration of the lungs.<sup>298</sup> The latter observation was based on autopsy findings where certain nodules, *tubercles* were found in the lungs of diseased cadavers. According to the then prevailing theory Morton assumed

that these nodules were due to the dyscrasia of the blood, which produced fluids in the lungs that hardened into tubercles. Morton's contribution consisted of redefining the concept consumption by localising the disease to the lungs and considering the tubercles to be a pathognomic sign for the condition.<sup>299</sup>

The problem, however, was that different kinds of nodules were found in the lungs of cadavers. When the clinical pictures also varied greatly, how were the different nodules found in the autopsies to be connected with different signs and symptoms observed when the patients were still alive? The 18th century microscopic techniques did not provide much help in studying the details of the nodules, which for the examining eye looked fairly similar. There were also other problems to be solved. Did pneumonias, empyemas, catarrhs etc. develop into consumption or was it the other way around? Or did they have anything to do with each other in the first place?

By the beginning of the 19th century the case had become quite indisputable that consumptive patients did, indeed as a rule, seem to have certain nodules in their lungs. But there were more problems to come. It appeared that similar nodules were found in autopsies in other organs of patients without consumptive symptoms. What were these nodules? Why did they emerge in various parts of the body? And what, if anything, had they to do with the fate of the consumptive patients?

These questions called for better methods for differentiating the structure of these autopsy findings. Although the first microscopes were built in the 17th century, after more than a hundred years of development they were still rather crude. Even the best instruments provided more or less distorted and hazy images.<sup>300</sup> Plant cells were readily observable, but human or other animal cells could not be discerned, since they are transparent and lack wall structures such as those in plant cells. In the early decades of the 19th century rapidly advancing technology provided much more accurate devices for microscopic studies. These, together with developing methods for sample preparation, offered new possibilities for research on the finest structures of the human body.

While an Italian anatomist, Malpighi, had already characterised the varieties of human tissues by the end of the 17th century<sup>301</sup>, it was only in 1838 that a German physician,

Schwann, was able to proclaim that all animal tissues were constructed, ultimately, of different cells.<sup>302</sup> The emerging cell theory in biology also gave new momentum to studies of the composition of the human body in health and illness. Then, only twenty years later, another German, Rudolf Virchow, was ready to maintain in his epoch-making book *Die Cellularpathologie*, that life in all its forms is based on cells. It follows then, argued Virchow, that all human disease is, essentially, a disease of a cell.<sup>303</sup>

In light of these theoretical and empirical developments the characterisation of consumption now needed to be reformulated with novel concepts. Microscopic post mortem studies had established, that the normal cellular structure is destroyed in consumptive patients' lungs and replaced with caseous nodules, which showed signs of degeneration in the middle, eventually developing into empty cavities. With the diminishing lung tissue the patient's ability to breathe declines. The expanding cavities destroy blood vessels, leading to haemorrhages, wasting and death. Since the diagnosis was now anchored to the presence of histologically typified tubercles in patients' lungs, a new concept *tuberculosis*, was introduced into the medical vocabulary by a German physician J.L. Schoenlein in 1839.<sup>304</sup>

While the new concept tuberculosis was now based on the characteristic pathological changes in pulmonary tissue, crucial questions remained to be answered. Why did these tubercles appear? Could they be transmitted from one person to another, as in some occasions seemed to be the case? And if so, what is it that is transmitted?

In 1865 a French military surgeon, Jean-Antoine Villemin, stated in a lecture before the French Academy of Medicine that he had been able to transmit tuberculosis from one infected animal to another.<sup>305</sup> Villemin had followed the idea of tuberculosis as a contagious disease and conducted a series of experiments where he injected material from human tubercles into different animals and saw that the disease did indeed develop in those animals. Although he could not detect what the contagious element consisted of, his studies suggested that consumption was, indeed, an infectious disease.

When Villemin conducted his studies he must have been well aware of the contagious nature of many illnesses as well as the contemporary theoretical problems in medicine, where aetiological agents such as foul air, or miasma, as a cause for many diseases were still debated.<sup>306</sup> While the experiments Villemin designed did demonstrate the fact of contagion, they did not, however, reveal the nature of the mediating agent. Apparently, new conceptual and methodological solutions were needed to solve the problem.

By the time Villemin entered the field, microscopic techniques had already made it possible to appreciate the richness of the microbial world for almost two hundred years. In the early decades of the 19th century a great number of microscopic creatures were observed, named and classified and the question of their origin and role in the living world was becoming more and more acute within the emerging science of the living world, biology. One of the main theoretical debates among early 19th century biologists revolved around the question whether microbes generated spontaneously under suitable conditions or procreated from parent microbes only. To solve the dispute, series of rigorous experiments were designed in various rival laboratories.

The significance of microbes for living processes in general and in certain diseases in particular was becoming apparent in the latter part of the 19th century. In 1878 Louis Pasteur was able to demonstrate how silk worms were afflicted by certain communicable protozoa (an observation already published in 1835 by Agostini Bassi<sup>307</sup>). By analogy, various diseases could be assumed to be caused by different micro-organisms. This was shown to be true in the following years when animal diseases such as chicken cholera and anthrax were shown to be caused by certain bacteria. Then, in 1882 a German physician, Robert Koch, announced in a lecture before the Berlin Physiological Society, that he had found a certain bacteria associated with tuberculosis as a rule, thus named *Mycobacterium tuberculosis*.<sup>308</sup>

These and many other studies proved that microbes could spread through the air (as Varro had assumed in the first century BC) and that under appropriate conditions they might reproduce and multiply to vast numbers from parent microbes (as Fracastoro had postulated in the 16th century) and cause various diseases (as Marten had considered in the early 18th century). Eventually, the relocation of phthisis from foul

blood to cellular changes owing to the infection by Mycobacterium and casted into concept tuberculosis, opened up paths for a new understanding of the nature and cause of this age-old scourge and offered new prospects for its prevention and cure.

The idea of the contagious nature of phthisis and the idea of a mediating agent was, thus, not established by observing anomalies in the course of the disease while applying current research methods, such as when calculating the anomalies in the movement of celestial bodies in relation to Ptolemaic theory. On the contrary, the conceptual transformation of phthisis into tuberculosis and from dyscrasia of the blood to bacterial infection matured through attempts to answer the perennial questions: what happens in the human body in the course of illness? Is the affliction contagious? And if so, how is the contagion mediated?

While the theory of infectious disease is now well established in medicine, it is still, to use Kuhn's expression, in its mopping up phase. That is, it is constantly being tested and expanded when we are asking whether most, if not all, diseases from arteriosclerosis and rheumatoid arthritis to dementia and schizophrenia, could be caused by micro-organisms. But the infection theory has also had problems right from the beginning since it is well known that there are many occasions when a person carries a pathogenic micro-organism in his or her body without any apparent symptoms or signs of the disease. These observations have called for explanations for the mechanisms of how a particular micro-organism can cause a certain disease while another, even of an identical strain, seems to be harmless, even when found in vast quantities in a human body. Why is this so? Alongside the birth of the concept infectious disease the problem of asymptomatic germ carriers led to the development of the concept immunity and the field of immunology, which has successfully addressed many of the problems of infection and disease, but which has not challenged the idea that in order to have, say, tuberculosis, there needs to be, by definition, a mycobacterium found in the afflicted person's body. Even in cases where no micro-organisms can be isolated and identified, as, for example, in some middle ear inflammations, we assume that there is, of necessity, some sort of an organism present, but we just cannot make it perceptible with our present methods. This is analogous to a situation where an astronomer observes a slight distraction in a movement of a celestial body without any apparent cause. S/he assumes, according to

the theory, that there must be another object causing this disturbance, even though it cannot be observed with current techniques. This line of reasoning has led both medicine and astronomy to discover micro-organisms and celestial bodies in places where they were supposed to be found, as dictated by the theory. At least, so far.

It seems, then, that, in light of the examples above, scientific development in medicine does not follow Kuhn's model of scientific revolutions caused by discovering anomalies. We need, therefore, to look elsewhere to find better theoretical tools to understand the nature of the development of medicine.

### **Science as a socio-historical endeavour**

Kuhn expresses in the Preface to the second edition of his book his indebtedness to Ludwig Fleck (1896-1961) for the premise that science is done by people acting in a certain historical time and place and that it is dependent on them both for methods and for ways of thinking.<sup>309</sup> What had Fleck, then, to say to inspire Kuhn in developing his theory?

Ludwig Fleck spent his formative years in Lvov, then Poland, and received a degree in medicine at the local university in 1922. During the years to follow he concentrated, amidst his clinical work, on bacteriological and serological studies and published widely on various issues in medicine and also on scientific methodology. After working as a researcher in Vienna in the heyday of the Vienna Circle in 1927, he returned to Lvov, where he wrote a monograph *Entstehung und Entwicklung einer wissenschaftlichen Tatsache* (Genesis and Development of a Scientific Fact), which, for reason of anti-Semitism, was not published in his home country but in Switzerland in 1935. After the second World War Fleck immigrated to Israel where he died in 1961.

Fleck's treatise remained little known to the Anglophone scientific world for decades until the English translation appeared in 1979. In his Foreword to Fleck's English edition Kuhn recounts how he had come across Fleck's work as early as in 1949, after having stumbled on a footnote referring to it in another book.<sup>310</sup> It was Fleck, says

Kuhn, who made him realize the fundamental importance of a sociological dimension when writing on the development of science.

In his book Fleck discusses the development of a scientific fact by using the discovery of the so-called Wasserman reaction (a diagnostic tool for syphilis) as a case in point. Fleck's main thesis is that whatever ideas are developed and cast in the form of a scientific fact, their developmental process originates from a "socio-cognitive foundation" of the time and place of the inquiry. Scientific facts are, thus, not spontaneously created through someone observing something, but are developed through the collective work of scientists working in a certain period of time, in a certain place and in a certain intellectual climate. Whatever ideas emerge in the above, they are determined and shaped by their predecessors, or protoideas as Fleck calls them.<sup>311</sup> Following our examples on the development of medical theories and concepts as presented in this essay, it seems that medicine is indeed rich in protoideas developing into what we hold today to be scientific facts. (We may discern similar processes in other sciences as well, but it is beyond the scope of this essay to expand the discussion to examples from other scientific disciplines.)

Fleck maintains that the development of scientific concepts from the early to modern period cannot be described in terms of formal logic due to the sheer fact that the meanings of concepts have changed in the course of time. A scientific concept cannot, thus, be attained without the consideration of a particular historical connection, that is, to discover its operative socio-cognitive forces and development. To indicate "a community of persons mutually exchanging ideas or maintaining intellectual interaction" Fleck introduces the concept thought collective. It provides "the special 'carrier' for the historical development of any field of thought, as well as for the given stock of knowledge and level of culture".<sup>312</sup>

A thought collective should not, however, be understood as a fixed group or social class:

"A thought collective exists whenever two or more persons are actually exchanging thoughts...If a large group exists long enough, the thought style becomes fixed and formal in structure. Practical performance then dominates

over creative mood, which is reduced to a certain fixed level that is disciplined, uniform, and discreet. This is the situation in which contemporary science finds itself as a specific, thought-collective structure.”<sup>313</sup>

Here Fleck shares the same understanding of the social development of scientific thinking as Vygotsky and Ilyenkov. Scientific ideas cast into concepts are formed, accepted and used among a certain group of people in a particular historical period of time. This process cannot be attributed to any single mind but to a group of minds having continuous discussions and debates at a certain historical moment. For example, while the word psychosomatic had occasionally appeared in the medical literature much earlier, it was only in the late 1930s when a medical thought-collective strong enough was formed to launch a journal devoted to the field that was to be called psychosomatic medicine. This was a process that obviously could not possibly have taken place, say, a hundred years earlier, owing to the mere fact of a lack of a conceptual system such as that provided by psychoanalysis and a thought-collective supporting it, although there were occasional voices to be heard calling for psychology to be brought into medicine. The same process can be seen in the development of the concept of infectious disease. The idea of living particles causing diseases had been there for ages but only through the development of microscopes (precipitated largely by the needs of biologists and physicians) was it possible for there to arise a thought-collective strong enough to establish the concept of infectious disease into medical theory.

With the concept of thought style Fleck refers to

“the entirety of intellectual preparedness or readiness for one particular way of seeing and acting and no other...readiness for directed perception, with corresponding mental and objective assimilation of what has been so perceived...It constrains the individual by determining what can be thought in no other way.”<sup>314</sup>

With this approach Fleck concurs, again, with Vygotsky’s and Ilyenkov’s position as presented above. That is, there are no such things as pure observations. We invariably perceive the world from a certain position that has been largely determined by the language we have adopted through being raised in a certain community at a certain

time. This also applies to scientific thinking. As the extracts from the letters of rejection by the editors of the Journal show, if the author does not address the object of study from a certain point of view with an appropriate and clearly stated conceptual vocabulary, there is no room for that article in that particular journal. This can be seen in any other scientific journal. Each and every one of them is intended to address the phenomena under scientific inquiry from a certain theoretical point of view. Even so-called general scientific journals have their own explicit, or at least implicit, ideas on the scientific way of addressing problems of interest and also on the concepts to be used. These change over time and, as Fleck remarks, whole eras of science may be ruled by these thought constraints until new thought-styles are created. One may observe this by simply browsing the first issues of *Philosophical Transactions* in the late 17<sup>th</sup> century and comparing them with the latest copies of *Science*. Even now, the thought style in the latter contains vestiges of the historical developments and elements from previous styles.<sup>315</sup>

For Kuhn, Fleck's basic concepts thought collective and thought style seem to consist of what he calls a normal science and what Fleck considers a *classic stage* of a science, when only those facts are recognised which conform to it. Then there follows a period of complications, that is, when the exceptions begin to emerge.<sup>316</sup> For Fleck, however, the emergence of exceptions seems not to be a result of logical problem solving or rigorous experimentation but is rather a question of epistemology and cognition. Fleck writes, that

“one of the most important tasks in comparative epistemology is to find out how conceptions and hazy ideas pass from one thought style to another, how they emerge as spontaneously generated pre-ideas, and how they are preserved as enduring, rigid structures owing to a kind of harmony of illusions. It is only by such a comparison and investigation of the relevant interrelations that we can begin to understand our own era.”<sup>317</sup>

Fleck continues how

“in comparative epistemology, cognition must not be construed as only a dual relationship between the knowing subject and the object to be known. The existing fund of knowledge must be a third partner in this relation as a basic factor of all new knowledge...interaction exists between that which is known

and the act of cognition. What is already known influences the particular method of cognition... Cognition is therefore not an individual process of any theoretical 'particular consciousness'. Rather it is the result of a social activity, since the existing stock of knowledge exceeds the range available to any one individual. The statement, 'Someone recognizes something', whether it be a relation, a fact, or an object, is therefore incomplete."<sup>318</sup>

We may note here, that in the above Fleck concurs not only with Vygotsky and Ilyenkov regarding the idea that a concept can be understood only in relation to other concepts, but also with C.S Peirce (1839-1914) and his triadic idea of a sign as a carrier of meaning. Peirce proposed a definition of sign, where a sign is composed of three components, a representamen, an object and an interpretant. The representamen is the material form of a sign, which refers to an object, just as red in a traffic light indicates the imperative to stop. The interpretant refers to the meaning a sign acquires when evaluated against a pre-existing system of signs, in this case traffic rules and regulations.<sup>319</sup> Every sign is, thus, devoid of meaning until interpreted by subsequent thought, an interpretant. In fact, a sign is no sign at all without it. Red in a traffic light has no meaning to a person who has no idea of the way modern traffic is organised. For him or her it is merely a post with a red light. It conveys no meaning, i.e. it does not refer to anything outside of itself. Similarly, for most of our contemporaries the word dyscrasia is just a strange word but for those familiar with Galenic medicine it signifies a whole theory for the aetiology of disease, not to mention early physicians who practised their craft according to that theory. To give a commonplace clinical example of the necessity of an interpretant for sign formation in our contemporary medicine, let us consider the interpretation of a chest x-ray picture. Where a layman sees just random shades of grey, a radiologist may discern signs indicating a possibility of, say, a case of pneumonia. To form this interpretation the radiologist weighs his or her knowledge on the patient's condition against his or her pre-existing knowledge of the various ways in which pneumonia may present itself in a chest x-ray. (This also exemplifies the fact that the interpretation of the patient's signs and symptoms in medicine is not based on passive observation but is an active and continuous process following the history and course of the patient's illness in relation to the theory guiding the physician's thinking).

Scientific development is not, then, merely a process of observing something and constructing theories on the basis of those observations. Before we can make any scientific observations, we must have an idea of what makes an observation a scientific observation, what is it that we are about to observe, what methods we are about to apply and how we are about to present our findings and conclusions. These are all based on language and during that process various psychological, historical and sociological factors affect the way the research plan will be structured and worded.<sup>320</sup> Hence in order to understand the birth and development of scientific concepts, we need to examine all three factors involved in cognition, the individual, the collective, and the object under consideration.

It follows, that even though the collective is composed of individuals, not only the principal ideas but also all the formative stages of concepts are the result of the collective, not individual effort. Yet, as noted earlier, the idea of individual geniuses inventing new ideas with their serendipitous minds acting independently of the time and place of their efforts is tempting. This is exemplified in Lionel Trilling, who writes in the Introduction to Ernest Jones' biography of Freud that

“...the basic account of the history of psycho-analysis is the account of how it grew in Freud's own mind. For Freud developed its concepts all by himself.”<sup>321</sup>

Marmer points out<sup>322</sup>, however, that the basic structure of Freud's theory can be seen as deriving from Herman Helmholtz, (1821-1894) one of the most prominent physiologists of his time, who had drawn on Newton's energy laws when he was attempting to explain physiological processes on the grounds of the theory of conservation of force. Helmholtz formulated a physiological constancy principle according to which various forms of physical energy within the living organism can be converted into one another with neither a gain nor loss in the process. While the energy remains quantitatively constant in this process, it may undergo various qualitative transformations.<sup>323</sup> Helmholtz's ideas were mediated to Freud by his teacher Brücke, who had studied together with Helmholtz in 1840s under Johannes Müller, who was one of the founding fathers of German physiology. (Freud's debt to Helmholtz can readily be seen in the quotations presented in Chapter 6 where Freud

formulates his theory of conversion.) Another influential figure behind Freud's thinking was Theodort Meynert (1833-1892), the director of the Psychiatric clinic associated with the University Vienna, who had directed Freud's interest to neuroanatomy and its behavioural consequences. Marmer also notes, that Freud had derived his interest in the relation between mental structure and function from the work of the neurologist Hughlings Jackson. Freud's method of free association can be seen as an application of Jackson's idea of dynamic associationism and Freud's concept regression can be traced to Jackson's idea of the maintenance of early memories in the brain. Freud's theory of psychological stages of development can, in turn, be traced to Jackson's evolutionary theories of brain development. The concept unconscious, one of Freud's fundamental concepts in his theory, also has its own and long pre-Freudian history.<sup>324</sup> Finally, it was Charcot whose work on hysteria and the use of hypnosis opened for Freud the path to join his creativity with that of Breuer, a path that eventually led to the development of psychoanalytic theory.

To return to Fleck, he considers cognition in general to be the most socially conditioned activity of man. Scientific knowledge is, therefore, a social creation and the structure of the language scientists use presents a compelling philosophy characteristic of that particular scientific community. For Fleck, as for Vygotsky, even a single word in a scientific text may represent a complex theory.<sup>325</sup>

Furthermore, Fleck writes (again in a similar vein to Vygotsky and Ilyenkov) how the entire fund of knowledge, as well as the intellectual interaction within the collective, are both present in every single act of cognition. In fact, without social conditioning any cognition is impossible. The very act of thinking is a social activity that cannot be completely localized within the confines of the individual. Scientific activity is not merely the summation of individual work but, rather, additive in the emergence of a special form of human conduct, as the playing of an orchestra.<sup>326</sup> Therefore, Fleck maintains, any epistemological theory that does not take this social dependence of all cognition into account is inadequate. Indeed, for Fleck the very word cognition acquires meaning only in connection with a thought collective.<sup>327</sup>

To summarise the position of this essay thus far, the problem of the genesis and development of a medical concept is insoluble from an individualistic point of view.

Conceptual development in medicine must be regarded as a social process. This process has no fixed beginning, it is continuous and open-ended. Concepts exist and are used in the collective and they are subject to constant revisions. The understanding of the object of inquiry for a particular scientific activity and its actual performance in research can be resolved into historical sequences of ideas cast into concepts belonging to the collective.<sup>328</sup> The true creator of a new idea is, thus, not an individual but the thought-collective acting in a certain historical situation.<sup>329</sup>

While Fleck's approach to the development of science seems more comprehensive than Kuhn's in the way it treats the social nature of scientific process, it leaves the question of the nature and role of scientific concepts within that process rather unexplored. Now that I have depicted the formative process and the introduction of the concept psychosomatic into medical discussion, let us next examine how the concept was subsequently treated as a tool for developing medical theory.

I will delineate the discussion to follow into two periods, starting with the first twenty-five years of the *Journal* and other relevant literature published during that period and then trace the fate of the concept psychosomatic to the present day. This solution is chosen, first, because by 1964 the main proponents of the concept psychosomatic had died (Flanders Dunbar died in 1959 and Franz Alexander and Felix Deutsch, who had concentrated on developing the concept conversion during the last phase of his theoretical work<sup>330</sup>, both died in 1964) and were thus no longer contributing new openings in the development and the use of the concept. Second, in 1964 Kaufman and Heiman published the first comprehensive attempt to look back at the development of the concept psychosomatic in medicine in their book *Evolution of Psychosomatic Concepts. Anorexia nervosa: A paradigm*<sup>331</sup>, which will serve as the turning point to what follows.

## Chapter 7 - Psychosomatic theory in the making

Kaufman and Heiman in their 1964 book offer a series of reprinted articles, which they consider illustrative of the development of the contemporary understanding of what the concept psychosomatic denotes. The editors were members of the Mount Sinai Seminar Group, a gathering of physicians at the Institute of Psychiatry at the Mount Sinai Hospital, New York, discussing the problems in psychosomatic theory using anorexia nervosa as a case in point. The book includes among others papers by Freud, Deutsch and Alexander which we have already discussed and also articles addressing the problem of anorexia nervosa starting with William Gull's classic accounts of the syndrome in the latter half of the 19<sup>th</sup> century. I shall return to the authors' conclusions later, but first consider a brief statement in their Introduction illustrating the state of the art in the discussions concerning the concept psychosomatic in the early 1960s. The editors write, that "in spite of the tremendous volume of reports and work that was been done [in the field of psychosomatic medicine], or perhaps because of it, there exists a state of confusion which is related to many factors".<sup>332</sup> The editors do not, however, analyse the nature of and the reasons for this confusion any more profoundly. Since there seemed to be a state of theoretical disarray worth mentioning after twenty five years of intensive research in the field of psychosomatic medicine let us now attempt to trace what that confusion consisted of and what might have been the factors contributing to it in the light of the early developments in psychosomatic writing.

To start with, note that the object of the journal *Psychosomatic Medicine* was, according to the Introductory Statement in its first number, to "study in their interrelation the psychological and physiological aspects of all normal and abnormal bodily functions and thus to integrate somatic therapy and psychotherapy". Methodologically "The pathological phenomena that belong to these different fields should be studied from both the physiological and the psychological point of view".<sup>333</sup> The editors' theoretical orientation was "to adhere to a unitary conception of medicine as an experimental science, to introduce scientific precision into the 'art'" Furthermore, "... medicine is a biological science and...its facts are derived from the study of animals as well as of patients."<sup>334</sup> Medicine should, thus, be seen as an

empirical biological science where both physiological and psychological studies need to be integrated to usher in a “new era” in medicine, constituting what the editors chose to call psychosomatic medicine and what was simultaneously “both a special field and an integral part of every medical specialty”.<sup>335</sup>

It seems that the launching of the Journal was received with some enthusiasm within medical circles. In 1943 Ruth Potter, the Executive Secretary to the Journal, wrote to Felix Deutsch that the number of subscriptions had more than doubled in four years. A steady stream of manuscripts were also submitted to the editors; in 1944 the acceptance rate for papers to be published was one in eight.<sup>336</sup>

Inspired by the favourable reception of the Journal, Dunbar suggested in an editorial board meeting in 1942 that a society should be established to take over the sponsorship of the Journal. The board of editors and the advisory board could form the core of the society and it could be enlarged by “inviting to membership those interested physicians and scientists”. Eventually a letter of invitation was sent to “celebrate the inaugural meeting of the American Society for Research in Psychosomatic Problems”. The meeting was held on December 18th in 1942 at the Waldorf in New York City. The membership of the Society was formed on an invitation-only basis for those who had demonstrated “a constructive effort in the study of psychosomatic medicine” and its presidents were to be chosen to serve for one year at a time. In 1944 the sponsorship of the Journal was handed over to the Society.<sup>337</sup>

During its early years the Journal attracted many authors on their way to international fame such as Abraham Maslow<sup>338</sup>, Thomas Szasz<sup>339</sup>, Margaret Mead<sup>340</sup>, Milton H Erickson<sup>341</sup>, Georg Engel<sup>342</sup>, Benjamin Spock<sup>343</sup>, Donald Hebb<sup>344</sup> and Gregory Bateson<sup>345</sup>, to name a few. Several established psychoanalysts also contributed to the Journal, such as Sandor Rado writing a critical comment on the concept of bisexuality<sup>346</sup>, Helen Deutsch reflecting her psychoanalytic observations<sup>347</sup>, Otto Fenichel discussing the psychopathology of coughing<sup>348</sup> and Gotthard Booth using Rorschach’s method to examine the relation of organ function and perception of form.<sup>349</sup>

Reading through the first volumes of the Journal it appears that the editors were able to steer its content as established in the Introductory Statement. There was a strong emphasis on empirical studies, as the editors had stressed, and the balance between empirical physiological and psychological studies was roughly maintained. There were also articles dealing with purely neurophysiological topics such as *The Hypothalamus: A Review of the Experimental Data*<sup>350</sup>, *The Measurement of Individual Differences in Autonomic Balance*<sup>351</sup> and *An Experimental Study of the Functions of the frontal Lobes in Man*<sup>352</sup>. It is noteworthy, however, that the concept psychosomatic does not appear in any of these or many other papers of the kind. Nor do we find the concept in articles dealing with psychophysiological issues such as *Blood Pressure and Palmar Sweat (Galvanic) Responses of Psychotic Patients before and after Insulin and Metrazol Therapy: A Physiological Study of "Resistant" and Cooperative Attitudes*<sup>353</sup> and *Electroencephalographic Studies on Three Cases of Frontal Lobotomy*.<sup>354</sup> All these studies lacked theoretical discussions on what the concept psychosomatic might imply. There were, however, a few attempts at theoretical clarification and development in the first issues of the Journal.

### **Formulating fundamentals**

Three years after the launching of the Journal we read in the editorial of the first number of the 1942 volume that "There is a rapidly growing interest in the field of Psychosomatic Medicine, and work both in experiment and in development of theory and concepts continues unabated."<sup>355</sup> The theoretical discussions concerning "the development of theory and concepts" were not so explicit, however, in the material so far published in the Journal. In fact, the only paper dealing directly with theoretical and conceptual problems embedded in the concept psychosomatic until 1942 was Alexander's article in the first number of the Journal to which reference has already been made.

In 1943 Alexander developed his conceptual thinking further in a paper published in the Journal entitled *Fundamental Concepts of Psychosomatic Research: Psychogenesis, Conversion, Specificity*<sup>356</sup>. In his article Alexander returned to the definition of what he saw as the basic concepts in psychosomatic thinking. He

reminded the readers that in founding the Journal, the editors felt that “in the first issue some clear statement should be made about this confusing philosophical [psyche versus soma] issue to discourage authors from writing ‘endless discussions on this point’”. He then regretted that the Journal was still receiving manuscripts with some apologetic attempts to explain that “one should not speak about psychogenesis but of the coexistence of certain psychological factors with certain physical symptoms”. Alexander held that the question of psychogenesis should be clarified, “stating explicitly what is meant by it”. Alexander then wrote that the concept of psychogenesis was to be seen as referring to the “physiological processes consisting of general excitations in the nervous system which can be studied by psychological methods because they are perceived subjectively in the form of emotions, ideas or wishes”. It is noteworthy, that when discussing the concept of psychogenesis Alexander describes it with purely physiological terms. For Alexander the concept of psychogenesis does not, thus, refer to some immaterial psyche affecting the body, but to an excited state of a nervous system. This excitation can be studied both with physiological and psychological methods to reveal its nature and origins. Psychological methods are just another means by which one and same process can be studied from different angles. Alexander, however, refrains from reflecting the theoretical problems inherent in his position any further. (These problems will be discussed in more detail in Chapter 9.)

Since there were no other theoretical openings apart from Alexander’s in the Journal in its early years, let us see how the issue was dealt with in books on psychosomatic medicine that started to appear in the early 1940s. In 1943 Dunbar published a book titled *Psychosomatic Diagnosis*<sup>357</sup>, which was a compilation of studies performed over a decade at the Cornell Medical Centre in New York City. Dunbar wrote that the overall background theory for her studies was *organicism*, which had emerged in biological sciences in the early decades of the twentieth century. This approach emphasized, as Dunbar expressed it, “an equilibrium within the organism and of the organism in its environment. . . It has given rise to the term psychosomatic medicine in accordance with which psychic and somatic represent two angles of observation from which the organismal unit should be studied, two pictures which then should be superimposed or viewed stereoscopically”.<sup>358</sup> (Dunbar probably coined this metaphor

from the View-Master children's toy which was first introduced in the New York World's Fair in 1939). For Dunbar this conceptual change replaced the clinical focus in medicine from pathological anatomy to functional thinking, where the question is not whether a certain illness is due to either physical or psychological factors but, rather, to what extent it is physical and psychological.<sup>359</sup>

In 1943 another book on psychosomatic medicine appeared under the title "Psychosomatic Medicine – The Clinical Application of Psychopathology to General Medical Problems"<sup>360</sup> by Edward Weiss and O. Spurgeon English, who were at the time professors of clinical medicine and psychiatry, respectively, at the Temple University Medical School in Philadelphia.

The authors open their book with a case history of a young woman who had developed a severe and mysterious cluster of symptoms, which the junior physician attending (Weiss) had not been able to diagnose or cure. After being bedridden for her symptoms for months the patient's family decided to consult an elderly practitioner who had taken care of the patient when she had been a child. The senior physician soon realised that the young woman had developed her symptoms once she had been informed that her only brother, to whom she had been very close, had decided to marry. Once the physician told the patient this she recovered rapidly. A lesson to learn for the then junior physician Weiss was that there is more to being ill than just the disease.<sup>361</sup>

As for their theoretical basis the authors wrote, that "no work on psychosomatic medicine could have been attempted without the biologically orientated psychology of Freud".<sup>362</sup> The authors foresaw that "with this latest development in research all medicine tends to become psychosomatic medicine... future textbooks of medicine will have to embody this approach".<sup>363</sup> (Concluding from the fact that the book was reprinted four times within a year from its first edition the authors' optimism was not unwarranted.) The authors saw that medicine was entering a new theoretical phase, departing from Virchow's idea that all disease is, ultimately, a disease of a cell. The line of reasoning in Virchow's approach was that cellular disease leads to structural alterations in tissues, which cause to physiological or functional disturbances within the body. An attempt was made to reverse this idea in early twentieth century

medicine, owing to the formulation of organicistic theory in biology and rapidly developing methods and findings in physiology. According to this new line of thinking, functional disturbances in a body may lead to cellular disease and, eventually, to structural alterations within the body. The problem was, however, what causes the functional disturbances. The authors formulated their approach

Psychological disturbance -> Functional impairment -> Cellular disease -> Structural alterations".<sup>364</sup>

It follows, according to the authors, that a medical practitioner can no longer focus only on the presence or absence of organic disease and in the case of the latter content him or herself with assuring the patient that there is nothing really wrong with him or her, or to say that whatever symptoms the patient may have, they are merely "functional" - even when the symptoms the patient had were most debilitating. The approach of "diagnosis by exclusion" of organic impairments needed to be replaced with a new diagnostic thinking, where medical history, physical examination and laboratory studies were combined with personality studies to draw a fuller picture of what is the matter with the patient.

In clinical practice this approach meant, as the authors put it: "*If symptoms exist without a physical basis or, if physical disease fails to explain the symptoms completely, look for their meaning from the standpoint of behavior.*"<sup>365</sup> (italics original) The authors do not, however, explain what they exactly mean by behaviour in this context and it seems to fall on observing the clues the patient offers during clinical interview. But it is not to be sensitive only to the patient's behaviour but also to the language s/he uses when describing his or her symptoms. The authors write that when the patient says, for example, that s/he cannot swallow, that may hold symbolic significance denoting his or her life situation where there is something that s/he "cannot swallow".<sup>366</sup> A symptom such as this is a an indication that there may, following a Freudian approach, be tension of emotional origin which does not find an outlet by word or action but pushes its way out through some organ or organ system. This the authors call "organ language", or "symbolism of symptoms".<sup>367</sup>

In 1948 Alexander published, together with his close associate Thomas Morton French of the Chicago Psychoanalytic Institute, a compendium entitled *Studies in Psychosomatic Medicine. An Approach to the Cause and Treatment of Vegetative Disturbances*<sup>368</sup>, which is a collection of papers published previously in the Journal and in psychoanalytic and psychiatric periodicals. In the Introduction the authors presented the fundamental theoretical postulates of their approach:

1. “The disturbances of the vegetative functions are the result not of one but of a variety of etiological factors, Roughly, two categories of factors can be differentiated: organic and psychological. The vulnerability of an organ is determined by its hereditary constitution and by the environmental influences to which it has been exposed.
2. Organic factors must be studied and treated by somatic methods and emotional factors by psychological methods.
3. The relative importance of these two sets of factors varies from case to case within the same disease entity.
4. The attempt to single out certain diseases as psychosomatic is erroneous and futile. Every disease is psychosomatic because both psychological and somatic factors have a part in its cause and influence its course... We use the expression ‘psychosomatic’ exclusively as a methodological concept; it is a type of approach in medicine: a simultaneous study and treatment of psychological and somatic factors in their mutual *interrelation*. (Italics original)
5. The emotional constellations which contribute to the disturbances of the vegetative organs are for the most part specific. It cannot be said that any emotion disturbs the function of any organ, but rather that there is an intimate affinity between certain emotional states and certain vegetative functions...to establish [this] requires...systematic investigations with the help of psychoanalytic technique.”<sup>369</sup>

As for operational concepts Alexander and Morton divided the influence of psychological processes upon the functions of the body into three categories: 1) voluntary behaviour which is motivated by goals, 2) expressive innervations which discharge phenomena such as weeping, blushing, laughing and which are directed solely to relieve and express specific emotional tensions which are not motivated by any utilitarian goals as in the case of voluntary behavior, 3) vegetative responses to emotional states which are to meet conditions to which the organism is exposed, for example, fear that leads to fight or flight.<sup>370</sup>

Disturbances in voluntary behaviour and expressive innervations, such as psychoneuroses, behaviour disorders and psychoses, fall into the field of psychiatry, whereas the failure in the harmony between emotional states and vegetative responses belongs to the borderline between psychiatry and other medical specialities. The focus of the book is on these latter phenomena. Alexander writes: “Many vegetative disturbances are the result of chronic emotional conflict situations. If these disturbances last long enough they may lead to gross morphological changes (a peptic ulcer, irreversible hypertension etc.) in the affected organs.”<sup>371</sup>

Next year Alexander published another book *Psychosomatic Medicine - Its Principles and Applications*<sup>372</sup> which was, in Alexander’s words, “an outgrowth of an earlier publication, *The Medical Value of Psychoanalysis*<sup>373</sup>, published in 1936. The aim of the book was “to describe the basic concepts on which the psychosomatic approach in medicine is founded and to present the existing knowledge concerning the influence of psychological factors upon the functions of the body and their disturbances”.<sup>374</sup> For Alexander the basic postulate in this approach is that the psychological processes influencing physiological processes must be subjected to the same detailed scrutiny as is done in studies on physiological processes. It is not, therefore, enough to refer to emotions with general terms only, e.g. anxiety, but to reveal the actual content of the emotion with the methods of dynamic psychology and correlate them with physiological responses.<sup>375</sup> Furthermore, psychological processes are not, for Alexander, any different from other bodily processes. They are physiological processes and differ from other bodily phenomena only in that they can be subjectively perceived and communicated with other people.<sup>376</sup> The psychosomatic point of view for Alexander in medicine was, in short, that the human organism is an “integrated mechanism”.<sup>377</sup>

While it was Alexander who seemed to dominate the theoretical thinking of psychosomatic medicine within medical circles in the 1940s (to the extent of being invited onto a committee that developed the first edition of the Diagnostic and Statistical Manual for Mental Disorders<sup>378</sup>) it seems to be Dunbar who sold the idea to the general public with her book *Mind and Body: Psychosomatic Medicine*<sup>379</sup> published in 1947. The book was written in accessible and entertaining language to explain to laymen what psychosomatic medicine is all about and immediately became

a bestseller. After all, the USA was at the time recovering from the war and many if not most Americans were intimately familiar with bodily manifestations of various emotional strains, shocks and tensions. Dunbar's book went through several editions and even came out posthumously in an enlarged edition.<sup>380</sup> The popularity of Dunbar's book produced spin-offs such as *Your Child's Mind and Body – A Practical Guide for Parents*<sup>381</sup>, *Your Preteenager's Mind and Body*<sup>382</sup> and *Your Teenager's Mind and Body*<sup>383</sup>. Owing to its fame among the lay audience we may assume that it was Dunbar's views that shaped the popular American image of what psychosomatic medicine was all about and which eventually spread to Europe in the wake of other post-war American cultural influence. This makes Dunbar's book worth examining a little more closely even though it makes no pretence of being a work of science.

Dunbar opens her book with catchy lines: “This is a book about how people become patients. It is also a book about how they may get over being patients - when they do - and even how they can keep from becoming patients again.”<sup>384</sup> There follows a series of chapters with poetic titles such as *Delayed-Action Mines of Childhood*, *The Hygiene of a Quiet Mind* and *Half in Love with ...Death*, with which Dunbar joins the long tradition of American popular writing on health and well-being - a tradition which is today probably more flourishing than ever. There is, however, a clear theoretical rationale (faithful to Freudian theory) behind her novelistic style, which she expresses in the quotation below summarising the basic assumptions underlying the psychosomatic thinking in 1940s American medicine:

“This source [of disease] lies in the emotions of the individual, and in some obstacle to the efficient operation of those emotions...whose exposition was perhaps the greatest work of Sigmund Freud. It may be compared with the generally understood laws of physics relating to energy.

In the physical world, we know, no energy is ever lost. It may, however, go into other forms than man intended. It may be expressed in terms of heat or light or motion or chemical change. Thus a given unit of energy may become heat which in turn generates steam which runs an engine which operates machinery, and so on to the end of time. If blocked at any point – say at the point of generating steam – the unit of energy will not cease to exist; it will cause an explosion.

In the same way, what we might call emotional energy is never lost. It, too, can express itself in a variety of ways, and in some which man does not intend and may not even perceive.

But, as Freud was the first to point out in explicit terms, if usual channels of emotional discharge are blocked, it will be diverted into others which will turn it into a destructive and constricting force. Furthermore, Freud found, the amount of emotional energy, the force of its drive, will remain equal to the strength of the emotional impulse which originated it.

When the normal channels of emotion are blocked, we call it a repression. The emotion, turned from its logical course, will not be expressed, but will operate along new lines within the individual's personality and probably without his knowledge. Freud's great contribution was in explaining this process. He traced the emotion along its hidden paths, showing that if it could be brought to the surface and given an outlet in speech or action, it served its purpose, while it remained buried but still active in the individual's mind, it could be harmful even to his body. Later investigation shows that it creates an unbalance in the autonomous nervous system.

Since then we have learned that it can be more harmful than most of Freud's early admirers realized, although Freud himself recognized the implications of his discoveries in the physical as well as the emotional aspects of the human organism. The repressed emotional energy may very well transform itself into symptoms of physical illness.

Everyone has experienced in himself the changes of temperature or the rapidly altered operation of the sweat glands which result from a strong emotional stimulus. Most of us do not feel so acutely the chemical changes within ourselves under the same circumstances. Enough of these experiences, however, if they are turned out of their normal channels of action and talk, can add up to an internal physical change of the kind called an illness.

A neglected machine gets to the point where it is no longer an efficient transformer of energy. Such a machine may soon be beyond repair. The human emotional system can lose its efficiency in transforming emotional energy into desirable uses. If neglected or abused for too long, it too can suffer beyond repair."<sup>385</sup>

Dunbar's language is tempting in its everyday tone and in its common sense logic. There are deeper layers to be discerned, however. For Dunbar the origin of illness resides in childhood. An infant is a Lockean tabula rasa "...as sensitive as an unexposed photographic plate – and just as capable of discrimination...He begins to be able to incorporate the experience of others into his own body of knowledge."<sup>386</sup>

As a consequence even “the youngest infant can be infected with fear or anger or disgust or horror even more easily than with measles...They appear in little, homely ways long before they develop into major tragedies.”<sup>387</sup> In the aftermath of the World War II Dunbar chooses to use a metaphor “delayed-action mines of childhood” when discussing the effects of negative childhood experiences to one’s health in later life:

“...the harvest of childhood’s experiences may be repeated years later and turn out to be the fundamental or contributing cause of an illness which has no surface connection with the patient’s past. These are the delayed-action mines of childhood, planted either in the shock of some single incident or in the steady friction of a conflict between mind and environment. Once these mines have been planted, they may become covered over with a thick, hard crust of oblivion, but they never cease to be dangerous unless the fuses can be drawn.”<sup>388</sup>

And the fuses can be drawn:

“Somewhere along the line emotional energy has been diverted from its proper channel in the patient. The way out...at this point consists in finding the obstacle which blocked adequate expression of the patient’s emotions. In so doing, the physician removes the cause of the bodily ailment as well. This, in brief, is the aim and purpose of psychosomatic treatment.”<sup>389</sup>

While popularising the Freudian concepts Dunbar nourishes the still thriving idea among the general public that “the mother is to blame”, as, for example, in the case of asthma:

“There is a special pattern of mother-child relationship which seems quite constant in asthma cases, and also seems to be related to the nature of the disease...Asthma may be substituted to weeping...the child is not sure of his place in the mother’s life.”<sup>390</sup>

Furthermore, adding sex to the problem:

“...one of their [asthmatics’] most common difficulties is a sexual problem, often very closely related to the maternal...Their usual fear is that any expression of their [sexual] curiosity or any attempt to gratify the temptation will cause them to lose the maternal care of affection. As a rule, the mother

has contributed to this by completely avoiding talk of sex with the child or else making it appear shameful or evil or at best somewhat dirty.”<sup>391</sup>

Another strong message to deliver for the general audience was, again a still flourishing idea, that in cases where there is no manifest organic pathology to be found explaining a patient’s symptoms, “it is all in the mind”. Dunbar uses fresh experiences in military medicine to prove a point when she writes how

“The anxieties of some of these young officers affected the nerves in much the same way as a power dive. The result was a lack of oxygen for the retina, and a failure of vision... There is apparently some connection between the senses and the emotion which stems from the fact that all experience is gained through the senses. This connection is a factor in the selection of one of the senses when a bodily disorder seems necessary for the relief of the mind... The cause of the headache was in the mind, not in the eye..”<sup>392</sup>

We may summarise, at this point, that there seemed to be genuine enthusiasm within American medicine in the 1940s to explore the mind-body problem under the concept of psychosomatic medicine. It is noteworthy, however, that there seemed to be little or no critical discussion of the theoretical formulations in the first wave of psychosomatic writing. If there were any - and there must have been - they did not find their way to the Journal in that decade. After all, the basic theoretical problem in psychosomatic medicine, dualism vs. monism, could not have been thrown away with statements such as those presented by Dunbar in the book quoted above:

“The psychosomatic techniques of modern medicine help guide them toward the achievement of sound minds in sound bodies by recognising the fact that a human being consists of mind *and* body, now and forever, one and indivisible”.<sup>393</sup>(italics original)

To write in one sentence “mind *and* body” and to claim that they are “one and indivisible” is, to say the least, problematic. However, before moving to the critique of these formulations, a critique that was raising its head from the very outset of planning the Journal but which found its way into its pages only in the 1950s, we make brief excursion to see how the concept psychosomatic was received abroad after its introduction to US medical circles.

## A concept goes abroad

Psychosomatic as a concept was not confined to the USA since the psychosomatic approach in medicine also attracted attention in post-war Western Europe and Japan and also in many of the then-communist East European countries.

In Britain, a Scottish physician, James Halliday, had already published an article in *the British Medical Journal* in 1938 entitled *The rising incidence of psychosomatic illness*<sup>394</sup>. Halliday had been inspired by Dunbar's 1935 book while working as an intern on surgical and internal wards in Britain. He developed his ideas on psychosomatic medicine further in 1943 an article *Principles of etiology* published in the *British Journal of Medicine and Psychiatry*<sup>395</sup>. In the same year he published another paper in the *Lancet* entitled *The concept of psychosomatic affection*<sup>396</sup> and two years later he also made an appearance in the Journal with an article *The Incidence of Psychosomatic Affections in Britain*<sup>397</sup>. However, it was only after the World War II that psychosomatic medicine gained a foothold in Western Europe to the extent that there was enough momentum to arrange the first European meeting, held at Maudsley Hospital, London, in April 1955. In the following year the UK based *Society of Psychosomatic Research* was established together with the *Journal of Psychosomatic Research* with Dr. Denis Leigh as its Editor-in-Chief. The journal attracted writers from many European countries and also from the USA. In the editorial of the first number of the journal we read familiar lines:

“Psychosomatic medicine has as its objective the understanding of man, neither as an exclusively physical nor as an exclusive psychic being, but as an integrated totality. The term psychosomatic medicine is not altogether satisfactory, as it connotes a duality of body and mind rather than a body-mind unity. As yet, no satisfactory alternative term has been generally accepted to denote the modern conception of the field of psychosomatic medicine as comprising both body-mind unity and the organism-environment continuum... The paucity of factual knowledge concerning the interaction between *psyche* and *soma* in health and disease is the more conspicuous now because, as a result of the intensive work of the past half-century, our knowledge in both the psychic and somatic field has grown and deepened so considerably... The conviction that a suitable methodology is the first prerequisite for further advances in psychosomatic medicine in its present stage of development, is one of the main reasons why the editors have started this new journal and named it a journal of research”.<sup>398</sup>

Following the outline above, the Journal filled its pages exclusively with research reports. (The only exception was Georg Engel's visiting lecture in London on conceptual problems in psychosomatic medicine published in 1967<sup>399</sup>).

As we have seen in the foregoing, the early development of what was to become psychosomatic medicine has its intellectual roots in German medical and psychiatric thinking. In the 1930s many eminent German physicians, psychiatrists and psychoanalysts, of whom a considerable number had a Jewish background, fled the Nazi regime and emigrated to the USA bringing with them the intellectual seeds that ripened into what was to be American psychosomatic medicine. There developed, however, a psychosomatic strand of medicine of its own in the post-war Federal Republic of Germany. It seems, however, that the concept psychosomatic was coined for German medicine as a return mail from the USA after the war. The subsequent German approach to the psychosomatic issues built on the idea of consultation-liaison psychiatry (i.e. psychiatrists consulting general medical and surgical patients with psychological problems) that had developed in the USA. In 1950s the *Deutsche Gesellschaft für Psychotherapie und Tiefenpsychologie* (German Society for Psychotherapy and In-Depth Psychology) was renamed as the *Deutschen Gesellschaft für Psychotherapie, -Psychosomatik und Tiefenpsychologie* (German Society for Psychotherapy, Psychosomatics and In-Depth Psychology).<sup>400</sup> In 1974 the *Deutsches Kollegium für Psychosomatische Medizin* (German College of Psychosomatic Medicine) was established and it still publishes the journal *Psychotherapie, Psychosomatik, Medizinische Psychologie*. As the title suggests, the focus is on psychotherapy rather than on psychophysiological studies. This is apparent in the German psychosomatic literature as a whole, where the theoretical rationale has retained its psychoanalytic basis.<sup>401</sup> For example, the 2009 edition of *Psychosomatische Medizin* by Klussmann<sup>402</sup> uses psychoanalytic concepts as its background theory when discussing consultation-liaison issues in general medicine.

Psychosomatic medicine also gained a foothold in post-war Japan as a part of American cultural export. In Japan, too, the approach developed towards the consultation-liaison stream of psychosomatic thinking. *The Japanese Society of Psychosomatic Medicine* was established in 1959 and the first chair in the discipline

was established at the University of Kyushu in 1963 under the concept *Shinryou-naika* meaning, literally, psychotherapeutic internal medicine.<sup>403</sup>

Owing to the political tensions of the Soviet era, psychoanalysis was not officially in favour in any of the post-war Eastern European countries under communist regimes (even though the translation of Freud's *Interpretation of Dreams* into Russian in 1904 had been the first translation of Freud into any foreign language and was thus well known among Russian psychologists and psychiatrists). The situation became temporarily more relaxed in the Soviet block during the Khrushchev's regime (1953-1964) and several research projects were conducted in the USSR and other Soviet countries in the 1950s under the concept of corticovisceral physiology.

In 1964 an *International Symposium on Corticovisceral Physiology, Pathology and Therapy* was held in East Berlin together with Western researchers, among them E. Wittkower from Canada. In his presentation he stated that the difference between the Soviet and American approaches to psychosomatic studies was that when the latter ask why-questions on psychosomatic phenomena, the corticovisceral research presents how-questions on the mediating mechanisms between the brain and the rest of the body. Furthermore, while the Soviet approach was implemented mainly in laboratories experimenting with animals, American psychosomatists concentrated on humans in clinical settings. Yet, for Wittkower, clinical studies could be as scientific as laboratory experiments: why "listening to a patient should be less scientific than looking at him and recording biological reactions".<sup>404</sup>

To the best of my knowledge the first book written on psychosomatic medicine in any Scandinavian language appeared in Swedish in 1953 under the title *Psykosomatisk medicin*.<sup>405</sup> The author, a Danish psychiatrist, Paul J. Reiter, presented his book as an introduction to the subject and followed rather faithfully the psychoanalytic conception of what the concept psychosomatic implied. The first appearance of the term psychosomatic in Finnish medical discussions I have been able to trace is in an entry in the minutes of a meeting held in the Duodecim medical society in Helsinki on 20<sup>th</sup> April in 1950, where a panel discussion was conducted under the title *Psykosomaattinen yhteys* (the psychosomatic connection). Next year the term was

mentioned in a review article on chronic gastritis presenting the idea of anxiety as a possible cause for changes in the gastric mucosa.<sup>406</sup>

Despite the increasing international exchange of ideas between the researchers within the field of psychosomatic medicine, the theoretical momentum stayed firmly within the American medical community and especially the Society and the Journal. We now return to the USA and examine the criticism emerging on the conceptual foundations of psychosomatic medicine.

## Chapter 8 - Fundamentals questioned

Introducing the concept psychosomatic into medicine was not received with unqualified enthusiasm and even the early advocates of the concept were aware of the problems inherent in it. As Alexander wrote in his introductory essay in the first number of the Journal, the notion psychosomatic medicine “is not most fortunate because it may imply a dichotomy between psyche and body (soma).” He then attempted to overcome this dichotomy by suggesting that if “we understand psychic phenomena as nothing but the subjective aspect of certain bodily (brain) processes this dichotomy disappears”.<sup>407</sup> Prior to its publication Alexander’s paper was reviewed by Howard Liddell who pointed out that one cannot escape the mind-body problem by simply denying it.<sup>408</sup> Stanley Cobb had, in turn, reviewed the editorial for the same number of the Journal. He wrote in a pencil the word “awkward” in the margin of the manuscript (stored in the Archive) indicating the sentence “Emphasis is put on the thesis that there is no logical distinction between “mind and body”, physical and mental”.<sup>409</sup> When the editors stated that the Journal was not “concerned with the metaphysics of the mind-body problem”, it seems that Liddell and Cobb were more sensitive to ontological issues in the psychosomatic approach in medicine.

Since no papers were published in the first volumes of the Journal on any “metaphysical questions” we may try gain a glimpse of the debates taking place behind the scenes through some preserved correspondence between the editors of the Journal. In a letter to Dunbar of December 27, 1940, on rejecting a submitted manuscript *The Use of Psychological Tests in the Evaluation of Intellectual Function Following Head Injury*, Cobb addresses the conceptual ambiguities in using the term psychosomatic in medicine:

“...if we accept this, we are making a precedent of accepting all psychological papers that have anything to do with a lesion of the brain. That in my mind is not the meaning of ‘psychosomatic medicine’. At the meeting of the new society the other morning it was interesting to hear the varied use of the word ‘psychosomatic’. I believe that we ought to define exactly how we mean to use it. It is apparently used by some to mean only the skeletal and muscular system, whereas others use it to mean the former plus all the viscera. I do not know of anybody who looks on the brain as an organ to

which is applied to word ‘somatic’ ... ‘Organic impairment of intellectual function’ is simply misuse of words. An impairment of function may be due to a lesion of the organ, but the impairment of the function cannot be ‘organic’. We must keep this sort of confused thinking out of our journal especially.”<sup>410</sup> (underlinings original)

Alexander, in turn, seemed not to worry too much about theoretical controversies, as he expressed in a letter to Dunbar in November 21, 1942

“...I think that the merit of our Psychosomatic Society and Journal is that it has a great integrative effect. It includes representatives of different schools of thought and methods who are interested in the same problem – that of psychosomatic medicine.”

To give yet another glimpse of the debates behind the scenes we may quote a memorandum of a discussion between Dr. Dana W. Atchley and Miss Ruth Potter dated February 16, 1944 where the former is recorded as saying that

“...the term “Psychosomatic Medicine” has been used as a stimulative phrase and that it has no justification in itself...psychosomatic medicine actually is internal medicine...to speak of PM as if it were a branch of IM just doesn’t go. PM is a term used as propaganda for the purpose of stimulating interest...many people have worked for years and years from the PM approach but they have never given it a fancy name...the problem is a great one and should be handled carefully.”<sup>411</sup>

Reading the early issues of the Journal it is obvious, however, that whatever theoretical debates there were concerning the development of theory and concepts of psychosomatic medicine, they did not reach its pages. The published papers did concern themselves with presenting empirical studies where physiological measurements of various bodily processes were correlated with psychological evaluations. As a background to this correlative approach we may note that by the 1940s physiology had made remarkable progress in developing methods to measure changes in many bodily processes such as electric activity in the heart muscle (electrocardiogram), brain (electroencephalogram) and skin (galvanic skin responses). Measuring clinical variables such as blood pressure and body temperature was everyday routine. Rapidly expanding knowledge of hormonal processes also offered a whole new approach to understanding the human body in health and illness. A

common denominator for all these was that they shared the same theoretical and methodological basis in physiology, which was, in turn, based on chemistry, biochemistry and physics. While the soma could be approached in a theoretically and methodologically coherent way the problem resided in exploring the psyche.

### **Three psychologies**

Psychology as a science had developed in the latter half of the 19<sup>th</sup> century, emerging in Germany first as psychophysiology, where the object of inquiry was to find ways to analyse and correlate mental processes such as perception with the workings of the nervous system. That line of inquiry led to the quest to create a sound conceptual and methodological apparatus to evaluate subjective responses in relation to physical phenomena observed in the brain or peripheral nerves. As Franz Alexander had been trained in Europe, first as a physician and then as a psychiatrist during the formative years of psychology as an independent discipline, he was well informed about that world, as seen in a review he wrote on an article submitted to the Journal in 1938:

“The question of the possibility and desirability of translating psychological phenomena into the language of brain physiology was a characteristic point of discussion in nineteenth century German philosophy. It seems to us that recently the answer to this question has crystallized itself in the belief that the psychological content (personal emotional relationships and intellectual processes) will always be better understood in the language of psychology, even when they are more precisely correlated to brain processes. It is difficult to imagine that the intricate logical procedures which lead to the solution of a chess puzzle will ever be more adequately described in terms of physical chemistry or neuropsychology than in terms of those logical steps which lead to the solution. The same is true for the description of the intricate emotional processes which take place when a person laughs, hearing an anecdote, or weeps in the theatre...the importance and desirability of correlating psychological with neurophysiological processes, is obvious.”<sup>412</sup>

At the time of the writing the above the problem of correlating “psychological with neurophysiological processes” lay in how to gain knowledge of psychological phenomena to have something to correlate with physiological processes. Part of that problem was that in the 1930s American psychology was dominated by three rival and seemingly incompatible psychological schools, psychoanalysis, behaviourism and

animal psychology. The first had its own distinct theory and vocabulary, the second denied the possibility of gaining any direct knowledge of the psyche and concentrated, therefore, on observing behaviour, and the third attempted to gain understanding on the workings of the mind by experimenting with animals. The question was, how are these to be reconciled and brought under the heading psychosomatic in a theoretically productive way. Or should some of these approaches perhaps be chosen to substantiate psychosomatic research on the part of the psyche, as done by Alexander and Dunbar in their attempt to apply psychoanalysis as the tool to understand man's mind in relation to body?

### **A quest for conceptual clarity**

Despite the ambiguities in addressing man's psyche in psychosomatic relation there were only a few attempts in the Journal during its early years to address this basic conceptual problem in psychosomatic theory. The conceptual diversity in medicine in general was discussed by Caughey in an article titled *Cardiovascular Neurosis - Review* in the second number of the first volume of the Journal. Caughey listed concepts that were commonly used in medicine to denote patients' cardiac complaints, while there was no organic pathology to be found in their hearts or vessels. Among these we find terms such as cardiac psychoneurosis, irritable heart, disordered action of the heart, effort syndrome, neurocirculatory asthenia, all referring to more or less the same phenomena. (One may add to Caughey's list concepts such as Da Costa syndrome, neurocirculatory dystonia and soldier's heart, all of which still occur in the medical literature of our day.) For Caughey the question was whether these terms could be grouped under and dealt with one concept cardiovascular neurosis. The advantage of this solution would be, Caughey argued, that it emphasised the "dual nature of the problem, the cardiovascular component related to clinical medicine, and the neurosis component beyond the scope of a purely physiological analysis."<sup>413</sup>

Although the concept emotion held a central role in psychosomatic theorizing, there was only a single attempt in the Journal during its first decade to ascertain what was actually meant by the concept in psychosomatic theory or, for that matter, in medicine

in general. In 1945 Nina Bull, a then Research Associate in Psychiatry at Columbia University New York, took the “time-honoured partition” of dividing emotion into feeling (affect) and expression (behaviour) as her starting point in an article published in the Journal.<sup>414</sup> She argued that the “misconceptions and incomplete conceptions of emotion are not all due...to the vagueness with which the term ‘expression’ [of emotion] has been used, both by psychologists and people generally”. Rather, the problem was a matter of how the sequence from emotion to its expression can be conceptualised to offer a concrete basis for examining how inner conflicts may lead to psychosomatic symptoms. Bull’s paper did not, however, lead to any further discussions on this fundamental question for psychosomatic medicine on the pages of the Journal.

In 1941 Lawrence Kubie of the Department of Neuropsychiatry, Mount Sinai Hospital, New York, published an article in the Journal discussing the ambiguous use of the concept anxiety in medical literature.<sup>415</sup> Kubie wrote how in the everyday use the term anxiety denotes an emotional state irrespective of the circumstances that evoke it. In psychoanalytic theory the concept anxiety was used, however, in at least three different meanings, a symptom, a basic psychic force and a disease process. Kubie found this broad usage of the concept as confusing and distorting as if the concept fever were used in many different meanings in medicine.

The problem in using ill-defined concepts in psychosomatic theory was discussed by Paul in his paper *Implications of General Semantics for Psychosomatic Medicine*, published in the Journal in 1945.<sup>416</sup> Paul wrote how “psychosomatic medicine lacks psychosomatic terms. In reporting psychosomatic phenomena, there is the problem of ‘how to say it’”. He then offered a solution whereby general semantics may help psychosomatic researchers to find and analyse a proper theoretical vocabulary to address their object of inquiry in a theoretically coherent manner. In the same number of the Journal Squier suggested that one might try to solve the conceptual problems in using the term psychosomatic medicine by replacing it with the term integral medicine. This conceptual replacement, Squier asserted, might help physicians to rid themselves of the dichotomising thinking that is burdening the term psychosomatic.<sup>417</sup>

None of the few openings described above developed into any full-scale debates on conceptual issues in psychosomatic medicine in the Journal in its early years. In 1947, however, after stormy internal conflicts between the Society and the Journal as to how to divide finances and gain control, Dunbar was voted out of her post as editor-in-chief and her involvement with the Journal ceased. (The events and reasons leading to this coup are discussed in detail by Levenson<sup>418</sup> and need not concern us in this essay.) Carl Binger, then an Associate Professor in Clinical Psychiatry at Cornell Medical College, New York City, was appointed as the new Editor-in-Chief. In the March-April 1948 number an editorial note outlined the future policy of the Journal:

“In general, the Editors have little patience with rehashes of an obviously popular and propagandistic nature. The ‘patient as a whole’ theme has been sung long enough. Criteria for selection of manuscripts have emphasized originality, tightness of argument, careful documentation of facts, evidence, and sound logical inference...In our view the content of psychosomatic medicine should be greatly widened. We should try to go beyond the ulcer, hypertension, asthma round. We should try to get away from too exclusive an emphasis on etiology and so-called psychogenesis. *Anything that relates physiological and psychological phenomena seems to us germane.* Well documented observations of the association of phenomena in these two realms would appear to be a rich source of information and might contain guides for initiating new investigations.”<sup>419</sup> (italics original)

As the foregoing demonstrates, the Journal clung to the policy of avoiding theoretical manuscripts and in the issues to follow there appeared practically no papers dealing with conceptual issues. The main trends in the papers published so far had been building the psychosomatic theory on the basis of psychoanalytic observations and correlating physiological measures with psychological test results without any more profound theoretical concerns. The Freudian approach had, in turn, divided into two main approaches, Dunbar’s emphasis on the connection of certain personality traits with certain diseases and Alexander’s argument that the connection is not in the structure of the personality but in specific emotions regardless of the overall personality.

In 1950 Lhamon and Saul came to the defence of the latter approach in a short paper *A Note on Psychosomatic Correlations*.<sup>420</sup> They noted how the research conducted before the advent of psychoanalysis had been able to observe correlations between

emotional tensions and organic symptoms. In those studies the focus had been on constitutional and hereditary factors such as pyknic build disposed to hypertension and manic-depressive illness, whereas asthenic build was seen as prone to tuberculosis and schizophrenia. Among those early writers personality was seen as an entity and organic symptoms were correlated with the whole personality or personality profile. It was Freud, the authors argued, who was able to shed light on the deeper structure and function of man's mind and offer tools to differentiate between the different layers and workings of the psyche. In light of Freud's theory it is not the personality type which correlates with certain organic symptoms, such as duodenal ulcers, but a specific emotional force such as a frustrated longing for love which acts as a stimulus to the stomach. If that tension goes long enough unsolved, a disease ensues. Such a situation may occur in any individual regardless of the personality profile. Therefore, the shift of emphasis in psychosomatic studies is from the personality as an entity to specific emotions which may disturb the normal physiological functioning to the extent of causing structural changes in the body. The authors held that recognising specific emotional functions would help to narrow the gap between physiological and psychological data.

Dunbar's idea of a specific personality as a cause of illnesses was, thus, rejected in favour of Alexander's theory. While Dunbar's ideas became immensely popular among the public through her books, there was no room in the Journal for further development of her theoretical postulates and she made no more contributions. (The enlarged fourth edition of her 1935 book in 1954 was reprinted in 1976 in the series of *Classics in Psychiatry*. Dunbar died in 1959. )

Despite the editorial policy of focusing on empirical studies relating psychological and physiological phenomena "germane" to the Journal, occasional papers started to appear questioning the psychosomatic thinking of the time. In 1952 two articles were published in the same number of the Journal discussing conceptual problems in psychosomatic medicine. John Benjamin acknowledged in his article *Directions and Problems in Psychiatric Research*<sup>421</sup> that there was increasing exchange of ideas between those involved in scientific research and those specialising in the philosophy of science. This did not concern only those working in the mature sciences such as physics but also those in newer sciences such as biology and psychology. For

Benjamin it was not necessary for a scientist to be concerned with the problems of philosophy. That is, one may pursue sound scientific research without reflecting on the formal philosophical background of one's work. Yet, Benjamin noted, every scientist faces philosophical issues, such as the basic assumptions in the research programme, their meaning and logic. This is especially the case in psychiatric and psychological research owing to their interest in the total personality with its wide-ranging biological, social, anthropological etc. dimensions.

Following the tradition of American pragmatism, Benjamin claimed that a scientific concept is to be judged primarily by its usefulness. This led to the question, whether the concept total personality was useful as applied in psychosomatic research. From the point of view of applied medical science it had proven its value by helping to emphasise the emotional and physical factors in all illness in medical practice as well as in medical education. Benjamin concluded that whatever problems there had been with the concept of total personality, they had arisen not because the concept itself had been "fuzzy" but from its fuzzy usage in the medical literature. To clarify the situation Benjamin proposed an approach based on the newly inaugurated *general systems theory*. (Bertalanffy had published *An Outline for General Systems Theory* in the *British Journal for the Philosophy of Science* two years prior to Benjamin's paper.<sup>422</sup>)

Benjamin postulated that different levels of integrated organizations had emerged in the course of evolution. The properties of those layers cannot be fully understood or explained in terms of their parts alone since their structural organization affects the way they function. It follows that each organization must be studied by methods appropriate to it, and to it only, and not to any organizational levels below it. For example, in social psychology the behaviour of groups cannot be reduced to the sum of the behaviour of individual members. Yet, the study of an individual's psychological function is incomplete without considering the individual as a part of the group in which s/he functions. Therefore, the "person-as-a-whole" must also be studied as a "person-as-a-part".

Benjamin acknowledged that we cannot hope to explain or understand a person or a patient "fully". Our explanations depend, inevitably, on the explanatory system we

choose to use. In psychiatry one might assume, for example, that all mental diseases are diseases of the brain. One might alternatively assume that mental derangements are psychogenic and that they can be explained by reducing them to psychological processes. Benjamin held, however, that it is absurd to try to reduce clinical problems to any single cause, since there are endless chains of events and conditions where one may try to pinpoint the cause for the rest that follows. Such points are always arbitrary. Therefore, we cannot speak of psychogenesis in medicine as if it could fully explain the illness under investigation. Instead, we need to accept the idea of multiple causation when attempting to understand the problems of health and illness. This does not mean, however, that psychic events could not affect a patient's condition. The total personality concept can be used to deal with the psychological level of organization independently and to construct a non-reductionistic science of psychology. It also justifies efforts to study the interactions of psychological level with other levels of reality.

Benjamin's paper was subtitled as *Special Article* and included no bibliography, indicating that it was a requested article. Benjamin's opening was not, however, a random event. At time of the publication of his paper the ideas promoted by Benjamin were much discussed in the USA. For example, the Josiah M. Macy Foundation had initiated and financed a series of conferences 1946-1953<sup>423</sup> to develop new foundations for a general science of the human mind. The meetings were held on an invitation-only basis for leading American scientists active in fields of inquiry relevant to that initiative. Among those attending were the anthropologists Gregory Bateson and Margaret Mead and the psychiatrists Kurt Lewin and Lawrence Kubie, all of whom also published in the Journal. Benjamin is not mentioned in the list of participants of the conferences but his writing suggests, that he was well versed in the general development in the field.

Following Benjamin's article in the same number of the Journal Abraham Wikler discussed the problem of a monistic vs. dualistic approach in psychiatric theory<sup>424</sup>. For Wikler, the then current approach in psychiatry to mental disorders was dualistic in essence even though it was often argued that mind and body were not separable but form a single unit. This ambiguity in psychiatric theory formation resided, for Wikler, in poorly defined basic concepts such as psychic, functional and organic. In an

attempt to clarify the issue Wikler offered an approach to a monistic concept of the mind-body problem based on Spinoza's philosophy, where the universe is seen as an indivisible whole, substance, which possesses an infinite number of attributes. Man, like other objects in the universe, is another mode of those attributes. Concepts such as mind and body are frames of references used by Man. From the point of view of Spinoza's theory these concepts do not imply dualism since the unity of Substance is retained.

The implication for psychiatry in this approach is, for Wikler, that no frame of reference dealing with attributes is any more fundamental than any other and, this being so, they are not reducible to each other. It follows that using concepts derived from one theoretical system to evaluate data obtained by using another frame of reference, will only lead to confusion. For example, data derived from Rorschach testing cannot be claimed to define a person as schizophrenic since the definition of schizophrenia is clinical and based on another frame of reference. An EEG reading cannot be interpreted as epileptic since the concept epilepsy is derived from a set of clinical findings apart from any laboratory measurements. Likewise, one cannot test the validity of, say, psychoanalytic concepts such as id or ego by biochemical methods. The truth or validity of any theory is to be evaluated only by its degree of internal consistency and its capability to predict the future course of events.

Wikler concurred with Benjamin when he wrote that when determining the aetiology of any medical condition it is futile to try to find the cause for any of them since there is no objective point in any chain of events that we could name as The Cause without omitting other factors influencing the process, whether within the organism or in its environment in the course of time. Therefore, we cannot say that any illness is psychogenic. Wikler emphasized, that if we choose to speak of psychosomatic illnesses it should be made clear that the term does not imply any reference to the aetiology of that particular condition. To call a condition psychic or physiological is only to use a certain theoretical frame of reference to address a phenomenon. Wikler comes to the conclusion that treatment in psychiatry must be pragmatic since there are many frames of reference within which a condition can be described and none of them can empty the attributes of a phenomenon into its own conceptual framework.

Therefore, a multiple choice of treatments needs to be applied to restore the function of the organism to be able to perform in its environment.

Two years later, in 1954, Georg Engel drew attention in the Journal to the fact that while many if not most of those active in the field of psychosomatic medicine were ready to affirm that “all diseases are psychosomatic”, that seemed not to be reflected in the selection of diseases actually examined and papers published from the psychosomatic point of view.<sup>425</sup> Furthermore, in many of the papers published the term psychosomatic was equated with the term psychogenic. Those committed to discussing diseases of alleged psychogenic origin omitted cases presenting gross organic pathology such as malignant tumours. With the latter the interest was on a reverse process: the influence of cancer upon the patients’ psyche. Engel observed further, how the psychosomatic field had followed certain theoretical approaches in physiology, most notably Cannon’s emergency theory, Pavlov’s conditioned reflex physiology and the general adaptation syndrome proposed by Selye. On the psychological side psychosomatists had drawn heavily on Freudian concepts and ideas when addressing the psychological phenomena observed in the patients investigated. The problem in the contemporary state of research resided, for Engel, in the fact that there was no physiological theory as yet to be linked to fundamental psychological concepts such as mother-infant symbiotic unit, object relations, grief, separation etc. It followed, that there was much physiological speculation to be found in the literature published thus far with only few facts or theoretically fruitful approaches to follow.

In the early 1950’s critical voices were also raised in the books published on psychosomatic issues. In 1953 Roy Grinker, a Director of the Institute for Psychosomatic Research and Training in Chicago, published a critical review on then prevailing ideas on psychosomatic medicine entitled *Psychosomatic Research*.<sup>426</sup> In his book he acknowledged how the term psychosomatic medicine had become a part of the vocabulary for physicians and spread to the laity within a decade. (He assumed that this rapid acceptance of psychosomatic concepts was partly owing to the dire experiences for millions of men and women in the World War II). He then noted, that “little as we may now wish to preserve the word ‘psychosomatic’, which calls attention to, rather than denying, mind-body dichotomy, wide usage forces us to

preserve it as a symbol of contemporary concepts pertaining to transactions among psychological systems.” For Grinker the term psychosomatic denoted a conceptual approach to the relationship between psychology and physiology rather than to any new physiological or physiological theories.

Grinker’s main criticism of the contemporary psychosomatic studies was aimed partly at their often poor experimental quality. He noted how, for example, in Dunbar’s studies the material on which she had drawn her conclusions was not properly checked against a large group of healthier subjects or against sufferers from other psychosomatic syndromes.<sup>427</sup> On the other hand, many of the studies published had derived from the specialist interest of the researchers and the correlative studies were made without any coherent theoretical background assumptions. Grinker noted how “the theoretical formulations have arisen secondarily and therefore do not give the researcher or his readers a sense of completeness or adequacy... What is criticizable... is the failure of the investigators, working especially with unitary comprehensive concepts called psychosomatic, to identify their position and purposes as observers in relation to defined objects of study.”<sup>428</sup>

Grinker concluded that it might have been better to use the term *behavioral science* from the very dawn of the field of inquiry, instead of coining the term psychosomatic to denote a comprehensive approach to medical problems. On the whole, as Grinker wrote in the second edition of his book in 1961, “psychosomatic correlations in specific diseases were premature, and... greater knowledge concerning the general laws of psychophysiology should first be acquired from observations and experiments.”<sup>429</sup>

To give yet another example of the critical discussion emerging within the field of psychosomatic medicine in the early 1950s, let us consider a book *Recent Developments in Psychosomatic Medicine*<sup>430</sup> by Wittkower and Cleghorn, both professors of psychiatry at the McGill University, Canada. In their book the authors attempted to present a state-of-the-art summary of the activities in the field as they saw it. In the Foreword Ewen Cameron, Chairman of Psychiatry at the McGill wrote:

“Psychosomatic medicine is now being structuralized; it is old enough to have a history and to show signs of organization, so that some men can work on basic concepts, others on experimental techniques, and still others can pass from particular topics to general ones such as the specificity of psychosomatic process. As it comes of age and attains maturity and validity, psychosomatic medicine is becoming incorporated into the general body of medical knowledge available, as is our storehouse of facts concerning bacteriology and endocrinology, to all the other disciplines of medicine.”<sup>431</sup>

Accepting the commercial need for a positive tone in the Foreword of any book, there seems to be genuine optimism in the quotation above on the possibilities offered by psychosomatic approach to general medical theory. The editors of the compendium were more cautious, however, with the conceptual problems in psychosomatic medicine. In the opening chapter of the book they give an overview of then recent theoretical developments in the field and write, that they

“have come to the conclusion that most of the present-day theories are made up of permutations and combinations of a relatively small number of basic concepts, and that many of the apparently conflicting statements of various investigators can be reconciled whenever the reviewer is able to take up a position of observation sufficiently wide to enable him to examine the theoretical formulations of each school against a background of concepts common to all. However, it is apparent that there still remain a number of irreconcilable areas where the frame of reference utilized by one group of investigators remains far from identical with that used by others.”<sup>432</sup>

After reviewing the various theoretical positions of those active in the field, the authors divided them into two distinct groups, first, those who regarded each specific mind-body unit as permanently structured and capable of only reflex responses after been triggered into action by some stimulus and, second, those who maintained that all mind-body relationships are in a constant state of dynamic flux. In between these two fall those who borrowed from the first when explaining the relationship of the psychological symbol system to autonomic vegetative system in cases of organ neuroses or other psychosomatic disorders while using the dynamic approach of the second group to explain the clinical phenomena in cases such as conversion hysteria.<sup>433</sup> The authors concluded that no theoretician had been able to formulate the body-mind relationship to their day in terms that would be satisfactory to all. This was

inevitably hindering the building of any unitary theory in the field of psychosomatic medicine.

### **Fundamentals falling**

Following the theoretical discussions within psychosomatic medicine toward the end of the 1950s, it is apparent that Alexander's theoretical formulations based on Freudian concepts of repression and conversion were steadily losing ground. This development needs to be seen as part of wider doubts emerging within American psychiatry concerning psychoanalytic theory, especially concerning its scientific validity and therapeutic effectiveness.<sup>434</sup> For example, in 1956 Mendelson, Hirsch and Webber, of the Department of Psychiatry in the Dalhousie University, Canada, wrote another special article for the *Journal* joining those criticising current concepts used in psychosomatic theory<sup>435</sup>. They started by noting the central role of theoretical models in any scientific work in providing a conceptual framework for a scientist in his or her research activities. Theories and models are fruitful if they enable us to comprehend or predict or modify events. If the findings produced by research do not fit into the theory, the theory needs to be reformulated, as Freud did when adjusting his theory according to emerging new clinical observations.

Without mentioning Alexander directly, the authors noted that there is a danger that a scientific theory becomes a dogma and the sole aim of the research is to support the accepted theory. That can be seen to happen, according to the authors, in the field of psychosomatic medicine: "...it is beginning to appear that there has too long existed among psychosomatic writers an attitude that more closely resembles the devout believer's than the sceptical scientist's." After voicing their concern the authors took up the task of evaluating the basic concepts in psychosomatic literature. They concluded that while there had been many theoretical openings within the field of psychosomatic medicine, they had produced only new terms without a sound empirical and theoretical basis. The main flaws in the studies published were, first, a tendency to selection bias in clinical and physiological data to support a given point, second, frequent confusion between phenomenological description and aetiology. Third, there was a tendency to believe that there should be only one theory to explain

the aetiology of psychosomatic illnesses. There were also questionable theoretical assumptions such as considering parasympathetic hyperactivity synonymous with psychosomatic illness, or unproven claims such as psychoses and psychosomatic illnesses having a definite relationship.

In the following year, 1957, Arthur Mirsky was more explicit in his presidential address, when elected president of the Society. He wrote that there was no evidence whatsoever to support the idea that a long-lasting emotional conflict, as claimed by Alexander, should lead to any disease. He concluded that more scientific data was needed to replace dogma and more empirical observations were needed to replace “fanciful abstractions” in psychosomatic writing. Only then would psychosomatic medicine attain its goal and mature “into a truly comprehensive medicine”.<sup>436</sup>

The following year, in 1958, Brown joined the critics by presenting a view of a clinical psychologist to the psychosomatic research.<sup>437</sup> He lamented that “at the present time one has the impression that psychosomatic research has bogged down, fallen into a rut, turned toward the more substantial ‘physical’ bases of human behavior and slightly away from the intangibles of psychodynamics”. One reason for this was the disappointment with the idea of specificity, that is, that there should be clear connections between certain psychological elements to certain diseases or symptoms:

“We collected Rorschach protocols of a group of patients with duodenal ulcer and like little Jack Horner, pulled out a plum of a ‘pattern’ with our thumb. The plum turned sour and shrivelled when carefully controlled studies were made and a variety of relationships were found to be statistically insignificant, or disconcertingly significant only within the particular context of the experiment.”

For Brown, there was a need to accept the complexity of the human organism and abandon the hope of finding point-to-point connections between symptoms and personality especially when there is an urgent need to clarify even the basic concepts in psychology and psychiatry.

In 1961 Jurgen Ruesch of the University of California, San Francisco Medical School, broadened the overall perspective of psychosomatic theorizing by discussing the contribution of the behavioural sciences to psychosomatic medicine in a paper published in the *Journal*.<sup>438</sup> He noted how continental Europeans, being aware of the failures of the scientific methods, had disassociated themselves from the “dictates of physical science and adhered to the tradition of ‘Geisteswissenschaften’ and ‘sciences morales et politiques’”. An offshot of this development was more intuitive and holistic approaches to various types of existential philosophies and therapies. Americans, in turn, believed that “ten brains think better than one” and adhered to teamwork and to the “unity of science” principle. Following the latter, American psychosomatic medicine had relied, as we have seen, upon interdisciplinary methodology. There is an inherent problem in the latter approach, however. Whatever data are accumulated in interdisciplinary studies they are expressed in different conceptual vocabulary not translatable to another theoretical system. Even though the same words are used on occasion they may refer to totally different entities. This leads to conceptual difficulties when attempting to write a metatheory to merge the concepts and findings of different subdisciplines. Furthermore, when dealing with clinical studies, one is observing living people and their behaviour. In those studies the observer is always part of the system observed. Therefore, no universal and causal general laws can be contrived even in principle. Instead, they need to be expressed as (Ruesch draws here on Dewey and Bentley) transactions, that is, processes that are not causally related. The relationships of the human organism, whether to itself, to others or to its environment, can thus only be understood and interpreted. In consequence, writes Ruesch, “interdisciplinary researchers have to be content with the establishment of transactional relations which help in the understanding and interpretation of man and nature.”

Finally, in 1962 Franz Alexander responded to his critics in a long article published in the *Journal* (a paper originally presented at the International Congress for Psychotherapy in Vienna, Austria, in 1961)<sup>439</sup>. He started by acknowledging the need for collaboration between medical specialities when examining and treating patients with psychosomatic problems, (illustrating the observation made by Ruesch on the American ideal of teamwork). Alexander writes, that

“ideal collaboration between medical specialists and psychiatrists would require on the part of the organicists an understanding of the psychological components of chronic diseases, and on the part of the psychiatrists, an understanding of their organic implications. Mutual respect for each others’ contributions, which is so essential in teamwork, can only accrue from mutual understanding”.

Alexander then observed that such mutual understanding and respect existed in only a few sporadic medical centres, but the fact that there were even those few was, for Alexander, an indication of significant progress in modern medicine. After giving an overview of the different approaches to the mind-body issue in the history of medicine, Alexander clarified his theoretical position with regard to psychosomatic medicine. He distanced himself from the idea of monocausal aetiology or the specificity of aetiology of diseases in favour of multicausal explanations. In his early studies he had identified seven psychodynamic patterns in seven diseases, duodenal ulcer, ulcerative colitis, asthma, essential hypertension, rheumatoid arthritis, thyrotoxicosis and neurodermatitis. It was then shown that similar psychodynamic patterns could be demonstrated in patients with no sign of those diseases. Alexander had then modified his theory accordingly by postulating that those who actually had any one of those diseases had, in addition to their psychodynamic pattern, a specific organic vulnerability acquired in early life or which is genetically transmitted and that will develop to organic disturbances under the influence of specific emotional stress situations. This specific organ vulnerability Alexander had chosen to call the X factor. With these conceptual reformulations Alexander was, thus, attempting to save his original idea of psychogenicity and the specificity of aetiology. Alexander also modified his definition of the concept of neurosis from indicating overall psychological pathology to denoting phenomena occurring in certain contexts but not necessarily in all of man’s activities. Neurosis is thus not an absolute attribute of a person but it has meaning only when the life situation a person operates in is considered. This relativistic view of neurosis broadens therapeutic perspectives: “How can the discrepancy between personality structure and environment best be reconciled, by changing the person or by changing his environment.” The abstraction individual person also needs to be re-evaluated since a person can only be understood within the cultural field in which s/he develops and operates. To gain a comprehensive understanding of man we need to integrate the physiological,

psychological and sociological approaches. Man is to be addressed simultaneously as a biological organism, a personality and as a member of a social system. For Alexander, “neglecting any of these three parameters results in a distorted and operationally unsatisfactory personality theory and therapy”. With these sentences Alexander was anticipating Engel and the formation of the biopsychosocial theory of medicine. This article was to be Alexander’s last contribution to psychosomatic theory. He died two years later at the age of 73.

What was, then, the theoretical state of psychosomatic medicine at the time of Alexander’s death, after twenty five years of research under the concept psychosomatic and amidst the increasing number of critical voices heard from the scientific community on the use of the concept? In the next number of the Journal following Alexander’s paper Binger concluded in his farewell editorial, after having served as editor-in-chief of the Journal for fifteen years, that

“Psychosomatic medicine has not yet developed a unifying theoretical foundation. It is, at its best, a forum where men of different interests and training can meet with full recognition of the principle of multiple causality and without claiming special, proprietary or hierarchical rights. The vitality and viability of this journal will depend upon such a continuing combined effort to understand man in sickness and in health.”

We can get an idea of just how diverse and varied were the directions of development in psychosomatic theory - corresponding to those “different interests” - by returning to Kaufman and Heiman’s 1964 book referred to in the previous chapter. The editors had chosen to present anorexia nervosa as a paradigm to illustrate the development of psychosomatic theory in medicine. As the last chapter of their book they had chosen a reprint of Jules H. Masserman’s case study of a woman with severe anorexia, originally published in *The Psychoanalytic Quarterly* in 1941<sup>440</sup>, exemplifying the psychosomatic approach to the problem as Kaufman and Heiman saw it. After having analysed the patient with a Freudian approach Masserman had come to a conclusion that the patient’s organic dysfunctions

“are shown to be somatic manifestations of a highly complex personality disorder arising from severe early emotional conflicts, especially in the oral

sphere. The most important specific psychodynamism of the vomiting appears to be a symbolic rejection and restitution of the father's phallus, orally incorporated in an attempt to render exclusive her basic passive dependence on the mother; however, the symptom also expresses as aggressive attack on the thwarting parents, masochistic expiation and other psychic over- determinants."

In their concluding remarks Kaufman and Heiman stated that their choice of anorexia nervosa as a paradigm was "a happy one", since it presented the "integration and interrelationship of all the facets of psyche and soma". Yet, only a few paragraphs earlier they had written that "there [is no] universal agreement even on the tools of research in this field" and that they were still "in a period of collecting data and correlating new observations". They then continued their discussion by using concepts such as energy changes, defensive manoeuvres, homeostasis and adaptational balance, concepts that were derived from different psychoanalytic, psychological and physiological theories and used together in the very manner the critical voices quoted above had warned against. That is, uncritical mixing of concepts from different theoretical backgrounds can lead only to theoretical confusion. How was this theoretical disarray solved, if it was, in psychosomatic thinking? To explore the theoretical debates that followed, let us make a leap forward for another twenty-five years to the 50th anniversary issue of the Journal, which published Dr. Stanford Friedman's inaugural presentation when elected as a president of the Society in 1988.

## Chapter 9 - "...the very term *psychosomatic* has lost its meaning"

In his presentation Friedman estimated the current status of psychosomatic medicine as a field of scientific inquiry and declared that the "very term *psychosomatic* had lost its meaning".<sup>441</sup> (italics original) Given from such an important podium, Friedman's statement is odd enough to warrant closer examination and it may serve as our next point of departure in the quest to follow the life cycle of the concept psychosomatic in medical thinking. What, then, could Friedman possibly have meant when he denounced the very concept he had stood up to defend as the president of a scientific society? And how could the term psychosomatic have lost its meaning when it was recently given an entry of its own in the Oxford English Dictionary, the Society bearing the name psychosomatic was having its annual meeting as usual and several journals and books with the word psychosomatic in their titles had been published around the globe? Surely, despite the theoretical disarray of the field in the early 1960s, the term psychosomatic must have had a meaning at the time of Friedman's speech. A verbatim quote may shed light. Friedman writes:

"When I joined this society in 1962, the society's identity was clear. The organization represented the merger of mind and body, of behavior and disease, and of psychiatry and medicine. In particular, there was a scientific focus on the interactions of biologic and psychosocial factors in the etiology of disease...The American Psychosomatic Society was indeed a *scientific* organization...its goals were unique, with essentially no overlap with the objectives of other professional groups." (italics original)

Friedman wrote further that the problem with the psychosomatic approach of the day in medicine lay partly in its marginalization. Many of the issues the early researchers in the field had tackled had developed into subdisciplines with their own scientific societies and journals, concentrating on issues such as sleep, neurotransmitters, biofeedback, behavioural medicine, health psychology and so forth. What, then, was left for psychosomatic medicine to justify its existence as a scientific field of inquiry in its own right? Friedman tried to protect its boundaries by quoting the Society's *Mission Statement*, announced the previous year, that the essence of psychosomatic medicine was:

“To promote and advance the scientific understanding of the interrelationships among biological, psychological, behavioral, and social factors in human health and disease, and the integration of the fields of science that separately examine each, and to foster the application of this understanding to education and improved health care.”

It seems that for Friedman, and for the Society as a whole, the concept psychosomatic had become an umbrella term to embrace a vast field of medical enquiry and to attempt to integrate various approaches to human health and illness under a general concept. But, still, how and in what sense could the meaning of the term psychosomatic have been lost as Friedman claimed? He gives no definite answer to this in his presentation. I must therefore assume that, for Friedman, the term psychosomatic had lost its meaning not as a word but *as a scientific concept*. To support this assumption, I return to the 1960s to follow the development of the concept psychosomatic in medicine that led to Friedman’s pessimistic conclusion.

As already noted, there were two recurring themes in the early discussions on the concept of psychosomatic in medicine. While the word psychosomatic was offered by the proponents of the Journal to specifically denote the problem of the relation between emotions and bodily changes examined from the psychoanalytic viewpoint, the thought-collective - to use Fleck’s expression - that developed around that particular vein of medical inquiry was not able to maintain consensus on the theoretical content of the concept in the years to follow. It was eventually used to denote at least three different approaches to the mind-body issue in medicine. Psychosomatic was seen, first, as a field of research on the relation of emotions and bodily phenomena. Within that definition two methodological approaches to the problem under study developed, those using psychoanalysis as a tool to examine psychological processes in relation to physiological processes in one’s body, and those distancing themselves from psychoanalytic methods in favour of other psychological tools for their inquiries. Second, the concept psychosomatic was used as an adjective denoting the idea of psychosomatic illness. Again, two approaches developed, that of holding certain diseases as psychosomatic in essence (such as the famous “Chicago seven”: asthma, duodenal ulcer, essential hypertension, rheumatoid arthritis, thyrotoxicosis, ulcerative colitis and deurodermatitis) differentiated from those that were not, and second, that of seeing all illnesses (including even trauma in

some cases) as psychosomatic, emphasizing that there is always a psychological component present in all forms of human illness and injury.

The third use of the concept was aetiological, referring to the psychological cause of an illness in contrast to natural or accidental causes that have no psychological determinants whatsoever, even though psychological phenomena may be present and influence the ensuing illness processes.

As noted, the divergent use of the concept of psychosomatic was a constant problem for those writing on theoretical issues in psychosomatic medicine. Yet, in the 1960s there was still a strong sense among those active in the field of psychosomatic research that it had a sound scientific basis despite its conceptual ambiguities. For example, in 1966 Wittkower and Lipowski wrote that in the previous five years psychosomatic medicine had “continued to flourish as a science”.<sup>442</sup> They supported their claim with the fact that there had been a marked shift away from mere clinical observations toward experimental laboratory research and verification, revision or rejection of the theoretical concepts formulated and used in the course of research. This emerging new line of research was increasingly conducted by psychologists who tried to isolate objectively measurable personality variables and to evaluate them in relation to concomitant physiological phenomena. In the course of that development basic scientists had come to the fore leaving psychiatric clinicians, especially psychoanalysts, in the background. The authors predicted that psychosomatic medicine would be dominated more and more by psychophysiological research carried out by physiological psychologists, neurophysiologists, biochemists and “laboratory minded psychiatrists”. They also estimated that the particularly promising future areas of research would be conducted in laboratories “by means of meaningful sensory stimuli and by varying the total sensory input”. While experimental laboratory research would provide the basis for psychosomatic inquiry, which was particularly required was to explore how “symbolic processes result in somatic changes and how somatic processes result in symbolic consequences”. But what was also needed was, as Wittkower and Lipowski concluded their paper, “the application of the concepts of the philosophy of sciences to psychosomatic theorising”.

With those last two observations we are led back to the central problems in psychosomatic theory, the mind-body problem and conceptual clarity and coherence respectively.

### **In search of conceptual coherence**

After the abandonment of Dunbar's and Alexander's original formulations in the 1950s there seems to have been relatively little development on the theoretical level within psychosomatic medicine during the decade to follow. This is noteworthy, given that by the end of the 1960s, there had been hundreds of studies published in the *Journal* since its inauguration. As Edwards and Hill observe in the *Journal* in 1967: "Theoretical formulations of the physiological characteristics of an emotional response appear to have remained unchanged for perhaps the last half-century. None of the formulations is articulated with enough operational clarity to identify precisely their stance..."<sup>443</sup> The authors derive, however, three empirical observations from the studies published so far. First, it had become obvious that the bodily manifestation of fear is different than of anger, for example. Second, the effect of an emotion on a bodily process seems to depend more on the quantity than the quality of the emotion causing the observed physiological change in the body, as Cannon had demonstrated. Third, there seems to be an "idiosyncrasy of visceral patterns", a characteristic individual response to a particular emotional situation. There was, however, still a lack of a theory of emotions, which could weave these empirical observations into a comprehensive theoretical system. Yet, to promote and publish theoretical discussions in the *Journal* was not ranked high on the Society's agenda in the 1960s, as seen in a call for papers for the 27<sup>th</sup> Annual Meeting of the American Psychosomatic Society in 1969, there was no reference to theoretical issues whatsoever:

"It is essential for the Society to maintain a broad interdisciplinary representation within the basic central nervous system sciences, autonomic and endocrine regulatory physiology, as well as psychiatry, internal medicine, and related clinical sciences. It is clear that a balance of such diverse, interdependent approaches, both clinical and experimental, is uniquely required for the study of the central integrative mechanisms underlying psychosomatic disorders."<sup>444</sup>

The problem was not only in the lack of theoretical coherence, however, but also in the methodological complexity to study mind-body phenomena. David Kissen observed in a paper presented to the *Society for Psychosomatic Research* in London in 1968, that the object of inquiry in psychosomatic medicine, the relation of emotions to bodily changes, holds such an enormous amount of variables to consider that while even “in the very material world of physics and chemistry, replication and confirmation can be difficult, how much more so is this likely in clinical psychosomatic research”.<sup>445</sup> Kissen noted that “the results of scientific experiments are acceptable only when replicable or reproducible with constancy”. The problem with psychosomatic studies was, however, that “both psychological and personality data elicited in the course of carefully planned and controlled objective studies may be difficult to replicate with consistency sufficient to satisfy rigid scientific criteria. Doubt may then be cast on the validity of the findings.” The solution was, for Kissen, to accept the situation as unavoidable and accept that “the validity of a particular study may be quite acceptable within the context of that study.” While an individual measurement may be open to criticism in terms of validity, that may be overcome using several methods of measurement to cover the personality aspects or psychosocial factors from many different angles in relation to a disease under inquiry. Then “the *complementarity* of the several measures add considerably to validity”. (Italics original) Kissen does not, however, address the problem of conceptual consistency of the background theory in psychosomatic medicine but sees the problem residing solely in the complexity of the phenomena and methodology.

Another theme in the discussions published in the *Journal* in the late 60s and early 70s was the alleged stagnation of psychosomatic medicine. It seemed to those involved that despite the steady stream of empirical studies conducted and published in the field they were not able to offer medicine any new theoretical or practical tools. For example, John W. Mason of the Department of Neuroendocrinology, Walter Reed Army Institute of Research, shared Kissen’s concern discussed above in his presidential address to the Society in 1970, and asked: “Why has progress in our field been so limited? Is it just that, like all biologic research, psychosomatic research is incredibly complex and one must inevitably expect a slow rate of progress?”<sup>446</sup> As appropriate for a physician practising in a military hospital, Mason suggested that the way forward is to design sound “strategy, tactics, methods or the sheer magnitude of

the efforts employed". He then concentrated on "the logic behind strategy in psychosomatic research" and compressed the traditional approach in psychosomatic research into a formula

life situations -> emotions -> bodily disease

Mason called the above a "physiologic black box approach". That is, if the patient's problem is considered to be psychologic, then the appropriate solution is to bring a psychiatrist to the bedside leaving the mediating physiological mechanisms untouched. Now that the recent advances in the field of endocrinology had brought a new understanding of the mediating processes between emotions and bodily reactions, the physiological black box can and should be opened as an integral part of research strategy. Acknowledging that the approach in the natural sciences is analytic, that is, dissecting the phenomenon under inquiry into its smallest components, Mason held that the psychosomatic field represented an attempt at an integrative approach, to understand the human organism as a whole in its functions. The formula above needed, then, to be restructured as

life situations -> emotions/defences -> endocrine systems/autonomic nervous system -> cellular functions/body units -> bodily disease.

As illustrated in this revised formula, emotions were not, for Mason, the only mechanism relevant to psychological studies in psychosomatic research, but also physiological mechanisms and psychological defences need be taken into account. Here Mason adopted a Freudian concept without making any further reference to psychoanalysis, however. He treated defence as a general psychological concept and defined it as the "full range of mechanisms preventing, minimising, or counteracting emotional arousal".

Now that the rapidly developing research in human physiology was offering new means to understand mediating processes in the human organism, the problem of slow progress in psychosomatic research resided not so much in physiology but in the on-going disparity of psychological approaches. Mason writes:

“...the behavioral field represents a house divided against itself in a most irrational manner. Psychoanalytic theory in psychiatry, learning theory in clinical psychology, and conditioning theory in experimental psychology all proceed largely in separate worlds, each largely ignoring the insight provided by the other and, in fact, often assuming a competitive or defensive stance against each other”.

The solution was, for Mason, not to monopolize any one of those psychological theories but to “to use them all cooperatively and benefit from the combined strength” since “we must use all the valid conceptual and methodological approaches we have for all they are worth...”

Mason suggested that the way to proceed in psychosomatic studies would be to conduct intensive longitudinal studies on individual patients and to coordinate many different psychologic perspectives and methods together with physiological, notably endocrinological, approaches. The latter could provide to a “behaviorist” (sic) “an index of when physiologic homeostasis is disrupted”. Mason concluded, that from the scientific standpoint “the development of rational sciences of integrative physiology and integrative medicine seems to me to be our best hope in the long run...”

In 1972 a serious attempt was made to clear up the theoretical confusion within the field of psychosomatic medicine for good, when Lipowski, who was at the time a professor of psychiatry at the Dartmouth Medical School, USA, arranged a symposium at his University to evaluate the state of psychosomatic medicine. In that meeting it was realised that there was not a single book available reflecting

“the current state of psychosomatic medicine in all its important aspects, and that as a result, misconception about the field were perpetuated, the gap between research and clinical practice was still unbridged, and a grasp of the field as a whole was hard to attain.”<sup>447</sup>

To “remedy the situation” Lipowski and his co-workers assumed the task of editing a compendium to offer a comprehensive account of psychosomatic medicine as perceived in the early 1970s. The book was eventually published in 1977 and entitled *Psychosomatic Medicine. Current Trends and Clinical Applications*, consisting of 50

papers, many of which had previously been published as journal articles. Apart from theoretical accounts there were articles on psychophysiological problems, mediating mechanisms, clinical issues, epidemiological questions and animal studies.

In the Introduction Lipowski observed that “many workers of the field view the concept psychosomatic disorders as misleading, scientifically sterile, and obsolete”.<sup>448</sup> Yet, for Lipowski, “psychosomatic medicine is of necessity multidisciplinary” and, therefore, dependent on the “collaboration of representatives from a wide range of scientific disciplines, methodological approaches, and theoretical viewpoints”. The task of psychosomatic medicine was, for Lipowski, to work as an “integrator – to keep the field coherent in the face of an information avalanche”.<sup>449</sup> How this integration was to be achieved on the theoretical level, Lipowski did not, however, examine any more deeply. In the epilogue of the book Sidney Cobb raised the concern of the lack of “sound metatheory plus reliable and valid measures” within the field of psychosomatic medicine.<sup>450</sup> This had led to the “vague use of certain words that are central to our discipline”. He continued by noting, that “the dictionary is full of words with more than one meaning, and linguistic parallelism is everywhere. What is distressing is to *find scientific papers in which vague words are used without definition.*” (my italics). Cobb did not offer a solution to the problem, however, but briefly discussed the contents of some basic concepts used in psychosomatic literature as he saw them.

In the same year of the publication of the compendium Lipowski published an article in the *American Journal of Psychiatry*<sup>451</sup> entitled *Psychosomatic Medicine in the Seventies* discussing the state-of-the-art of psychosomatic medicine in the US. He opened his account by stating that

“Psychosomatic medicine as a scientific discipline and an approach to medical practice has staged a spectacular comeback. After seeming to be dormant, it is not extinct, for almost two decades, it is once more in the mainstream of contemporary medicine and thought.”

Whether the comeback was spectacular or not, is not our task to evaluate here. What interests us is Lipowski’s note that the

“confusion about the current state of psychosomatic medicine is widespread. Semantic ambiguities abound and impede meaningful communication... critics complain that psychosomatic medicine is an undefinable, overinclusive, and scientifically useless concept.”

He then observed that the current psychosomatic theory had been

“influenced by general systems and information theories, the doctrine of multicausality of somatic functions and behavior, notions of psychophysiological response specificity and activation, the theory of operant conditioning and self-control of visceral functions, the hypothesis of object loss as an antecedent of disease, and by the concepts of psychosocial stress, cognitive appraisal and meaning, individual susceptibility to disease, adaptation, coping, and feedback”.

With the help of these, he wrote, psychosomatic medicine “is far more diversified, scientifically rigorous, methodologically resourceful, and therapeutically relevant than ever before”. As psychosomatic medicine attempted to study and formulate explanatory hypotheses about the relationships between psychological, biological and social phenomena, it was justified, for Lipowski, to consider it as a science in its own right. The ultimate goal for psychosomatic medicine was to formulate hypotheses based on “neutral models superordinated to the conceptual systems of psychology and biology”, as Lipowski borrowed Bertalanffy’s expression. This approach was necessary, since otherwise “the gap between the mass of accruing data and our ability to evaluate and relate them to one another will grow steadily”.

Seven years later, in 1984, Lipowski returned to the issue of the meaning of the concept of psychosomatic in another paper published in the Journal entitled *What Does the Word “psychosomatic” Really Mean? A Historical and Semantic Inquiry*.<sup>452</sup> He started with an observation that the conceptual confusion within psychosomatic medicine persisted despite efforts to clarify the issue. The situation seemed to be getting even worse with the various connotations given to the term psychosomatic in contemporary discussions. After offering a historical account of the development and the use of the concept psychosomatic in medicine Lipowski came to the conclusion that

“There is an inherent problem with the link-up of the words ‘psychosomatic’ and ‘medicine’, since they belong, at least in part, to two distinct levels of abstraction and discourse. Medicine is concerned with the issues of health and disease. ‘Psychosomatic’, however, has a broader and more abstract connotation, one that touches on the problem of mind and body, and hence pertains to the views on the nature of man. When by somebody’s whim those two words became linked, confusion and ambiguity that perplex us to this day resulted. “

Lipowski suggested that to resolve the ambiguities in the use of the concept psychosomatic in medicine one needed to “clarify the meaning of its key terms, to delineate its scope, and to chart its development over time”.

With the above, Lipowski made two observations of importance in terms of this essay. First, he acknowledged the difficulties that ensue in scientific discussions from the adoption and amalgamation of concepts derived from disparate theoretical backgrounds. Second, the mind-body problem persisted as acute as ever in the attempt to understand the relationship between subjective experiences and objectively measurable bodily phenomena. It seems, then, that these two issues were the two main elements of the confusion Lipowski and others writing on theoretical problems in psychosomatic medicine were forced to face and acknowledge again and again.

### **Dualism revisited**

As seen in the foregoing, the early users of the concept psychosomatic were openly opposed to any “metaphysical speculations” on the mind-body problem. While they were determined to avoid any philosophical reflections on their position, they were, nevertheless, explicit in offering a monistic approach to the problem by stating that mind and body are the same and that there was “no logical distinction” between the two. For example, Stanley Cobb, when appointed the president of the Society in 1957,<sup>453</sup> announced that there was “no basic difference between physical and psychological phenomena”. Cobb held that if a series of phenomena are initiated by a symbolic stimulus, such as the spoken word, the stimuli and its consequences are all physical, depending on molecular changes in the body, especially in the brain. Mind is a

function of the brain as contraction is a function of a muscle and circulation is the movement of blood in the vascular system. Yet, Cobb asserted, even if we could build a computer with the same complexity as the brain, it could not function the way the brain does, that is, it could not feel emotions or make aesthetic or ethical judgements. Cobb did not, however, go any further into analysing why this should be so. He contented himself with noting that the brain is living whereas a computer is not. As for the psychosomatic endeavour as a whole, Cobb believed that its aim is to correlate findings from any field of medicine with psychological observations. He concluded that there was no need in medicine to look for specific causes for diseases but to conceive of health and disease as reactions of the human organism to the internal or external environment. Cobb was convinced that medicine of his time had accepted this “holistic” and “ecological” approach as a basis of its theoretical structure.

Unfortunately, the material I was able to retrieve from the Archives does not explicitly explain why Dunbar, Alexander and those following their approaches wished to adopt such a stern attitude of not reflecting upon their position on mind-body problem or to keep that discussion out of the Journal altogether. I need, therefore, to do some interpretative work on this issue.

The basic divide in the mind-body problem in psychosomatic writing seems not to reside in the question of the nature of the interaction between the two but between monism and dualism. The dualistic approach implies that we assume two distinct entities, mind and body acting on each other. That approach has two problems needing an explanation to satisfy any psychosomatic theory. First, if we consider mind to be a non-material entity, what is it, where is it and where does it come from? And second, how is the reciprocal effect between mind and body executed and mediated? Both of those questions fall outside of the realm of natural sciences since natural sciences deal only with bodily, material that is, phenomena by definition. It seems, then, that if one wishes to keep the problem of emotions and bodily changes within the realm of natural sciences, one cannot postulate a non-material mind but one has to address mind as a material entity similar to the rest of the body with “no logical distinction between the two”. The dualistic position is, thus, unacceptable compelling a monistic approach to the problem. However, in terms of natural scientific explanation the monistic position is also problematic. First, if mind and body were

truly the same, as the early advocates of psychosomatic theory claimed, why should there be a need for two different methodological approaches, psychological and physiological? Furthermore, if psychological phenomena are defined, as Alexander chose to do, as subjective perceptions of physiological events taking place within the body, one is postulating a subjective observer distinct from what is to be observed. What, then, distinguishes the observer from the observed, if we are dealing with one and the same phenomenon? None of the authors discussed thus far attempted to dig any deeper into that problem in the Journal or in their books.

A common answer to the problems embedded within the monistic approach has been to maintain that psychological and physiological are the same “as two sides of a coin”, as Graham, for example, expressed it in the Journal<sup>454</sup>. That explanation is plausible, indeed, if we examine a coin as a mere physical object; we can measure its weight, dimensions, mass and composition without any conceptual or methodological ambiguities when we use the concepts and methods of physics and chemistry for our measurements. But as soon as we attempt to define what makes that small, round and flat piece of metal *a coin* we realise that the concepts and methods of physics and chemistry cannot give us answers at all. In order for a piece of metal to be a coin it needs to have exchange value, which removes us from the realms of physics and chemistry because they do not deal with exchange values, or economic systems, or people’s behaviour when trading commodities or fancying numismatics. The value of a coin (numismatic valuations excluded) is expressed in the configurations printed on both sides of it. We can, of course, build a topographical description of those configurations using physico-mathematical methods. These, however, can offer only numerical and graphic presentations of the shapes on the surfaces but nothing more. Once we acknowledge, that tails expresses the value of a coin with a numerical symbol and heads the country issuing the coin with a cultural-historical symbol such as a silhouette of a sovereign, natural sciences can offer no conceptual or methodological tools to examine those facts any further. We need, therefore, to rely on social sciences and humanities if we wish to gain scientific understanding of the economic system in which that particular piece of metal was adopted as a medium of exchange at that particular historical time and place. Thus, to claim that mind and body are essentially the same as two sides of a coin cannot be sustained any more than claiming that a piece of metal, a silhouette of Queen Elisabeth II and an

engraving 10 p on the edges of that particular object are all essentially the same. They are the same in the sense that they are all constituents of a coin within a certain economic system, but they are not the same in their essence.

It seems that in denying dualism, the authors of psychosomatic literature were, in fact, denying only substance dualism while clinging, although implicitly, to what is called property dualism.<sup>455</sup> The first postulates psyche and soma as distinct substances and calls forth the question of the nature of the psyche as a non-material entity and also the question of its interaction with the body. According to the latter, psyche and soma are not different substances but they may be discerned as two phenomena occurring within the one and same object, as a coin having two sides with different figures. Their properties cannot be discerned within a single conceptual system alone and there is, therefore, a logical difference between the two, contrary to what Alexander and his followers sought to maintain. On the other hand, a great part of the psychosomatic research as published in the Journal can be seen as representing a functionalistic approach to the mind-body problem. That is, the focus is on examining and describing physiological pathways and functions from the brain to the rest of the body in different emotional states without postulating a psyche as an independent entity affecting the process.<sup>456</sup> The psyche is left to what psychological test patterns reveal when correlating the results thus obtained with physiological measurements. The core problem, however, in both property dualistic and functionalistic positions remains. What is the nature of the subject observing his or her emotions and their physiological manifestations and reporting them to the researchers? None of the authors within the early psychosomatic literature attempted to address this fundamental question.

I would maintain that clinging to the monistic position in psychosomatic writing while using either a property dualistic or functionalistic approach without reflecting upon the theoretical problems inherent in both of them fed the conceptual ambiguities and general frustration among those active in the field. That problem was not analysed in the Journal, but following the decline of psychoanalysis as the guiding theory in psychosomatic writing novel attempts to solve the mind-body problem in psychosomatic medicine started to emerge.

In 1964 Ludwig von Bertalanffy (1901-1972) published a paper in the *Journal* where he approached the mind-body problem as an empirical problem.<sup>457</sup> Because of the impact Bertalanffy had on the subsequent development in psychosomatic theorizing, we may examine his thinking at some length here.

Bertalanffy was an Austrian born biologist who, at the time of publishing in the *Journal*, was serving as a professor of theoretical biology at the University of Alberta, Departments of Psychology and Zoology. Bertalanffy's approach was based on his studies and ideas he had developed in biology since the late 1920s, known in the 1950s as General Systems Theory. In short, the basic tenets of the theory derive from the observations made in biology, where biological systems are seen as open in the sense that there is a constant exchange of matter and energy between an organism and its environment. It follows that organisms cannot be explained by reduction to chemical or physical theories because the latter are formulated studying events in closed systems where there is little or no interaction with their environment. Furthermore, an organism can be approached as a system of its own containing a number of subsystems. One can discern in those systems similar structures and functions. Bertalanffy chose to call such similarities isomorphisms. General systems theory attempts to identify and analyse isomorphisms in different systems, be they organisms, social systems or technological devices. The ultimate aim for the theory is, as Bertalanffy expressed it in his 1969 book, to bring "scientific interpretation and theory where previously there was none, and higher generality than that in the special sciences".<sup>458</sup>

In his 1964 paper Bertalanffy noted that although the question of mind-body problem belongs, traditionally, to the domain of philosophy and is discussed in terms of epistemology and metaphysics, it may also be approached as an empirical problem utilising the knowledge gained in modern biology, psychology, psychiatry, anthropology, linguistics etc. For Bertalanffy, psychosomatic is merely an expression for the mind-body problem in medicine. Yet, the attempts to solve the problem within contemporary psychological theories had not been successful since they held "an obsolete belief in the dualism of body and mind".

Bertalanffy took the view, that the problem had been cut in two in psychosomatic writing, matter-mind and brain-consciousness relations. Since all awareness is dependent on our bodies, and especially the brain, we may approach the problem as the relation between brain and consciousness. When studying the brain with natural scientific methods we speak of molecules, chemical reactions, electric currents and so on. We then pose the question, how do these events turn into subjective experiences? Conversely, how do subjective experiences, such as emotions, transform into bodily processes? The solution is not, for Bertalanffy, to claim that we approach a person as a psychophysical whole since within that statement there lingers Cartesian dualism. Instead of seeking a solution in traditional approaches, such as psychophysical parallelism, psychophysical interaction or identity theory, Bertalanffy states that the whole dualistic conception of man is in itself a result of long historical development. He claimed that the Cartesian conceptualisation of mind and matter, *res extensa* and *res cogitans*, does not hold in light of 20<sup>th</sup> century developments in physics, biology and behavioural sciences. What they offer are “conceptual constructs representing certain aspects of reality” and they cannot be reduced into one another, that is, concepts of psychology cannot be reduced into those of neurology, for example. Instead, when speaking of mental phenomena, we may discern and analyse isomorphism between the constructs of psychology and neurology. This does not mean that one should attempt to see similarity between psychological processes and brain physiology, nor to presuppose a resemblance between these two. What is needed, instead, is the “unification of physiological and psychological theory in constructs which are generalized with respect to both, and in this sense are neutral with respects to physics and psychology” and “superordinated” to both. Theoretical formulations such as these were already taking place in new fields of study such as cybernetics, information theory, general systems theory and game theory. Those formulations were “neither physical nor psychological, but are applicable to both fields...within which both physical and neurophysiological constructs appear as specifications”.

Bertalanffy's theory had a great impact among those writing on psychosomatic issues, as will be discussed soon. Meanwhile, in the 1970s the Journal still published few theoretical articles. Rose, for example, estimated in his analysis of the contents of the Journal from 1969 to 1980 that out of a total 536 articles only 36 could be considered

theoretical texts.<sup>459</sup> Of these we find only a couple addressing the mind-body issue in psychosomatic theory. For example, Weiner in his presidential address to the Society in 1972<sup>460</sup> addressed the problem of transduction of experience by the brain, claiming that the main question in psychosomatic medicine was “how is a psychological experience translated by the brain into a physiologic event?...Or, to put it another way, how does a nonmaterial process such as the emotional response to a stressful situation produce material changes, such as the elevation of urinary catecholamine levels or an increase in heart rate?” He did not, however, attempt to answer any of these questions. Instead, he moved on to present a detailed description of the then current knowledge on how the brain interacted with the rest of the body.

In 1977 Albert Silverman, a psychiatrist at the University of Michigan, touched upon the mind-body question in his presidential address to the Society.<sup>461</sup> He had observed that “many physicians feel uncomfortable in the presence of psychological phenomena, and even more uncomfortable in the presence of psychosomatic phenomena”. There was, however, “plenty of good, direct clinical and experimental evidence that psychological factors can influence the precipitation, the modulation, the exacerbation, and the outcomes of disease”. The problem resided, for Silverman, in the fact that a “fair amount of American medicine still seems in general not to want to join psyche and soma in any meaningful way”. What a meaningful way would consist of, Silverman does not tell, however. He formulated, instead, three major objects of inquiry for psychosomatic research: 1) “how does the brain transduce psychosocial input into neurophysiological data?” 2) “how do these data in turn lead to a behavioral response?” and 3) “what are the relationships between brain and peripheral physiology?”. While the last one of these questions “never leads to psychological distress among scientists”, the first two are the kind that are “difficult to fathom, and among many otherwise phlegmatic medical scientists, also a cause for distress.”

It is noteworthy in Silverman’s analysis, that he tried to overcome the problem of mind by using the expression psychosocial input. This input transfers, somehow, into behavioural response. How that transfer is mediated was “a cause for distress”, as Silverman put it, for scientists in the natural scientific realm. The problem of the black box, thus, persisted, as irritating as ever. But once we move from the mind-body

problem to the question of how the brain is connected to and acts with the rest of the body we physicians seem to feel we are on terra firma again. Why should this be so? The answer could well be in the latter case that we have a sound conceptual and methodological apparatus to address anatomic structures and physiological pathways, while we do not have such apparatus to tackle the mind in the mind-body problem, which remains there yet to be faced, whether we like it or not.

The mind-body problem in psychosomatic medicine was not merely a philosophical one, however, but it penetrated to the very core of medical thinking, the diagnostic classification we use in our attempts to categorise the multiplicity of phenomena we encounter in our everyday surgeries. In the next number of the *Journal* following Silverman's paper Lipp, Looney and Spitzer suggested that in order to reduce the conceptual ambiguity of psychosomatic disorders, one needs to rephrase the category of psychophysiological disorders as used in the prevailing psychiatric diagnostic system *Second Edition of the Diagnostic and Statistical Manual (DSM II)*.<sup>462</sup> The authors observed that in its at that time form one got an impression that there was, first, a class of diseases that are qualitatively different from other diseases. Second, it promoted an idea of single causation of a disease, that is, "a single psychological deficit while ignoring other relevant social intrapsychic and biological factors". And third, the DSM II referred only to causation while neglecting to describe how "psychological factors might either prolong or exacerbate a physical condition that had already been in existence". In a letter of response published right below Lipp et al.'s paper, Donald Oken stressed that any "linguistic systems (including nosologies) significantly shape the very conceptual processes they also express".<sup>463</sup> For Oken the term psychosomatic disease in "not only a redundancy but, by implying that nonpsychosomatic disease could exist, is dangerously misleading." One should speak only of psychological phenomena and avoid the use of the term psychic "since it suggests the supernatural – which our critics are all too prone to ascribe to our subject matter. It should be exorcised!"

In 1986 Bernard Engel recalled in his presidential address to the Society how the early psychosomatic medicine was based on psychoanalytic theory, which was, in turn, built on the idea that mental functions are separate from bodily functions.<sup>464</sup> It turned out, Engel claimed, that the psychoanalytic conceptualisations were faulty. The

contribution of that phase of development in psychosomatic medicine was, however, that physiology came to be seen as an integral part of behaviour, which made it possible for psychosomatic medicine to become a part of medicine. Engel maintained that the psychosomatic practice of the day was trying to move away from dualistic thinking and become more eclectic in its approach. Yet, Engel noted, there was still a strong tendency, especially among psychiatrists practising psychosomatic medicine, to rely on psychoanalytic concepts and, therefore, to resort to mentalism even when addressing pathophysiological or pathopsychological processes. Engel noted that attempts had been made to resolve the inherent dualism in psychosomatic thinking by replacing the concept psychosomatic medicine with the concept behavioural medicine. This attempt had been, however, “a complete failure” because

“instead of psychic cause of somatic disorders, we are told that disease is the result of an interaction between biologic (qua, organic) factors and behavioral (qua, mental) factors. Since interaction can occur between independently operating variables, biobehaviorism is simply a synonym for mind-body dualism”.

There were no novel attempts in the Journal to solve the mind-body problem or the prevailing conceptual ambiguities within psychosomatic medicine toward the late 1980s. We may then conclude, in light of the above, that Friedman’s lament for the loss of the meaning of the term psychosomatic in medicine was not based on the fact that the word itself had fallen into the obscurity and referred to only as a historical curiosity similar to terms such as dyscrasia, melancholia or phlegm. On the contrary, the term psychosomatic was perhaps better known than ever among medical profession as well as among the laity at the time of Friedman’s speech. The problem was that owing to the unsolved theoretical ambiguities and its varied use in medical literature the word psychosomatic could no longer serve as a scientific concept, that is, as a tool for scientific thinking.

Was that the end of the story? Not quite, since there were no signs that the Journal or the Society were about to be closed as remnants of times past. The Journal continued to publish papers on psychosomatic issues and the Society held its annual meetings as ever. There were, however, no noticeable attempts to resolve the controversies around the concept psychosomatic in the Journal during the years to follow. The papers

published concentrated mainly on empirical studies comparing psychological and physiological responses in various settings, as had long been the case. The discussion on the fate of psychosomatic medicine as a field of research in its own right continued, however. For example, in November 2000, Theodore M. Brown, a historian of medicine at the University of Rochester, gave a presentation to the New York Academy of Medicine titled *The Rise and Fall of American Psychosomatic Medicine*. In his paper he analysed the historical development of psychosomatic medicine from its very beginning to the end of the Millennium. He came to the conclusion that

“American psychosomatic medicine as a research field with a clear focus, optimistic outlook, and strong sense of clinical mission is *gone!*”<sup>465</sup> (italics original)

## Chapter 10 - “Praise Be to Psychosomatic Medicine”

Considering the activity around psychosomatic medicine at the turn of the millenium, Brown’s conclusion on the demise of the field seems somewhat premature. In 1999, just one year before Brown’s paper, Herbert Weiner had written an editorial to the Journal bearing the laudatory title *Praise Be to Psychosomatic Medicine* to celebrate the Journal’s 60<sup>th</sup> anniversary<sup>466</sup>. Weiner wrote how gratifying, and also somewhat surprising, it was to note that the field of psychosomatic medicine had survived and developed to that mature age. The strength of psychosomatic medicine resided, in Weiner’s opinion, in its integrative approach while assuming that “the Humpty-Dumpty of biomedicine will have been put together again”. For Weiner the integrative concepts and principles of psychosomatic medicine had become increasingly sophisticated during those six decades, concepts that would be needed “not only for theoretical reasons but to ensure the best patient care”.

How, then, in light of Weiner’s enthusiasm and considering the fact that there were perhaps more articles published in various scientific journals relating to the subject during the 1990s than ever before could Brown claim that the whole field was dead and gone? Was Brown simply wrong in his analysis? This is precisely what Dennis H. Novack claimed when he responded to Brown’s paper in his presidential address to the Society in 2003:

“Of course, we who belong to the APS know that Professor Brown’s conclusions could not be more wrong. The field of psychosomatic medicine is vibrant, exciting and young. With each annual meeting, and with each new issue of *Psychosomatic Medicine* (and other related journals), we learn of important new research that advances our understanding of how mind/brain/body and social context interact in health and in illness...I have been an active member of the American Psychosomatic Society since 1977. I have never experienced a more exciting time than the present in the variety and quality of the research presented at our meetings. There has never been a more propitious time for influencing the next generation of physician scientists and practitioners than now.”<sup>467</sup>

“Exciting, young, vibrant”. Not quite what Brown was claiming in burying the whole field. But only a decade prior to Brown’s conclusion was Friedman’s lament that the

very term psychosomatic had lost its meaning. How are we to understand this contradiction? To try to clarify the issue and to understand better why Friedman and Brown arrived at their pessimistic conclusions, I trace the fate of the concept psychosomatic in the midst of various new concepts flooding into the medical literature.

### **Concepts crowding in**

In 1977 Lipowski wrote in the article discussed earlier:

“...general systems and information theories, the doctrine of multicausality of somatic functions and behavior, notions of psychophysiological response specificity and activation, the theory of operant conditioning and self-control of visceral functions, the hypothesis of object loss as an antecedent of disease, and by the concepts of psychosocial stress, cognitive appraisal and meaning, individual susceptibility to disease, adaptation, coping, and feedback”.<sup>468</sup>  
(italics mine)

This short paragraph offers an impressive list of diverse theoretical concepts derived from different theoretical backgrounds used in the late 1970s to deal with the mind-body problem in medicine. By applying these concepts psychosomatic medicine was, for Lipowski, “far more diversified, scientifically rigorous, methodologically resourceful, and therapeutically relevant than ever before”. Let us now take a closer look at three of the new concepts introduced into the medical vocabulary in the 1970s because of their importance for the subsequent development of psychosomatic medicine, biopsychosocial, psychoneuroimmunology and behavioural medicine.

### **Biopsychosocial model**

In 1977 George Engel published an article in *Science* titled *The Need for a New Medical Model: A Challenge for Biomedicine* where he offered the concept biopsychosocial as a general approach for the problems of health and illness in medicine.<sup>469</sup>

Engel had joined the Rochester Medical School in 1944 and acquired an interest in the rapidly developing field of psychosomatic medicine. His first contribution to the Journal was in 1943 in the form of a book review<sup>470</sup> and his first scientific contribution in the Journal was a series of studies on syncope co-authored with John Romano in 1945<sup>471</sup>. He subsequently wrote more than twenty papers for the Journal and published dozens of other scientific articles elsewhere. He also served as a president of the Society In 1957.

Engel justified his conceptual initiative in *Science* by writing that “all medicine is in crisis...since ‘disease’ is defined in terms of somatic parameters”. It follows, for Engel, that because of the purely somatic definition of disease “physicians need not be concerned with psychosocial issues which lie outside medicine’s responsibility and authority”. Yet, the clinical data on an illness “requires a scientifically rational approach to behavioral and psychological data, for these are the terms in which most clinical phenomena are reported by patients”.

Engel based his idea on Bertalanffy’s general systems theory, which provided him with “a conceptual approach suitable not only for the proposed biopsychosocial concept of disease but also for studying disease and medical care as interrelated processes”. Engel postulated that with this approach it would be possible to analyse patients on different levels of organisation “as molecules, cells, organs, the organism, the person, the family, the society, or the biosphere”. This would treat “related events collectively as systems manifesting functions and properties on the specific level of the whole”. It would be possible, then, to discern isomorphisms between different systems “manifesting functions and properties on the specific level of the whole” and to develop “fundamental laws and principles that operate commonly at all levels of organization”. That approach would provide a “blueprint for research, a framework for teaching, and a design for action in the real world of health care”.

Why did Engel introduce another concept, biopsychosocial, into medical theory instead of resorting to the concept psychosomatic with which he had been strongly affiliated for so long? The question is more perplexing, when we consider that Lipowski’s definition of the concept psychosomatic, which was published in the American Journal of Psychiatry in the same year as Engel’s paper, is almost

indistinguishable from Engel's definition of the concept biopsychosocial.

Psychosomatic medicine was, for Lipowski, "a scientific discipline concerned with the study of the *relationships* of biological, psychological, and social determinants of health and disease...current psychosomatic theory has been influenced by general systems and information theories" etc.<sup>472</sup> (*Italics original*) Engel's answer was that

"Psychosomatic medicine – the term itself a vestige of dualism – became the medium whereby the gap between the two parallel but independent ideologies of medicine, the biological and psychological, was to be bridged. Its progress has been slow and halting, not only because of the extreme complexities intrinsic to the field itself, but also because of unremitting pressures, from within as well from without, to conform to scientific methodologies basically mechanistic in conception and inappropriate for many of the problems under study".

The time was thus ripe, Engel felt, to introduce the concept biopsychosocial to replace the concept psychosomatic because of the latter's narrow focus on the relationship between psychological and bodily issues only. With his new concept Engel was not only broadening the scope of medical inquiry to include social in medical theory on a conceptual level, but to bring the whole battery of concepts and methods of the social sciences into medical research. On the other hand, suggesting general systems theory as a basic theoretical apparatus for the endeavour helped to avoid the mind-body problem and to focus, instead, on finding isomorphisms between different "layers" of reality and, by doing so, hoping to gain deeper understanding of man and his or her illness.

Biopsychosocial as an approach was not, of course, solely Engel's invention. When the psychoanalytic basis of psychosomatic medicine was falling, articles broadening psychosomatic theory toward social and cultural issues appeared in the *Journal*. This development was part of the general development in the rapidly developing post-war American social sciences, where medicine was discovered as a field worth exploring as a social phenomenon both from the viewpoint of an individual and the society as a whole. The first signs of this development were seen in the *Journal* in the late 1940s when it started publishing articles such as *Anthropology and Psychosomatics*.<sup>473</sup> As of the 1950s there followed papers discussing the relation of life events, conditions and cultural contexts to somatic symptoms and diseases.<sup>474 475 476 477 478 479</sup>

The concept biopsychosocial was rapidly adopted into medical discussion. At the time of writing this essay in autumn 2009, Pub Med had more than 2200 entries since 1980, while the term psychosomatic has some 6300 entries for the same period. I also note here, that the concept found its way into the Finnish medical literature in the early 1990s in the form *biopsykososiaalinen*<sup>480</sup> and that the *Japanese Society of Psychosomatic Medicine* launched an online journal *BioPsychoSocial Medicine* as an official journal for their society in 2007.<sup>481</sup>

Biopsychosocial was not, however, a solitary intruder to the field of psychosomatic medicine claiming its territory. Other new concepts were finding their way into the medical vocabulary attempting to reconceptualise the psychosomatic approach.

### **Psychoneuroimmunology**

In 1980 Robert Ader presented in his presidential address to the Society that “...all disease are psychosomatic in the sense that they are ultimately subject to the regulatory influence of the brain as the sensor and interpreter of the psychosocial and physical environment.”<sup>482</sup> After that somewhat trivial observation with regard to psychosomatic theorizing, Ader noted that “in contrast to the commonly held notion...that the immune system is an autonomous defence mechanism, it can be argued that, like any other physiological system functioning in the interest of homeostasis, the immune system is sensitive to CNS activity. As such, the immune system stands as potential mediator of psychosomatic phenomena.” What Ader was referring to was the acute debate in medical research as to whether the immune system acted independently of the central nervous system or whether it was regulated by it. Ader favoured the latter explanation, since “there is now evidence that neuroendocrine factors can act to regulate or modulate immune reactions. These, then, can provide a link whereby psychosocial factors can be understood to play a role in influencing immune responses and processes of disease”. If such were the case, it was time to cast that observation into a new medical concept psychoneuroimmunology. Although this new field of scientific inquiry was still in its infancy and it “had not provided any definitive answers: it offers data for your consideration – and

possibilities...” Ader assumed, that psychoneuroimmunology would most likely develop into a research field of its own.

The formative process of this new field of inquiry dates back to the 1960s. In 1968 Mason had published a review article in the *Journal* on psychoendocrine research, where the focus was on the observable changes in endocrine functions in various emotional states. This rapidly expanding field of inquiry was organized into *an International Society of Psychoneuroendocrinology* in 1969.<sup>483</sup>

Meanwhile, another new field of research was developing, labelled as psychoimmunology and concerned with whether man’s emotions could have an effect on the immune system. Now that it had been demonstrated that these two seemingly separate systems were, in fact, acting jointly, it created another new field of enquiry calling for concepts of its own. Eventually, the *PsychoNeuroimmunology Research Society* was established in 1993. The aim of the society was to “bring together researchers in a number of scientific and medical disciplines including psychology, neurosciences, immunology, pharmacology, psychiatry, behavioral medicine, infectious diseases, endocrinology and rheumatology, who are interested in interactions between the nervous system and the immune system, and the relationship between behavior and health.”<sup>484</sup> It is noteworthy that while offering to act as an integrative society between various fields of inquiry (as psychosomatic medicine does), the statement does not mention the relationship between mind and body but that of “behavior and health.”

### **Behavioral medicine**

Behaviour as a concept appeared in the *Journal* in its very first issues underlining the strong position of behaviourism within American psychology. After the decline of the psychoanalytic approach as a background theory for psychosomatic studies, there was a theoretical vacuum to be filled and behaviourism was there to fill that gap. The aim of the behaviouristic approach was to identify certain behavioural patterns in patients that could be associated with certain somatic diseases. Behavioural studies gained a prominent role in the *Journal* during the decades to follow. For example, in 1964

Keith, Lown and Stare published a paper on studies on behaviour in relation to coronary heart disease.<sup>485</sup> The patients were examined by scaling their behavioural patterns without prior knowledge of the diseases (coronary heart disease, peptic ulcer and a control group). The main finding was that patients with coronary heart disease were more closely associated with what the authors called Behavioral Pattern A, a classification derived from the Friedman and Rosenman study *Association of specific overt behavior pattern with blood and cardiovascular findings* published in the JAMA in 1959.<sup>486</sup> The idea of so-called A and B-type behaviour in association with cardiovascular problems became immensely popular in the late 1970s and several articles discussing the topic were published in the Journal amounting to over one hundred papers on the issue to date.

In 1971 Beck published an article in *Behavioral Science* titled *Minimal requirements for a biobehavioral paradigm*.<sup>487</sup> Although Beck did not mention Bertalanffy, he grounded his approach on the “general systemic paradigm”. That paradigm could offer, Beck claimed, an opportunity to integrate fields such as evolutionary biology, neurophysiology, psychological learning theory and small group transactions in psychotherapy. The focus was on analysing behaviour and communicative patterns in relation to physiological phenomena ranging from group phenomena to an individual’s physiological processes with systems theory providing a general framework for this two-way analysis.

The concept biobehavioral found its way into the Journal in 1972 in an editorial, where Weiner presented the new editorial board. He wrote that “in...general areas of research in behavioral biology great advances are being and will continue to be made, and will provide a rational basis for our understanding of complex disease states of unknown etiology and pathogenesis”.

The concept of behavioral medicine was properly introduced in the Journal when in 1977 Schwarz and Weiss published a paper titled *What is Behavioral Medicine?*<sup>488</sup>. The authors explained the concept by noting that “...the evolution of the field of behavioral medicine...has drawn heavily on theories of learning...animal physiological psychology and human psychophysiology, and...from research in social and clinical psychology”. While, for the authors, psychosomatic medicine had

“traditionally emphasized etiology and pathogenesis of physical disease”, behavioural medicine “tended to be more directly concerned with behavioral approaches to the treatment and prevention of physical disease.” The authors noted, however, that there was still “little agreement regarding the definition and scope of behavioral medicine”. In an attempt to bring clarity to the issue they quoted the definition of the field as agreed upon at the *Yale Conference on Behavioral Medicine* that had taken place in 1977. In the Yale statement behavioral medicine was seen as “the field concerned with the development of behavioral-science knowledge and techniques relevant to the understanding of physical health and illness and the application of this knowledge and these techniques to diagnosis, prevention, treatment and rehabilitation.” Despite its theoretical ambiguities behavioral medicine as a concept was adopted widely and resulted in the establishing of the *Society of Behavioral Medicine* and the *Journal of Behavioral Medicine*. The concept biobehavioral, however, was scarcely mentioned in the Journal for almost three decades before it moved center stage in psychosomatic medicine.

### **Psychosomatic outmaneuvered**

By the end of the 1990s a whole variety of concepts can be found addressing the psychosomatic issue in medicine in articles published in the Journal, such as psychophysiology<sup>489</sup>, psychobiology<sup>490</sup>, psychoendocrinology<sup>491</sup>, psychoneuroendocrinology<sup>492</sup>, psychoimmunology<sup>493</sup>, psychoneuroimmunology<sup>494</sup>, biopsychosocial<sup>495</sup>, behavioral medicine<sup>496</sup> and biobehavioral<sup>497</sup>. Having all these new concepts claiming ground within the field of psychosomatic medicine, we may ask if there was any room left for the concept of psychosomatic in addressing the issue of “emotions and bodily changes” in medicine at the turn of the millenium, and if there was, what was its scope?

In 2001 Waldstein and co-workers published a paper in the Journal entitled *Teaching Psychosomatic (Biopsychosocial) medicine in United States Medical Schools: Survey Findings.*<sup>498</sup> It is noteworthy, first, that the title treated psychosomatic and biopsychosocial as interchangeable concepts. In the survey itself a questionnaire was sent to 118 US medical schools, of which 54 responded. Among those only every fifth

reported that their schools used the concept of psychosomatic medicine in their curriculum. As for the rest, the concepts behavioral medicine and biopsychosocial medicine were used more frequently. The authors concluded that

“Further incorporation of psychosomatic medicine in US medical school curricula is critical to the continued transition of medical field from a traditional biomedical model toward a biopsychosocial model with an increased emphasis on prevention and holistic evaluation and treatment of individuals. A biopsychosocial model can offer a scientific approach to the ‘art of medicine’ by emphasizing the importance of communication and the systematic consideration of psychosocial factors pertinent to patients’ health status, psychosomatic medicine could be considered the basic and clinical science of healing.”

Here, again, for the authors the concept of psychosomatic medicine is interchangeable with the concept of biopsychosocial medicine despite the fact that the latter denotes, according to Engel’s own definition, a substantially broader approach in medical research and treatment. This trend in treating the concept psychosomatic as interchangeable with other concepts can be seen in several papers published in the Journal since 2000. Finally, in January 2009, the first editorial for the 71<sup>st</sup> volume of the Journal acknowledged the problem of the ambiguous use of the term psychosomatic in medical and lay use:

“The term ‘psychosomatic’ has acquired a variety of meanings, and some of them quite negative. For example, a 1994 survey of newspapers in the United States and the United Kingdom found that, out of 215 articles in which the word ‘psychosomatic’ was mentioned 34% used it in a stigmatizing, pejorative manner; it often connotated a symptom or condition that was considered to be imaginary, unimportant, malingered, or due to a character flaw.”<sup>499</sup>

The authors felt, after having acknowledged the burdens the concept psychosomatic had gained during the previous 79 years, that the time was ripe to resolve this perennial problem of conceptual ambiguity in psychosomatic medicine once and for all. They suggested that the title of the Journal *Psychosomatic Medicine* needed to have a subtitle *Journal of Biobehavioral Medicine*. As for the definition for the latter, the authors resorted to Merriam-Webster’s Medical Dictionary and the American Heritage Medical Dictionary, which define the concept biobehavioral as “relating to,

or involving the interaction of behavior and biological processes” and “relating to the interrelationships among psychosocial, behavioral, and biological processes, as in the progression or treatment of a disease”, respectively.

The authors write that biobehavioral was “the best available adjective” since it covers “some of the best research we have been publishing, and the kind of articles we want to attract.” Furthermore, the concept “tends to connote a focus on observable or measurable independent variables, on surrogate (e.g., transient arrhythmia) or hard (e.g., myocardial infarction) medical outcomes, and on behavioral (e.g., non-adherence) or biological (e.g., inflammatory) mediators”. The editorial emphasized, that this decision had been made after long consideration and the final decision was left in the hands of the Society. But perhaps, the authors felt, “some day in the not-too-distant future, this journal may no longer be called *Psychosomatic Medicine*. It may eventually become *Biobehavioral Medicine*, or perhaps *The Journal of Biobehavioral Medicine*.” (italics original)

The long-standing conceptual problem in psychosomatic medicine, a monistic vs. dualistic approach to the mind-body issue, was finally solved with one swift stroke, eliminating the psyche from the equation and replacing it with the concept of behaviour. Since the conceptual shift in the Journal is still under way, we cannot at the present tell whether it will be the final farewell to the die-hard concept of psychosomatic in medicine as a scientific concept. It is obvious, however, that today the concept of psychosomatic does not hold the position in the scientific debates in medicine it used to have a half century ago.

## Chapter 11 - From scientific concept to everyday word

Having now followed the life-cycle of the concept psychosomatic in medical theory and research, let us now ask if the concept of psychosomatic serves as an example of conceptual development in medicine and if there is a developmental pattern to be discerned in the description above.

To answer the first question, whether the concept of psychosomatic stands as a token of conceptual development in medicine, we need to consider whether psychosomatic is, or was, indeed a scientific concept. This leads to the question of what do we actually mean by science.

Reading contemporary treatises on the philosophy of science shows that there is no agreement among writers as to what, ultimately, constitutes a science.<sup>500 501</sup> Bishop, for example, has listed eight different understandings of what science comprises:<sup>502</sup> 1) a mode of human activity to gain control over our environment and differentiated by practical crafts by being more systematic and reflective in its approach, 2) a body of theoretical knowledge providing understanding and explanations on why things are the way they are, 3) searching for universal laws that can be expressed in mathematical equations to discover, explain and predict natural phenomena. 4) as a particular set of procedures for exploring, testing and confirming hypotheses about nature, 5) a special way of knowing and justifying knowledge claims, 6) defined according its content, that is, science has a special ontology in its every particular field, 7) characterized by rigour, objectivity and precision in its methods and theoretical formulations contrasted with our everyday conceptions of nature and its phenomena, 8) science is what we consider to be science.

Despite these different, although somewhat overlapping definitions of science, we like to think that there must be consensus on some general principles that apply to all scientific fields regardless of their objects of inquiry and theoretical and methodological differences. For example, there is a consensus that science must be open, that is, the methods and results of a particular study need to be available to the whole scientific community. But there are research centres, e.g. within the military

and the big pharma, who surely consider themselves to be doing science but who are rather selective in disclosing their findings to outsiders. Another generally agreed requirement for science is that science is critical. But that again requires openness to have all the data accessible to be criticised and, as just noted, that is not self-evident. And even when the data is there readily available, we need mutual trust to accept that the data is correct and the basic procedures and reporting of the research were correct. That is, that the instruments used measured what they were supposed to measure, they were properly calibrated, the results were recorded correctly and so on. Yet, that trust has been violated only too often, as we have read in scientific journals exposing fraudulent research reports. And when those fundamentals are fulfilled to call an inquiry a science, philosophers of science pose ontological and epistemological questions, such as how we justify the choice of an approach to certain phenomena and on what grounds we claim that our methods generate valid and reliable knowledge about the phenomena examined. Here opinions vary widely but to discuss them further is, however, beyond the scope of this essay. (I may note here that the best definition for science I have heard so far states that a discipline must be science if it has a chair at the University - especially at the University of Helsinki.<sup>503</sup>)

In the apparent absence of absolute criteria presented by philosophers of science to define science, I will apply, for the purposes of this essay, the eighth definition number in the list above. That is, I shall adopt a sociological approach to the problem and ask how those involved with scientific research consider the essence of their trade to differ from non-science. The problem in this approach, however, is that scientists themselves seem to give different criteria for their work being scientific depending on the field they are working in. An anthropologist meets different criteria than a meteorologist simply because the objects of inquiry are different and thus the theories and methodologies they use must be different. Yet both like to think that they have met the scientific standards of their field *once they have their papers accepted for publication in a scientific journal*. We may hold, then, that the ultimate test for an inquiry to meet scientific criteria in a particular scientific field is acceptance for publication in a journal within that field. The criteria for a paper to be accepted for publication, in turn, are defined by those active in that particular area of research. The process has two stages, editorial selection and peer review, which evaluate whether

the paper submitted meets the scientific standards of the field of inquiry. This reasoning is circular, but it seems that the situation, too, indeed is circular.

There seems to be more to science, however, than just having one's paper published. If the criterion for science is what the scientific community considers to be a science, that is also expressed partly, and importantly, on the grounds of how research funding is allocated to scientists. That, in turn, is determined by scientists themselves, i.e. by those distinguished in their own fields and holding positions on various governmental committees and boards of trustees of private foundations dispensing funding to universities and research projects. This, again, is a circular conclusion. But, as we saw above, the situation seems to be circular in the sense that there are no absolute outside criteria to define science and that the scientific community itself establishes its own criteria for the scientificity of their trade.

Yet another criterion for defining a scientific inquiry is the grounds on which a scientific community, a university, recruits new members. That is decided, again, by those who have gained positions within the particular scientific field. Just looking at the long and painstaking process of appointing a professor for a vacant chair in a medical faculty is illustrative enough, at least in Finnish universities. This phenomenon may, I believe, be observed in many if not all other faculties and universities.

### **The scientific status of psychosomatic research**

Can we then consider the research conducted under the concept psychosomatic as scientific research in light of those three fundamentals described above, publishing policy, money allocation and recruitment process? Apparently yes. First, psychosomatic research was funded by prestigious foundations such as the Rockefeller and Josiah M. Macy. Second, the scientific community was self-elective in recruiting from among those active in various fields of medical research in established centres such as Harvard, Cornell and Johns Hopkins universities. As for publishing policy, let us examine more closely how those involved in medical publishing evaluated the scientific status of psychosomatic research. To find

representatives for this we may assume, that journals such as the *New England Journal of Medicine* (NEJM) and the *Journal of the American Medical Association* (JAMA) can be considered to be scientific journals (due if nothing else their impressive impact factors) and that the editors and peer reviewers that accept or reject papers submitted to those journals base their judgement on rigorous scientific criteria. How did they perceive the scientific status of psychosomatic studies? That question was answered in the *Great Debate* arranged at the 59<sup>th</sup> Annual Meeting of the *American Psychosomatic Society* in Monterey, California in 2001. (The transcriptions of the Debate were published in the Journal soon after the event.)

The main question in the debate was, whether or not it had been scientifically established that psychosocial interventions can improve clinical outcomes in organic disease. Those voting for were Neil Schneiderman, a professor of psychology at the University of Miami and Redford Williams, a professor of psychiatry, psychology and medicine at Duke University. Those opposed were Harvard Professor Emeritus Arnold Relman, a nephrologist and a former editor-in-chief of the *NEJM* 1977-1991 and Harvard Senior Lecturer Marcia Angell, a former editor-in-chief of the *NEJM* 1999-2000, after having served as executive editor for the journal for 21 years. The discussant of the debate was George Lundberg, professor of pathology at the University of Southern California, who had served as an editor of *JAMA* 1982-1999 and who was, at the time of the debate, the editor-in-chief of *MedScape*.

When reading through the transcripts we may make two observations of importance in terms of this essay. First, no questions whatsoever were posed by those opposing the motion of the debate, that psychosomatic studies were not scientific. The problem was, rather, whether the studies published in the field so far were good science and whether the results obtained were convincing and warranted further efforts.

As to the core issue in psychosomatic medicine, the mind-body problem, the opponents took a clear stand. Relman opens:

“...Dr Angell and I are not interested in a general debate about the ‘mind-body connection’. Mind is obviously a function of the brain and brain is obviously an integral part of the body...The mechanisms by which brain and

mind interact with the body may be debatable, but the fact of the connection is established and we do not doubt that.”<sup>504</sup>

The overall problem in psychosomatic medicine for Relman and Angell resided in whether there was “any good clinical evidence that psychological and social interventions can directly change the course of serious organic disease?”. By “directly” the debaters meant definite effects via some biological mechanisms rather than through changes in a patient’s behaviour, be that improved compliance with the treatment given or adopting a healthier diet, for example. The conclusion for the opponents was that according to the studies published so far there was no scientific evidence whatsoever to support the idea that any such direct effect exists. Yet, the opponents agreed, there is some evidence that it is worthwhile to try to influence the patients’ behaviour in order to restore health, evidence that warrants further and larger studies on the matter. For the hypothesis of a direct effect from mind/brain to the body affecting the course of a somatic disease in any way Relman concluded, that there is no convincing evidence as yet. He stated bluntly, “we just look at the data...what is the evidence...we must be driven by the evidence and the evidence must be credible...show us the numbers, deal with your data critically, get enough numbers, use appropriate controls, randomize where you can, then we will follow the evidence.” The question was not that the opponents were in any way “biased against studies of psychosocial interventions”, but that those studies must be “conducted rigorously”, as Relman closed his case. The opponents did not thus claim that the psychosomatic studies published so far were not scientific as such, but that many of them had methodological flaws. Therefore, in order to raise their scientific standard, they needed to be “more rigorous” in their design and interpretation of the data.

### **Concept deflated**

Apart from the question of the scientific status of psychosomatic studies there is another feature in the debate that is pertinent to this inquiry, a feature that was not directly addressed by the debaters, however. That is, although the debate was initiated by the Society, the concept psychosomatic was hardly mentioned in the transcribed version of the discussion. Instead, the participants resorted to using expressions such

as psychosocial factors and influence, and for the therapeutic measures the debaters did not refer to psychotherapy but to behavioral interventions. It is also noteworthy that when commenting on the great debate in the Journal in 2006, Freedland and co-workers observed that the debate, although of importance, had prompted next to no discussion in the five years elapsing since the debate took place.<sup>505</sup> The authors pointed out, that “the central issues [in psychosomatic medicine] are whether any form of emotional dysregulation has a causal role in any serious medical outcome, and if so, whether there is anything we can do about it”. The authors acknowledged that at that point in time one just could not know this for sure. More research was needed to resolve the issue, which was up to the “next generation of *biobehavioral* researchers” to do. (Italics mine).

Now that the debaters presumably more or less deliberately avoided the concept of psychosomatic in their discussion, we may ask what happened to the concept? Were Friedman and Brown right, after all, in their claims that the term psychosomatic had lost its meaning and that the whole field of psychosomatic medicine was gone? As seen in the above, the question boils down to two issues, conceptual ambiguity and the mind-body problem. As for the first, when psychoanalysis was abandoned as a ground theory for psychosomatic medicine, no other theory of mind was able to claim its position. That was, I would claim, the very crux of the confusion in the field since 1950s, as frequently lamented by those writing on conceptual problems in psychosomatic medicine. That is to say, that the confusion was not due to the methodology of the studies conducted, but to the conceptual structure of the whole psychosomatic endeavour, which had lost its explanatory principles for analysing the mind-body relation in medicine when psychoanalysis was out of favour. To try to replace psychoanalysis with principles derived from animal psychology (conditioning) and behaviorism (behavioral patterns) or physiology (stress) was of no avail since those substantially different approaches could not be brought within one coherent conceptual system and they all avoided the problem of mind in their theorizing. That confusion persisted for decades, eroding the concept of psychosomatic as a theoretical tool to advance research in the field.

The second conceptual problem was in addressing the mind-body relation itself. Retaining the concept of psychosomatic, even though it had lost its theoretical

referentials, and taking a monistic position in a dualistic research setting led to a further blunting of psychosomatic as a conceptual tool to a point that it eventually became useless in medical thinking. As Dr. Schneiderman stated in the debate, “it is not about mind-body issues. In my opinion, there is no room for mind-body dualism in the 21<sup>st</sup> century”. With that statement he implied, that the concept of psychosomatic cannot be used as a scientific concept, since it denotes dualism in its very structure as had been noted so many times before. The concept needed, therefore, to be replaced with a more appropriate one for the inquiry. The choice fell on the concept of biobehaviorism, since it allegedly does not have any reference to man’s psychic world whatsoever (although Bernard Engel saw it merely a disguise for dualism in his 1986 paper mentioned in Chapter 7). Thus at the turn of the millennium the time was deemed ripe to discard the old tool and seize a new one. By adopting the concept of biobehaviorism psyche was simply thrown out of the equation and the research focused on operationalising man’s behaviour and comparing the data so obtained to measurable changes in his or her physiology.

### **Life of a medical concept**

Let us now turn to the second question, is there a discernible pattern in the life-cycle of the concept of psychosomatic? Vygotsky claims in his essay *The Historical Meaning of the Crisis in Psychology*, that the development of scientific concepts goes through five distinctive stages.<sup>506</sup> In the first stage a new idea is introduced to a scientific discussion “which reforms the ordinary conception of the whole area of phenomena to which it refers.” In the case of the concept of psychosomatic in medicine, this stage consisted of the introduction of psychoanalysis to medicine, which reformed “the ordinary conception” of the area of phenomena to which it was applied, i.e. differentiating and understanding hysteric symptoms with novel concepts such as conversion and defence.

In the second stage, Vygotsky writes how

“the influence of these ideas spreads to adjacent areas. The idea is stretched out...to material that is broader than what it originally covered. The idea

itself (or its application) is changed in the process, it becomes formulated in a more abstract way. The link with the material that engendered it is more or less weakened, and it only continues to nourish the cogency of the new idea.”

In this stage Freud’s concept of conversion, which was originally intended to refer specifically to hysteric phenomena, was applied to somatic illnesses, i.e. “to material that is broader than what it originally covered”. Freud’s approach was, thus, taken from its original context to nourish “the cogency of the new idea”, as cast into the concept of psychosomatic in medicine.

In the third stage

“the idea controls more or less the whole discipline in which it originally arose...because the idea, as an explanatory principle, managed to take possession of the whole discipline...[and] adjusted to itself the concept on which the discipline was based, and now acts in concert with it.”

In this stage, covering the 1940s, psychoanalytic ideas, especially in the form of Alexander’s writing on conversion and specificity, controlled the field of newly established field psychosomatic medicine. The content of the concept psychosomatic became almost synonymous with Alexander’s theoretical formulations.

In the fourth stage of the process Vygotsky takes the view that

“the idea breaks away from the basic concept... - at least in the form of a project defended by a single school... - this very fact pushes the idea to develop further. The idea remains the explanatory principle until the time that it transcends the boundaries of the basic concept.”

As we have seen in the above, from the 1950s onwards Alexander’s formulations were questioned to the point of rejection and the concept of psychosomatic, eventually, broke away from psychoanalytic theory while remaining in use to denote the problem of the effect of the mind on the body, but seeking new theoretical content.

In the fifth and final stage of its development the idea expands to the point at which, as Vygotsky writes, “it may easily burst like soap-bubble...it enters a stage of struggle and negation which it now meets from all sides.” There had been, of course, voices opposed to the concept of psychosomatic from its very introduction, but that can be seen as a part of normal scientific debate. However, during the decades to follow, those clinging to the concept psychosomatic had to struggle their way through the negation which the concept met “from all sides”, as we have seen in the above. Eventually, the concept was pushed to its limits and reached the stage where it was abandoned and new concepts were introduced in its place. The original problem, “emotions and bodily changes”, was reformulated and reconceptualised as a biobehavioral problem. As Vygotsky concludes, “when the idea has entirely separated itself from the facts that engendered it, developed to its logical extremes, carried to its ultimate conclusions, generalized as far as possible...obscured by many later developments and very remote from its direct roots and the social causes that engendered it...does a particular idea change from a scientific fact into a fact of social life again”. Then, “new ways are being proposed to interpret this particular discovery and the related facts” and “an idea which revolutionizes the science...ceases to exist.”<sup>507</sup> Through this process the concept psychosomatic gradually lost its position as a scientific concept and it transformed to an everyday concept gaining its meaning, as everyday concepts do, according to the context it is used in everyday conversations and popular literature, without any fixed scientific content whatsoever.

While Vygotsky based his hypothesis on the development of scientific concepts on the conceptual development in psychology, it seems that it also applies to the development of the concept of psychosomatic in medicine. Whether the analysis above holds and whether Vygotsky’s developmental pattern can be discerned in the development of other medical concepts, let alone in other sciences, are questions falling to the realm of historiography as will be discussed shortly in more detail. As there are no other attempts, to my reading, to apply Vygotsky’s approach in analysing the conceptual development in medicine, or any other sciences for that matter, the analysis above needs to be seen as a preliminary and in need to be supported or falsified by re-analysis or using other scientific concepts for case studies. I do, however, assume that similar patterns may be discerned in the development of other medical concepts, such as hypnosis and tuberculosis as discussed above. In the case of

the former, Mesmer postulated that the phenomena he observed within the clinical encounter were caused by physical forces acting between the participants of the event. To deal with the phenomena on a theoretical level he had to introduce a conceptual system to structure and develop his hypothesis. The conceptual change from animal magnetism to hypnosis took place when the phenomena were suggested to be based not on any physical interference from physician to patient but on the properties of the patient's nervous system induced by the physician. This relocation of the phenomenon needed to be reconceptualised accordingly. Likewise, the explanatory principle of phthisis had long resided in dyscrasia of the blood producing nodules in the lungs. When the locus of the disease was relocated to the changes in the cellular structure of lung tissue, the disease was reconceptualised as tuberculosis. And when the mycobacterium was established as the *sine qua non* for tuberculosis, the explanatory principle was reconceptualised from dyscrasia to bacterial infection. Fleck made similar observations in his book when he followed the relocation and reconceptualisation of syphilis from foul blood to an infectious agent as the explanatory principle for the signs and symptoms of the disease. In all these cases a deeper analysis is needed to evaluate whether the stages presented by Vygotsky apply in their subsequent conceptual development.

It is noteworthy that a contemporary four-volume authoritative critical assessment of Vygotsky's legacy<sup>508</sup> does not address Vygotsky's hypothesis of conceptual development in science. The critical discussion on Vygotsky's thinking focuses mainly on his theory of the development of childhood cognition. In that discussion there are two arguments of interest in terms of the present essay. First, it had been argued that Vygotsky was concentrating too much on the development of language as a tool for human thinking while underestimating the importance of other sign systems for human cognition and communication.<sup>509</sup> This may be true when discussing the development of human thinking in general but since the focus in this essay is the nature, acquisition and use of theoretical concepts in medical thinking, there is, in my opinion, no need to delve here in the finer details of the development of childhood cognition. It had also been pointed out that the nature of sign function in human cognition is somewhat ambiguous in Vygotsky's theory.<sup>510</sup> Again, while that may be so, that does not bear any fundamental significance for the focus of this thesis, the role of theoretical concepts in medical thinking.

Before moving on from concepts in medical theory to the role of medical concepts in clinical practice, a few comments are appropriate to discuss the problems of medical historiography to clarify the approach adopted in this essay for a historical analysis.

### **Implications for medical historiography**

As emphasised in this essay, to understand the development of medicine through the use of its concepts we need to apply historical method in our inquiry. Since the unit of analysis is the nature and role of a medical concept in its historical context, we need to be cautious, as in any history writing, to avoid attributing our present ideas to concepts used in the past. It seems that this has not always been achieved in presentations on the history of medicine. For example, we often read sentences such as “Mesmer discovered hypnotism in the 1770”<sup>511</sup> and “hypnosis had been popularized...by Franz Mesmer”<sup>512</sup>. Even a recent dictionary of psychiatry states that Mesmer was the first “who gave a demonstration of hypnotism (animal magnetism) in Vienna”.<sup>513</sup> In light of historical evidence, this is not and cannot be so. Mesmer did not give demonstrations of hypnotism but of animal magnetism due to the sheer fact that the concept of hypnotism was not available at the time of his practice. Even more so, when we realise that the content of the concept of hypnosis is fundamentally incommensurable with the concept of animal magnetism. To ascribe hypnosis to Mesmer’s thinking is as groundless as to claim that those using hypnosis as a therapeutic tool today are, in fact, using animal magnetism in their practice. Likewise, when we speak of contagious diseases it would make no sense to our ancestors if we were to talk with them using concepts such as bacterial infection or immunity. And although the idea of the spread of a disease from one person to another has existed for ages (based on everyday observations), there was no conceptual apparatus available until the late 19<sup>th</sup> century to address the phenomenon in the sense we do in our contemporary medicine. It would also sound odd to us if some would claim in the case of an anaemic patient, that the problem is in the dyscrasia of the patient’s blood, even though the constitution of the patient’s blood is, in point of fact, flawed. All this underlines the importance of understanding the content of medical concepts when exploring the history of medical thinking. As scientific concepts cannot be transferred

from one theory to another, they cannot be moved around history without obscuring their theoretical content.

This also applies to writing about the development of psychosomatic medicine. Yet, we find articles entitled, for example, *Psychosomatic Medicine in the Nineteenth Century*<sup>514</sup>. In his paper the author uses the term psychosomatic denoting the mind-body problem in general and, in so doing, writing the term psychosomatic into the minds of those who had tackled the problem well before the introduction of the concept psychosomatic into medical theory. From the standpoint of this essay this not only erroneous but, and more importantly, it obscures our understanding of our predecessors' thinking when we attempt to discern the theoretical positions they held when addressing the mind-body problem in medicine. On the other hand, when Erwin Ackerknecht, a distinguished historian of medicine, wrote that "Psychosomatic medicine begins with the Greeks", he was quick to point out that "when it [psychosomatic medicine] is defined in terms of a partial, or sometimes total, psychogenesis of disease, account being taken of the possibilities of psychotherapy, the origins of psychosomatic medicine go back...in time." Why Ackerknecht took the trouble to explain his position when addressing the mind-body problem in medicine with the concept psychosomatic, instead of addressing the issue directly without this explanatory detour, he does not, however, divulge in his paper. To give yet another example of the blurry use of concepts when writing about the history of psychosomatic medicine, Edward Shorter lumps a whole lot of symptoms and ailments as addressed in medicine over the last two hundred years under the concept of psychosomatic in his book *From Paralysis to Fatigue – A History of Psychosomatic Illness in the Modern Era*.<sup>515</sup> For Shorter, a variety of symptoms qualify as psychosomatic long before the concept had come into use. This solution does not only impose our ideas on the minds of past generations of physicians but also on the minds of their patients. One may claim, of course, that Shorter used the term psychosomatic to refer to ill-defined symptoms and the mind-body problem in general without any theoretical assumptions whatsoever. This is not, however, the case. Shorter writes in the Preface of his book, that

“in psychosomatic illness the body's response to stress or unhappiness is orchestrated by the unconscious...no physical lesion of any kind exists and

the symptoms are literally psychogenic; that is to say, they arise in the mind...psychogenesis – the conversion of stress or psychological problems into physical symptoms – is one of the nature's basic mechanisms in mobilising the body to cope with mental distress."<sup>516</sup>

Psychosomatic, psychogenic, unconscious, stress, conversion, are all concepts loaded with theoretical assumptions, as we have seen in the discussion above. The problem is not that Shorter uses those concepts and definitions as the starting point for his inquiry, but in that he seems to take them as given, without a single hint of reflecting the theoretical assumptions embedded in his position. Some historians would, I assume, find that problematic, to say the least, for a historian who is writing about the history of anything.

## Chapter 12 - Concepts in medical thinking

Having examined the birth and life of the concept of psychosomatic in medicine, let us now look more closely at the instrumental role of concepts in medical thinking. While the nature and role of concepts in the development of medical theory remained somewhat superfluous in Fleck's analysis, it is of interest that Kuhn did come close to the idea of concepts as tools for scientific thinking in his theory of the development of science. Kuhn wrote that, when examining normal science, "we shall want...to describe...research as a strenuous and devoted attempt to force nature into the conceptual boxes supplied by professional education".<sup>517</sup> Here concepts appear not so much as tools but rather as moulds into which nature is squeezed in the course of research. A little later he writes, however, how "a paradigm can...insulate the [scientific] community from those socially important problems that are not reducible to the puzzle form, because they cannot be stated in terms of the *conceptual and instrumental tools the paradigm supplies*".<sup>518</sup> (Italics mine) While Kuhn's use of his central concept paradigm was somewhat ambiguous, here he sees it as constituted by concepts that are used as tools in scientific inquiry. Kuhn also acknowledged the concrete role of concepts in scientific research when he wrote that "if, for example, the student of Newtonian dynamics ever discovers the meaning of terms like 'force', 'mass', 'space', and 'time', he does so less from the incomplete though sometimes helpful definitions in his text than by observing and participating in the application of these concepts to problem-solution".<sup>519</sup> And, finally, Kuhn saw science as developing through the development of concepts:

"So long as the tools a paradigm supplies continue to prove capable of solving the problems it defines, science moves fastest and penetrates most deeply through confident employment of those tools. The reason is clear. As in manufacture so in science – retooling is an extravagance to be reserved for the occasion that demands it. The significance of crises is the indication they provide that an occasion for retooling has arrived."<sup>520</sup>

Despite occasionally equating paradigm with scientific concepts and seeing their instrumental role in the development of science, Kuhn did not develop his theory

further along that line of thinking, but stuck to his idea of paradigm changes through revolutions. Kuhn's concept of paradigm, however, is too broad and ill-defined to be used to analyse conceptual changes in medical theory. Also, Kuhn's concept of revolution is historically too crude to understand the theoretical development in medicine. As Latour has put it, "revolution is not an explanatory category in the history of medicine, since medicine is revolutionised constantly".<sup>521</sup>

The problem of not bringing the concept of concept to the fore in analysing scientific development may be partly owing, as Hampsher-Monk has suggested, to the lack of interest in conceptual history in the Anglophone world in general, where "anything as abstract as a 'concept' could [not] be a possible subject of primary historical investigation."<sup>522</sup> This, I suspect, may be owing to the ambiguous use of the concept of concept in English language referring simultaneously to an idea, word and notion, as noted in the Introduction. The problem of this broad understanding of concept is not, however, only semantic, but it is based on a more fundamental conception of the nature and role of concepts in our thinking. To illustrate this, let us examine how Paul Thagard, professor of philosophy at the University of Waterloo, Ontario, Canada, addresses the development of medical thinking in his book *How Scientists Explain Disease*<sup>523</sup>, published in 1999.

### **The concept of concept**

For Thagard, all scientific change takes place through "major changes in conceptual organization",<sup>524</sup> which involves more than merely adding new or modifying old concepts within the prevailing theory. These changes must be seen as simultaneous social and cognitive interactive processes. In this process the social cannot be reduced to the psychological and vice versa.<sup>525</sup> This is why, for Thagard, scientific development cannot be comprehended by either cognitive or sociological explanations alone; those approaches need to be integrated to gain a fuller picture of how scientific development takes place. He calls his approach Integrated Cognitive-Social Explanation Schema where "cognitive and social explanations of conceptual change can coexist".<sup>526</sup>

Thagard takes the representational theory of mind (RTM) as his background theory for addressing the nature and role of concepts in human thinking. RTM, in turn, has its roots in the development of cognitive science. The problem is, however, that there seems to be no consensus on what is meant with the concept of concept in RTM. That is, when trying to explain concepts as mental representations, it is the nature of those representations that remains controversial.<sup>527</sup>

Jerry Fodor, a professor of philosophy at Rutgers University and one of the main proponents of RTM, has criticised cognitive science for not taking seriously enough the fact that at the heart of cognitive science is the theory of concepts.<sup>528</sup> This can be seen in the fact that within RTM there are various understandings of the concept of concept such as definition, stereotype, prototype and abstraction of belief system.<sup>529</sup> Fodor writes, that “most of cognitive psychology, including the psychology of memory, perception, and reasoning, is about how we apply concepts. And most of the rest is how we acquire the concepts that we thus apply”.<sup>530</sup> As for the latter, RTM holds that some concepts are innate, belonging to the “primitive basis from which complex mental representations are constructed” whereas the rest are learned. There is no agreement, however, where to draw the line in between those two.<sup>531</sup>

I shall not go any deeper into the internal debates within cognitive science on this matter, but let us take a closer look at the issue of concept through Fodor’s approach to understand better the problem at hand. What interests us here is, first, that Fodor does not seem to differentiate between word and concept but treats them as interchangeable terms. Fodor writes, for example, that “I can’t...afford to agree that the content of the concept H<sub>2</sub>O is different from the content of the concept WATER.”<sup>532</sup> He does concede, however, that they can be seen as different concepts, words, that is. For us the latter concession does not suffice, since H<sub>2</sub>O and water are different not only as concepts/words but they are different precisely because their content is different. H<sub>2</sub>O is a theoretical concept based on the conceptual system used in chemistry and refers specifically to the atomistic structure of water within the theory and nothing more, whereas water is an everyday word which gains its meaning according to the context in which it is used. For example, in the Finnish language the expression “throwing water” (heittää vettä) the word water has different meanings when we are talking about a child playing on a beach than about a young gentleman

standing against a wall on his way home from a pub. We may say, then, that everyday concepts (terms, notions, words) are always open and polysemous, while scientific concepts, in order to be scientific concepts, need to be closed and monosemous as they gain meaning in relation to the theoretical system they are a part of and that only.

As to the acquisition of concepts, Fodor illustrates the process using a doorknob as an example. He writes: “DOORKNOB [as a concept] expresses a property that things have in virtue of their effects on us...*being a doorknob is just having the property that minds like ours reliably lock to in consequence of experience with typical doorknobs*”<sup>533</sup>. (Italics original). Furthermore, “Doorknobs [as things] are constituted *by their effects on our minds*”<sup>534</sup> (italics original). What is problematic in this approach is that this example takes doorknobs and minds, first, as ahistorical, passive and given and, second, it supposes that things have effects on our minds as such – echoing the Lockean idea of human mind as *tabula rasa*. In reality, for someone who has never seen a doorknob, and in the course of the history of humankind there have been many, the protuberance on a surface does not stand out as a doorknob through a mere reflection in our mind, that is, no physical impression upon the person’s sensory apparatus spontaneously creates a concept of doorknob in the mind (leaving aside the problem of word vs. concept vs. idea). In order for that to happen there needs to be, to start with, someone to show the person who has never seen a door that this is a door and this is how it works. That process can be readily observed in small children taking their first steps and being curious about everything around them and observing the way doors are used by others until they grow tall enough to reach the doorknob. That, in turn, leads those others to lock the doors to the places they do not want the children to go, adding to the child’s understanding of the function of the door and its knob.

When a child understands how the doorknob functions s/he may point to it with a finger when s/he wants the door to be opened. The pointing at the doorknob is a social event, that is, it is not for the doorknob but it is for the others. That moment is among the first steps of acquiring the sign function necessary for our communication. As the child matures s/he reaches a stage when s/he is able to acquire verbal signs through the interaction with others to add to the finger’s pointing at the door. “Toh”, uttered the one-year-old Valtteri the other day and pointed at the doorknob with his finger

when wanting me to open the door to my study. “Toh” is not Finnish (or any other language to my knowledge) but it still had enormous communicative power for me on that particular moment, while it would probably mean nothing to others not initiated to the context if I were to present the expression “toh” merely in a written form. Now that the boy has grown he has learned to say “avaa” (open). Yet, it will take some time for him learn, hopefully, the niceties of human communication, such as using the wording “ole hyvä” (please). This enlarges the semiotic function of his expression beyond a mere gesture (finger) or a single sound (toh) to a whole utterance (open the door, please) as a semiotic device in our communication. It seems, then, that although Fodor does refer to experience when describing concept acquisition he leaves the matter at that without penetrating into the actual experiential process which is, by necessity, dialogical and historical.

In light of the theoretical approach adopted in this essay the question of where to draw the line between innate and acquired concepts (even in the sense of ideas) is arbitrary. As a child cannot exist without continuous interaction with other people from the very moment s/he leaves the mother’s womb, it follows that it is practically impossible to differentiate what mental contents are innate and what are acquired during a child’s development. If we understand concept as an idea cast into a word (or other sign), we can safely claim that there are no innate concepts whatsoever but they are all acquired through social interaction.

Returning to Thagard, he asserts, when applying the RTM to the problem of medical concepts, that people “presumably have a mental representation for the concept bacteria that makes possible their use of the word bacteria.”<sup>535</sup> But Thagard does not go any deeper into how these mental representations come about as concepts. He writes, that “although representational accounts of conceptual change do not tell the whole story, there remains ample reason to describe conceptual change in part as change in mental representations...”<sup>536</sup> A full theory would, in turn, be able to “integrate...representational, referential and social aspects”<sup>537</sup> of conceptual change in science. I do agree with Thagard’s observation that RTM as a background theory is not able to do this. As Müller and Overton have noted, when discussing the problems in RTM, if a theory of knowing “treats the objectivity of the world as a priori given, insisting of precoded information, and if meaning is merely the processing and

storage of this information in different codes, then all empirical inquiry into transformational dimensions of cognitive development becomes marginalized.”<sup>538</sup> That is, the stimulus - computing - response schema is much too simple to understand the development, acquisition and use of concepts in human thinking and communication. Reducing thinking to a brain process, as done e.g. by Churchland<sup>539</sup>, is as problematic as to claim that it is the eye that sees or the ear that hears. The brain does not think any more than an eye does see or an ear does hear. All those organs are, obviously, necessary for seeing, hearing and thinking but none of them can perform these activities on their own. One needs only make a simple thought experiment to support this claim. Let us dissect from a newborn an eye, an ear and brain and put them in separate jars with nutrients to keep them biologically alive. Does the eye then see, or the ear hear, or the brain think? Indeed, what kind of thoughts would the dissected brain of a newborn develop if preserved, say, twenty years in a jar? We may conclude with reasonable safety, that none whatsoever. Brains do not think. People do.

The RTM schema is, thus, too simplistic to understand the nature and role of concepts in human thinking because it leaves out the necessary constituents of human cognition, that is, its sociohistorical determinants. This problem is also acknowledged by Thagard, when he calls for a theory that could “integrate...representational, referential and social aspects” to understand the development of medical thinking. When RTM could not help him to achieve this goal, he resorted to deriving and integrating explanations from psychological and sociological theories. As we saw in the history of the concept psychosomatic, such an integrative approach does not hold, since bringing together theoretical concepts from different disciplines only leads to conceptual disarray.

I have argued for the need to consider socio-historical context when explaining the role of concepts as tools for medical thinking in general. However when it comes to the medical consultation in particular, even this modification may prove insufficient for a full understanding. Let us, then, analyse the features of clinical communication in greater detail and see whether this is the case.

## Clinical dialogue

Mikael Leiman, a professor of psychology at the University of Joensuu, Finland, has studied clinical dialogue in a psychotherapeutic context and developed Vygotsky's theory of the instrumental role of language in human communication toward a more semiotic and dialogic understanding of the issue under a rubric sign-mediated activity theory.<sup>540 541</sup> When analysing psychotherapeutic dialogues Leiman drew on the Soviet Russian philosophers of language Valentin Voloshinov and Mihail Bakhtin, who were the main protagonists of the so-called Leningrad circle<sup>542</sup>, a group of scholars active at the time Vygotsky was conducting his studies on childhood development.

Valentin Voloshinov (1895-1936) introduced a theory of cognition in his book *Marksizm I filosofija jazyka* (published in Russia in 1929, English translation in 1973 *Marxism and the Philosophy of Language*<sup>543</sup>) where human communication is seen as a sign-mediated semiotic phenomenon. For Voloshinov, human consciousness emerges, develops and takes shape through sign processes. Anything that exists has the potential to be used as a sign, that is, to mediate meaning between itself and that which it represents.<sup>544</sup> Signs emerge within inter-individual communicative processes where communication is mediated by physical means of gestures, expressions, intonations, voices etc. An individual consciousness operates by the signs available in the particular time and place the individual lives.

For Voloshinov, an uttered word is a sign par excellence. He concurs with Vygotsky when noting that a word as a physical sound composition has no meaning by itself but acquires meaning only through social interaction. Through this interaction a word becomes not only a mediator of interpersonal communication but also acts as a mediator of the individual's inner communication, his inner speech. Our thoughts are mediated by words and the act of thinking is, essentially, an act of inner dialogue.<sup>545</sup>

A word is not, however, imbued only with a specific and closed dictionary-like meaning referring to some constant phenomenon. Instead, it resides in a continuous stream of denotations and connotations depending upon the context of the utterance taking place within a dialogue between individuals. It follows that no language is

stable, unchangeable or closed as a system. It is, instead, a continuously generative and open process implemented in the social-verbal interaction of the people who use the language for their everyday communication.<sup>546</sup>

Sharing Voloshinov's idea of the socially developed sign-mediation of meaning Mikhail Bakhtin emphasised, that what is expressed by one to the other contains not only the referential object (that which is spoken about) but the expression is simultaneously modified by the anticipation of the other. As Bakhtin notes in his study on Dostoevsky:

“dialogue... is directed both toward the referential object of speech...and...toward another discourse, toward someone else's speech...by taking it into account, responding to it, anticipating it...The individual manner in which a person structures his own speech is determined to a significant degree by his peculiar awareness of another's words, and by his means for reacting to them.”<sup>547</sup>

Applied to a clinical context this means that when a patient tells the reason s/he is visiting the physician s/he is not only reporting his or her problem as a neutral phenomenon to a neutral listener; the patient's utterance is modified according to how s/he anticipates the physician's expectations and possible responses in that particular situation.

This anticipatory feature in human communication is not confined only to clinical situations, of course, but it is present in all communicative acts be they conversations, speeches or written accounts such as this essay. That is, when writing an article, say, to a medical journal, the author anticipates the forum and audience when expressing his or her ideas and formulates them accordingly.

To give an everyday example of anticipation in a professional conversation, let us picture a car repairman who is listening to his client's account of a strange noise in the rear when driving. When explaining the problem the client anticipates what s/he thinks is the appropriate way to explain the problem to the repairman to be sure he understands what is wrong. When the repairman listens to the client's explanation he listens to it in light of what he knows about the structure and function of cars and the

possible reasons for such a sound to appear when driving. The problem is rarely solved by only listening to the client's description, however. Questions are needed, and when the repairman modifies his questions he is simultaneously anticipating the client. That is, his expressions are different if he is conversing with a fragile old nun with her first and only -71 Morris or with a young businessman with a brand new BMW. And if the repairman anticipates the client erroneously, the encounter may fail. Indeed, it would probably be damaging to the customer relationship if the repairman were to start asking questions about the car owner's marital life when mounting the bolts. On the other hand, if the car is in a seriously neglected condition and the owner does not look any better, it might be anticipatory for the repairman to consider the owner's ability to maintain a car, let alone to drive it.

The similarities of the problems of car repairmen and physicians when dealing with their clients and patients are obvious; both engage in a dialogical relation with the other when discussing the referential object (odd sound in the rear when driving, pain in the left knee when walking). This dialogical relation is constituted not only by reacting to verbal stimuli sent by the other, but by anticipating the possible responses of the other *in advance* and formulating one's utterances and gestures accordingly. Our modes of anticipation are there a priori, gained through education and experience with others, in both professional and domestic life. Indeed, what we in medicine call a "clinical eye" is largely the ability to anticipate the other in order to formulate the right questions at the right moments for the right patients to be able draw right conclusions, a cognitive process familiar to us in many detective stories such as those written by Conan Doyle and what Peirce calls abduction.<sup>548</sup>

The problem a client or a patient has is identified through the dialogue, but the diagnosis is rarely established through that dialogue alone. More often than not a physical examination is needed applying the theoretical and practical knowledge of the structure and function of the object in question (car, knee) and of the possible ways it can be flawed. In this sense the conduct of an encounter in a garage and in a surgery are similar. Yet, there is more to be drawn from Bakhtin's approach to human communication than the idea of anticipation modifying a dialogue, that is, the tension between everyday language and scientific language.

### **Polyphony and monologue<sup>1</sup>**

The language we use in our encounters is not exact, fixed and closed, but open to all kinds of nuances and interpretations, as we can see in our everyday misunderstandings and quarrels. Scientific language, by contrast, attempts to be precise in its concepts and expressions. In medical consultation our everyday language and scientific language meet.

As we have noted above, the way we express ourselves has developed through continuous interaction with other people. Our speech is, thus, moulded not only by our individual traits and capacities but also by the time, place and people with whom we live our lives. This is not only a matter of adopting a local language, dialect and style, but also of content. Ideas we have about health and illness vary among local traditions throughout the globe as has been vividly demonstrated by medical anthropologists. We physicians are also subjected to all of this. Despite the fact that the medicine we practice is based on scientific principles and research, we have developed our ways of thinking and expressing our thoughts from our own culture and immediate surroundings long before starting medical school. Yet, we like to think that since medicine is based on science, we doctors are free from cultural assumptions and peculiarities when practising our trade. It is, however, easily discerned that when one goes from one country to another one encounters different medical ideas and practices. Despite all this variability in the way we practice, we physicians do not like to make haphazard guesses, toss a coin, or appeal to supernatural powers when setting diagnoses and prescribing treatments. Instead, when conversing with our patients we attempt to use scientific reasoning and rely on the ideas we have about the structure, workings and malfunctions of the human body and mind as gained through medical research and cast in scientific concepts.

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<sup>1</sup> Polyphony and monologue are standard expressions in English Bakhtin translations and are used as such in what follows.

The simultaneous presence of our everyday expressions and scientific concepts in a consultation creates a certain tension in the clinical dialogue. That tension can be seen, to use Bakhtin's expression, as a tension between the polyphony of everyday speech and the monologue of scientific language.<sup>549</sup> Now that the way we speak has developed through continuous interaction with others, our everyday expressions are imbued with the voices of those with whom we have associated. Indeed, we all are able to recognise in our speech phrases, intonations, opinions and ideas acquired from our parents, siblings, teachers, friends, spouses and associates. For example, every medical student (including myself, long ago) has had some revered senior consultant during clinical training periods and has not only clumsily used the terms and intonations the senior was using, but also copied his or her gestures and even the way of walking. This "polyphonic nature of life itself", as Bakhtin expresses it, is present in all our expressions in one way or another. It is in the midst of this polyphony that science provides us uniformity and stability by offering us conceptual and practical tools to practice our trade as physicians.

Yet, there is even more in our everyday expressions than mere polyphony of ideas, opinions and customs derived from our social surroundings. As all of us practising physicians know, some of our patients visit us with symptoms that do not worry or bother them, but because someone else is worried and bothered. To give an example, I recently examined a small birthmark on the buttock of a middle-aged truck driver. The mark looked completely harmless, and since it had been there since birth without changing its appearances I told him that there was really nothing to worry about. The man just nodded quietly while pulling up his trousers. But why was he seeing me with that birthmark at this particular moment? When asked him about it, he told me that the mark did not bother him a bit, but his wife had become extremely worried because her brother had recently died of skin cancer. Now that my patient had got tired of his wife's worrying about his birthmark, he had finally agreed to come and show it to me. When I suggested that perhaps we should remove the mark to ease the man's burden with the worried wife, I noticed beads of sweat on his forehead. It then turned out, that he had come to see a mature male doctor in the first place, because he was reticent about showing his intimate parts to a female physician for such a small reason. It also turned out that he was scared to death of needles. We then had a man-to-man conversation where I told him that I also hate needles if I am not on the blunt end of

them. We then decided to try to appease the wife with a re-examination of the mark after a few months. If there were no changes to be discerned, we would apply wait-and-see policy and hope that the wife would be content with that.

As can be seen in the example above, there was, and I would maintain that there always are, more actors present in the surgery than what meets the physician's eye. Leiman calls this phenomenon the epiphanic quality of signs.<sup>550</sup> That is, when referring to the other, a sign causes it, him or her to be present in the consultation in one way or another. In this case, the patient's utterances acted as signs bringing in the voice of the wife who became a part of the consultation and whom we needed to anticipate when deciding what to do with the man's birthmark. Therefore, we have to add yet another parameter to our equation of the structure and conduct of the clinical consultation: those who are not physically present in the surgery, but who are present in the polyphony of the patient's utterances as they unfold during the dialogue, modifying the content of what is discussed and for what reasons.

As counterpoint to our polyphonic everyday speech, medical textbooks and journals attempt to formalize the language we use, since in order to be scientific, an expression cannot have multiple and contradictory meanings. A 2 cm stone in the gall bladder is a 2 cm stone in the gall bladder. Haemoglobin 14.2 gm/dL is Haemoglobin 14.2/dL. Type A beta haemolytic streptococci in one's throat are type A beta haemolytic streptococci in one's throat. In the attempt to eradicate multiple meanings in its expressions science constitutes, in Bakhtin's terms, a monologic form of knowledge. The physician's task is to derive from the patient's polyphonic utterances, i.e. from the variety of opinions, beliefs, fears, or whatever expressed (implicit or explicit) point of views s/he may present during the consultation, those aspects that are pertinent to the aim of the consultation, that is, to transform the material acquired into medical concepts to establish a diagnosis. Through that process the polyphony of the patient's utterances is reduced to a "systematically monologized whole", as Bakhtin expresses it.<sup>551</sup>

But if that transformative process is applied mechanically and rigorously, it may transform the patient into a "voiceless object"<sup>552</sup> of medical examination. The patient is not, however, a mute specimen in the laboratory and s/he never wholly fits into the

”Procrustean bed”<sup>53</sup> of any theory or diagnostic conclusion. Therefore, polyphonicism cannot, and should not, be totally monologized and abolished from medical consultations but needs to be heard and acknowledged instead. And it is precisely on this axis between monology of medical concepts and the polyphony of utterances in a clinical dialogue where the misunderstandings and discontent among patients regarding their physicians (and vice versa) emerge. While a physician may be correct in medical diagnosis s/he may not notice amongst the patient’s polyphony (approaching sometimes a cacophony) those aspects and worries that are crucial to the patient. “She did not listen to me” the patient may complain. On the other hand, if the physician fails to establish a correct diagnosis, the patient may complain: “He just kept asking these questions about my life while I had this tumour in my breast all the time”.

A physician needs, thus, to operate with and oscillate between these two modes of expression, the polyphony of everyday language and the monologue of medical concepts. Yet clinical consultation does not proceed in a logically structured manner. Both participants to the dialogue listen and anticipate each other’s questions, answers, gestures and intonations in a constant interplay. There are always returns, loops and dead ends and the whole process may even take a wrong route from the very beginning. That is why a medical consultation cannot be cast into any preformulated script or notation. But there is still the main theme to be maintained, that is, to attain the goal of the consultation, a diagnosis.

### **Consultation as a joint activity**

Let us now try to illustrate the above by following a clinical consultation from its very beginning. A person has, say, a sudden thrust of chest pain. His or her primary response to the pain may be just an abrupt change of physical posture. This is a purely motor response and it contains no meaning. But as soon as the event becomes conscious it becomes a subject of inner dialogue: ”what...?”. This inner dialogue seeks meaning through a dialogic question-answer analysis of the possible cause of the pain. The content of this dialogue is determined through the socio-historical milieu in which the person has acquired his or her ability to use the language and the

ideas carried by it in terms of possible inferences of this particular occasion (evil eye? heartburn? myocardial ischaemia?). If the pain ceases with no further consequences the person may consider it a coincidental phenomenon and leave it at that. But if the person communicates his or her pain to others, the dialogue initiated develops following the available inferences on the nature and cause of the symptom and the ensuing therapeutic actions. If the problem is not solved by means of domestic dialogues and measures, it may lead to a decision to seek medical advice, when available.

A person thus visits a physician because s/he (or someone on his or her behalf) has considered him or her to be in need of medical attention. During the ensuing dialogue, the physician's primary aim is to arrive at a diagnosis. That aim determines the physician's actions. When the physician listens to the patient's utterances s/he has a set of possible diagnoses at his or her disposal and s/he attempts to narrow these down to arrive, eventually, at one. (Arriving at the conclusion that there is nothing medically wrong with the patient is also a diagnosis). This aim is shared by the patient. S/he also wants to find a medical explanation, a diagnosis, that is, for his or her problem. After all, this is the very reason why s/he has decided to see a physician instead of, say, a homeopath or a faith healer. Medical consultation can, thus, be seen as a joint activity between the patient and the physician aiming at a common goal, the diagnosis, and that goal determines the subsequent actions for the participants to reach it. The role of medical concepts in medical consultation is, thus, preformative. That is, the physician's thinking is preset with a limited number of goals cast in concepts which determine the set of procedures to be taken to transform the patient's complaints to them even before the patient has uttered anything in the surgery.

The patient now sits in the consultation room ready to give his or her opening presentation that s/he has prepared beforehand, as patients usually have. When the physician asks why the patient has come to the surgery the patient replies, for example, that s/he has had recurring chest pains for some time. This opening utterance orientates the physician to follow a certain line of thinking, which is different if the patient says that s/he is feeling constantly tired. That is, whatever the patient utters as his or her opening statement sets the physician off on the line of reasoning that s/he has adopted through training and experience for that particular type of problem. One

may compare it to a drop-down menu on a computer screen. Click “chest pain” and you get a different menu than when clicking “constantly tired”. In those menus we find imprinted a set of medical concepts, that is, possible modes of chest pain and tiredness as understood in current medical theory, such as myocardial ischaemia, reflux oesophagitis, Tieze’s syndrome etc. and hypothyreosis, adult-onset diabetes, depression etc. respectively. All those concepts function as icons on a computer screen. When opened, they launch certain programs for the physician to use to make further inquiries into the patient’s problem in order to establish a diagnosis. However, here the similarities with the computers end. Clinical consultation does not follow rigid problem solving algorithms, as we already saw when discussing the features of the clinical dialogue. And this is precisely why attempts to build clinically reliable computer based diagnostic programs have not fulfilled expectations, at least so far.<sup>554</sup>

The patient has now completed his or her opening utterance, explaining the problem that accounts for the visit to the physician at this particular moment. S/he has now started, as the old saying goes, “telling the diagnosis”<sup>555</sup>, at least to a point to give it a working title “chest pain”. Usually the patient’s opening presentation, however, is insufficient, vague and perhaps completely wrong from a diagnostic point of view. Yet, the patient’s opening utterance discloses information that the patient deems relevant to his or her problem and is therefore the most valuable tool for the physician to make progress. This is why medical textbooks underline that the patient should be given sufficient time to present his or her case uninterrupted. It is noteworthy that studies published on the length of the patients’ opening statements show that in most of the cases the patient spends less than a minute on telling the physician the reason for attending the surgery.<sup>556</sup> Even if the opening speech takes longer, it provides more material for a physician to work with and, if nothing more, time to observe the patient more closely. (And if the patient keeps on talking after ten minutes or so - which is extremely rare in any case - the physician may consider it a possible sign of a mental problem of some kind worth probing a bit further.)

When the patient has completed his or her opening statement s/he expects the physician to respond in one way or another. This moment is, perhaps, the most crucial in the medical examination. The physician has now some of his or her menus open, but where to go from there?

It seldom, if ever, does happen that the physician is able to close the case on the basis of the patient's opening presentation alone. This may happen when, for example, a young woman who has urinary infections three times a year comes to see her regular physician and says 'here we go again'. Even then the physician is not content to be a vending machine and to deliver the prescription in complete silence. Instead, s/he observes the patient and engages in a communication of some kind, even a short one, to make sure s/he understands the patient's complaint properly and does not miss a case of chlamydia, for instance. That is to say, that in most, if not all, cases the physician needs to elicit more information than the patient has presented in his or her opening utterance. The physician therefore starts to ask questions. S/he starts, as we tend to say, to take the patient's history.

### **Patient's history**

As taking the patient's history is central in establishing medical diagnosis, let us first analyse the content of the expression "taking the patient's history". First of all, a patient is not an object of inquiry producing full answers to standard questions to be taken and analysed in an objective manner. As noted above, both the physician's and the patient's anticipations, let alone how they behave during the consultation, affect the way the patient presents his or her problem and how s/he answers the physician's questions and vice versa. This is why the clinical dialogue inevitably varies in words, intonations and gestures and, consequently, in the way the consultation proceeds. And this is the very reason why the computer analogy does not apply in medical consultation, since the polyphony of the patient's and the physician's anticipations, gestures, utterances and understandings in a living dialogue cannot be preprogrammed into any limited set of possibilities.

It follows, that when the physician listens to the patient's opening presentation s/he is not normally hearing a set of factual statements as when a radiologist reports that there is a 1.5cm tumour in the patient's left kidney with metastases in surrounding lymph nodes. Instead, the physician is listening to the patient's subjective account of the problem that has brought him or her to the surgery. The way the patient describes

his or her case to the physician is modified not only by his or her general ability to express his or her symptoms and worries, but also by the language and dialect used, by the local ideas of illness and cure and by the setting of the consultation, that is, whether s/he is talking to an unknown physician in a busy emergency clinic or to a trusted GP in the tranquility of the familiar consultation room. We may safely assume that the history the patient presents in those different settings is also different to a degree, although the problem that brought him or her to the clinic may be the same.

Yet, the notion “taking the patient’s history” is relevant in the sense that patients do indeed have a history. Their symptoms have persisted for some time, sometimes even months or years before they decide to come and see a doctor. Taking the patient’s history means, therefore, to construct what has happened before the patient’s arrival at the surgery. In this sense a physician works as an historian when s/he attempts to ascertain what has happened before.

Owing to our basic orientation to the human body as natural scientists, or biologists to be more exact, we tend to think of our patients’ bodies as biological objects of inquiry. History for us physicians is, thus, primarily natural history, as when examining the development of an embryo, the growth of a tumour, or development of cardiac infarction during the critical ischaemic moments of coronary thrombosis. The problem is, however, that when we inquire into our patients’ history we are not observing specimens in a laboratory. We are conversing with living subjects of our own kind.

One of the main problems for us physicians, when interviewing our patients, is that if we fail to ask relevant questions we may never get relevant information. And even if we do ask the right questions, we cannot be sure whether the answers we get are valid. Every seasoned clinician can tell endless stories about this problem. “How it never crossed my mind that this sweet old lady down the street was an alcoholic when I was trying to figure out why she was getting dizzy every now and then, and having these bruises everywhere. I did ask her about consuming alcohol once but she only smiled and said she would never touch a glass. Well, I guess she must have been drinking straight from the bottle.”

The patient's history cannot, therefore, be just taken as picking up an object. Instead, as Carr notes, an historical inquiry is "a process of selection in terms of historical significance...history is a selective system not only of cognitive, but of causal, orientations to reality...from the multiplicity of sequences of cause and effect... [a historian] extracts those, and only those, which are historically significant; and the standard of historical significance is the [historian's] ability to fit them into his pattern of rational explanation and interpretation."<sup>557</sup> If we were to replace the words "historian", "historical" and "history" with the words "physician", "medical" and "medicine" in the quotation above, those sentences could be, curiously enough, from any medical textbook discussing the patient interview. John Vincent writes in a similar vein on the problem of evidence in historiography. For Vincent, creating historical evidence is "about intrinsically fallible evidence. In this it resembles medicine and the detection of crime. And it is about fallible evidence as interpreted by fallible people."<sup>558</sup> Vincent could also be describing medical consultation when he notes that "if history is about asking good questions, the evidence will not in itself choose what the questions ought to be...Two men digging in the same trench would produce different answers, because they were asking different questions."<sup>559</sup> This phenomenon is familiar to physicians and patients alike. If a patient were to see different physicians about the same complaints, s/he would most likely end up having more or less different conversations and therapeutic suggestions with the physicians even when the diagnosis arrived at might be the same.

It follows, that in the medical consultation a physician faces the same epistemological problems as an historian interviewing those who have taken part in some event of historical interest and who is trying to construct what it was that took place and why in that particular period of time. Therefore, there can be no "The History of Patient X's chest pain" any more than "The History of Britain" in any real historiographical sense. There are only histories of Britain as there are histories of patient X's chest pain, because those histories are constructed by different historians for different purposes and in different periods of time although their object of inquiry might be the same (Britain, patient X's chest pain).

It may be noted here, that the conclusion above seriously undermines what is referred to as narrative medicine. As there is no “the history of patient X’s chest pain”, there is no such thing to be examined as “the narrative of the patient X’s chest pain” either. It should be remembered that the concept of narrative was adopted into medicine from literature studies, where it denotes written forms of self expression. What the patient says in clinical dialogue is not, however, written anywhere to be analysed as a narrative. Furthermore, what the patient says during the consultation is not merely self-expression since it is modified as a joint product according to the way the consultation proceeds, as discussed in the above. One only needs to think of a situation where a patient visits different physicians with the same complaints and the conversations would be more or less different. Which one of those is, then, “the patient’s narrative” to be examined?

When Charon, for example, writes that narrative medicine means doctors “recognizing, absorbing, interpreting, and being moved by the stories of illness” there are three fundamental problems in her definition. First, she applies (unconsciously?) the very stimulus-computing-response schema criticized above, when addressing the clinical consultation. Second, she seems to claim that there really is such a thing as *the* story to be analysed, and, third, the story seems not even to be analysed as the patient’s story but as “stories of illness” as if they had some kind of an independent existence. And when we read in an introduction to Mehl-Madrona’s book on narrative medicine that narrative medicine “seeks to restore the pivotal role of the patient’s own story in the healing process”, we only need to think in how many different ways each of us recount our illness experiences depending on with whom we are talking, when and why. Our ways of telling about our illnesses are, indeed, different, when we speak with our spouses, children, parents, friends, doctors, insurance company clerks and fellow workers in the office coffee room. Which one of those stories are we talking about when we are talking about “illness stories”? Furthermore, when the same introduction claims that “conventional medicine tends to ignore the account of the patient”, one can only wonder what the author could possibly mean, since the whole medical endeavour begins with listening to what the patient says, as underlined in textbooks of medicine, emphasized in medical education and conducted in countless conventional surgeries with countless conventional patients every single day throughout the globe.

### **From symptom to medical concept**

Let us now return to the first moments of a medical consultation. By the time the patient finishes his or her opening statement the physician has his or her drop-down menu, or several menus, open. S/he has also observed the patient's physical appearance, state of mind and emotional status and related all this to his or her previous knowledge of the patient, or similar kinds of patients, if any. But during the few opening moments of the consultation the patient has done precisely the same. How does the doctor look? Does s/he seem interested in me? Busy? Friendly? Detached? Frightening? Trustworthy? Indeed, can I trust this physician? Does s/he know what s/he is doing? S/he looks so young. S/he does not seem to listen to what I say. S/he is just staring at the computer screen. This all moulds the way the participants of the dialogue will express themselves during the consultation, anticipating each other's expectations regarding what is important for the goal of the event, that is, to transform the patient's symptoms into medical concepts.

The patient has now finished and s/he is waiting for the physician to continue from there. But how should the doctor proceed? What should s/he say? What question should s/he ask? Since each and every doctor-patient encounter is, of necessity, a unique phenomenon, there are no standard answers available. No evidence based clinical guidelines can tell what the doctor ought to do or say next.

The physician says and does what s/he deems appropriate to proceed towards the goal of the consultation. S/he starts to transform the patient's problem into a medical diagnosis following the menus that are there in the open by now and opens new ones and closes others when needed. What emerges during the dialogue that follows is generated as a joint enterprise, as laying out pieces of a jig-saw puzzle on a table in between the participants to be organized to form a recognizable pattern. (This is why clinical problems are often referred to as puzzles. If there are too many pieces missing, or if they are too ambiguous to be put together, there emerges no picture.) Some pieces offered by the patient do not qualify to be taken on the table at all, either

because they are diagnostically irrelevant, such as photos of grandchildren, or they are a priori unfitting to any medical diagnosis (psychiatric diagnoses partly excluded), such as evil eye, bad karma or blocked chakras. It is also important to note that the pieces selected for further consideration are not only thoughts casted in words, but they are often in a visible, palpable, audible and olfactory form as when examining a rash, or a lump, or murmurs, or excreta, or looking at the X-ray pictures, or laboratory results or spirometry curves. (In the old days physicians also used their taste, as when detecting sweetness in the patient's urine. Nowadays we are lucky to have chemical tests for that purpose). The consultation proceeds, thus, not merely computing abstractions in the brains of the participants but concretely within the space in between them.

Although the clinical dialogue does not proceed in a linear and logical manner but has its detours and dead ends, the diagnostic menus that the physician has at his or her disposal form the map and compass for the physician to find his or her way to the goal in the midst of the polyphony of patient's expressions. Often the physician's task is fairly simple, such as when the patient says that s/he has had light fever, runny nose and sore throat for a day or two. That information opens a menu "upper respiratory tract infection". This concept contains not only the nature, aetiology, prognosis and treatment of choice for the problem, but also what diagnostic measures need to be applied to confirm that the patient's complaint can be transformed into that particular concept. In this case, a short discussion, visual evaluation and palpating the patient's neck will suffice. The situation is more complex when the patient complains, for example, of recurrent chest pains. To transform the patient's symptoms into a medical concept may in this case require lengthy discussions with the patient, together with extensive physical examination, physiological measurements, radiological imaging and variety of laboratory tests.

The problem for us physicians is, however, that many of the problems patients present with, especially in general practice, do not fit neatly into any of our diagnostic boxes, even when forced. We need, then, to content ourselves and our patients to leave the diagnosis open and to apply the wait-and-see method to let the problem mature to be slotted into some diagnostic category – or to fade away without a name and number. And even when the patient's problem does fit into some of our diagnoses, there is

always more to consider such as what kind of worries and fears the patient has in relation to his or her symptoms and the way s/he interpretes them. Those fears, worries and interpretations may or may not be brought into the discussion, and even when they are, they remain more or less concealed. As Bakhtin writes "...a living human being cannot be turned into the voiceless object of some secondhand, finalizing cognitive process. In a human being there is always something that only himself can reveal, in a free act of self-consciousness in a discourse, something that does not submit to an externalizing secondhand definition."<sup>560</sup>

Despite all the ambiguities and shortcomings in our clinical dialogues, our task as physicians is to adhere to our conceptual system and diagnostic goals, otherwise we would not be physicians, but healers of some other breed to the extent of being quacks. Yet all healers adhere to a conceptual system of some kind and, like medicine, all healing systems require the same transformational process from the patient's complaint to the concepts used by the healer. Therefore, when many of the so-called "alternative" therapists claim to be "holistic" in their trade, those claims turn out to be downright empty. All concepts used in healing, be they scientific or other, are monologic in the sense that, as Bakhtin writes, "in the presence of the monologized principle, ideology – as a deduction, as a semantic function of representation – inevitably transforms the represented world into a voiceless object of that deduction."<sup>561</sup> For example, to claim that the patient's epigastric pain is due to the blocked energy channels which are to be opened by massaging his or her footsoles is as transformative and reductive as to say that the patient has a ventricular ulcer that is healed by diet and medication. To arrive at a diagnosis is, thus, always a process where the patient's experience is transformed and reduced to a concept of some kind and that concept determines and organises the measures needed to achieve that transformation, be it by holding a pendulum over one's belly or performing a gastroscopy. On the other hand, to anticipate the patient's fears and worries during the diagnostic process and to take them into the discussion, if the patient so allows, is not being "holistic". It is just being a good therapist, since having the experience of being heard and understood is in itself therapeutic for any of us, when we are feeling ill and miserable and seeking cure, comfort and alleviation.

### As concepts go by

Having now examined the structure and conduct of medical consultation as a joint activity and the guiding role of medical concepts therein, let us return to the concept psychosomatic and its place in medical theory and practice by considering the patient with whom this essay was opened. The patient's occasional headaches had been diagnosed as migraine. Now the problem was, that she was having debilitating bouts of headache on a weekly basis. During the consultation she offered the concept psychosomatic as a possible explanation for the situation. As noted, she could not have done so if we had had that conversation before the 1930s, because no such concept as psychosomatic was then available for her to offer.

Now, if I had seen this patient in late antiquity, I would have followed Galen's doctrine, where occasional lateral headaches were conceptualized as hemicrania (literarily: half head). According to this concept the pain is owing to accumulation of choler into one half of the brain (the opposite side is protected by the falx cerebri) and the treatment would have been targeted, logically, at reducing that accumulation with enemas, blood letting and diet.<sup>562</sup> The concept hemicrania consisted, thus, of describing the symptom (headache on the other side of the head), explaining the aetiology (accumulation of chole on one side of the brain) and therapeutic measures to be taken (reducing chole in the brain).

If I had seen this patient in the Middle Ages, I would have followed the Galenic understanding on the concept hemicrania but, being a keen reader and having access to medical textbooks, I would have studied inter alia the works of Paul of Aegina (c.625-c.690) who suggested in his *Pragmateia*, that in a case of hemicrania one needs to perform a

“venesection of the forehead and the veins of the nose, if the face is warm, and...wine vinegar...and oil of roses applied to the head: otherwise on very pungent clysters, the rubbing of the head, pungent sneezing – for example [through] the grease of colocynts, sneezewort, cyclame...and rube-facient creams.”<sup>563</sup>

While the author closely followed the Galenic doctrine of the content of the concept hemicrania, he did refine the therapeutic repertoire for the ailment in his book.

If I had been practising in Saxonia in 1740 as a student of Stahl, I would have resorted to the doctrines above, since Stahl did not have much to add to the diagnosis and treatment of hemicrania in his textbook *Collegium Casuale* published in 1734.<sup>564</sup> Yet I would have paid attention to the patient's emotional turmoils when attending religious meetings and considered their role in her recurrent headaches.

If I had seen this patient in Paris in 1790, I would have studied Mesmer's theory and methods, which would have changed my conception of the workings of the human body with regard to the forces at work in nature. The content of the concept hemicrania was still the same when describing the symptom, but the role of chole as an aetiological explanation was fading in favour of new understanding of electric and magnetic phenomena in living and non-living bodies and of the ways we physicians may use them for therapeutic purposes.

If I had been practising in London in 1850, I would have abandoned Mesmerism in favour of hypnosis. That shift in my thinking and practice was owing to my reading an article in the *The Lancet* in 1845, where Mesmerism was acknowledged to be beneficial in treating migraine (the anglophone version of hemicrania) but now a new method had been introduced to medicine called hypnotism, and it had also been successful in curing the ailment.<sup>565</sup> Being a keen follower of the development of science, I would have studied hypnotism and realized that while the concept of migraine was still useful in illustrating the symptomatology of the ailment, the aetiology resided in the malfunctioning of the nervous system and needed to be treated accordingly. Realizing now that there was no magnetic fluid emanating from me whatsoever, I would have resorted to inducing curative hypnotic sleep as suggested by my newly embraced concept of hypnosis. (It needs to be noted, however, that if I had been a devout Pietist, I would probably have shared Heinroth's stern conception that my patient's headaches were owing to her sinful way of life. In this case the way to cure would be found only in redemption and living one's life as a true Christian.)

Had I seen this patient in Berlin in 1860, I would have just finished reading a recent German medical textbook *Canstatt's Specielle Pathologie und Therapie vom klinischen Standpunkte aus bearbeitet*, where the essence of Die Migräne is to be found in

“...eine abnorm gesteigerte Sensibilität des Nervensystems, wie sie in manchen Constitutionen, besonders aus dem weiblichen Geschlechte, wie sie hysterische, hypochondrische, chlorotischen Subjecten, Frauen, die durch schwere Geburten, durch Blutflüsse geschwächt sind, Individuen aus den höheren Klassen der Gesellschaft mit sitzender Lebensweise, Gelehrten u.s.f. eigenthümlich ist...”<sup>566</sup>

I would have had recognised in the above a set of concepts such as “sensitivity”, “nervous system”, “hysterical”, “hypochondria” etc, concepts that I had, of course, heard before, but which were building now toward a whole new aetiological conception of migraine as a form of nervous irritation. As for therapeutic measures, the author suggested, accordingly, “Grösste Ruhe, Dunkelheit, Stille, Einsamkeit und horizontale Lage...sedativa” (greatest peace, darkness, quietness, solitude, horizontal position...sedatives).

If I had been practising in Helsinki in 1890 I would have adopted by then a well established concept neurasthenia, which suggested an explanation for migraine built on a novel understanding of the function of nervous system. The loss of nervous energy was, indeed, a nice explanation for my patient’s recurrent headaches considering her burdens in life. Following this new concept I would have prescribed my patient rest, diet and walks in our beautiful forests to recharge her nervous energy.

If I had seen this patient in New York in 1940, I would have just read a book by Dr. Dunbar on the psychosomatic approach to medicine. That book opened a whole new horizon for my daily practice. The concept psychosomatic would have helped me to understand the role of my patient’s repressed emotions in discharging through attacks of migraine. As a treatment I would have recommended psychotherapeutic measures to reveal her inner conflicts leading to headaches as a conversion symptom, and she would have agreed to undergo psychoanalysis. I would have considered having

myself analysed as well, but then psychoanalysis fell out of favour in medical circles and I would have left it at that.

Now that I met this patient in Tampere, Finland in 2006, the concept of psychosomatic no longer enjoyed the position of a theoretical concept in medicine. It had been deflated into an everyday concept with no place within any scientific referential system. In its everyday use it denotes the alleged role of emotions and other psychological problems causing symptoms such as recurrent migraines. Being devoted to science, I cut short the line of lay reasoning the patient suggested. Instead, I followed an approach casted in the concept biobehavioral when I prescribed her medicaments to adjust her biochemistry and advised her to change her daily behaviour in terms of avoiding certain nutrients and stress which apparently exacerbated her headaches. Whatever other problems she had in her life, had better be dealt with by psychologists and social workers. That does not mean, however, that I was not willing to discuss her worries if she so wished - and indeed in a most friendly and caring way. After all, we all know that sometimes even a short discussion may open new ways to look at things and that may help us to find ways to cope better with our burdens in life. In that dialogue I would express ideas and opinions that I have derived from my training and experience in my trade and life in general, anticipating my patient's worries, fears and expectations as well as I could. And if I succeed, my diagnostic conclusion is medically correct, the treatment I prescribe benefits her, and through our discussion she feels that her plea has been heard and answered. What more can, or should, a physician achieve during the few fleeting moments of an everyday clinical consultation?

## Conclusion

This essay is an attempt to contribute to Pellegrino & Thomasma's and others' initiative to develop a philosophy of medicine on the basis of clinical practice. According to that initiative such a philosophy needs to be able to address medicine not only as practice but also as theory, since in medicine theory and practice are closely intertwined. That is, whatever questions are addressed in medical theory and research, they derive their relevance, ultimately, from clinical practice. After all, there is no medicine without patients presenting problems to physicians who are trying to understand and solve those problems according to the theory they apply in their work. Yet, medical theory is still far from being adequate to solve all the problems of health and illness that burden humankind, and this is why new questions and ideas constantly emerge in our attempt to find better ways to help our patients with their ailments.

Pellegrino and Thomasma also suggested that a philosophy of medicine should address medical practice as a form of inter-human activity and also the logical tools applied within this activity. In an attempt to answer this call I have drawn upon writings of Vygotsky, Bakhtin and Leiman for my inquiry, writings that have contributed to the development of the so-called sign-mediated activity theory that is still in the making and which is finding its way to the psychotherapy research through the works of Leiman and through this essay hopefully to general medical practice.

According to activity theory any human activity is performed to attain a goal of some kind. It follows that, in order to understand an activity, we need to understand its goal. The primary aim of the medical consultation is diagnosis. Medical diagnoses are theoretical concepts which define the possible modes of being ill according to the prevailing theory of medicine. Medical concepts reveal the measurements needed to confirm the diagnosis and they also contain the therapeutic methods to be applied to cure or alleviate the ailment.

Since medical concepts are socio-historically formed, they are under constant re-evaluation and change. Therefore, to understand the content of medical concepts we

need to understand their developmental history in relation to the current medical theory.

To examine the nature and role of theoretical concepts in medicine I chose the concept of psychosomatic as a token for my inquiry. When analysing the historical development of that concept in medical theory it becomes apparent that Kuhn's model of the development of science through amassing anomalies in the course of the research to a point of revolution in the current scientific paradigm does not apply.

When building his theory Kuhn drew substantially on Fleck's approach to the development of science. It seems that Fleck's conception of protoideas from where our contemporary ideas in medicine have developed is more appropriate for analysing the development of medicine. However, Fleck's concept of proto-idea is somewhat misleading, since when our predecessors were debating their ideas about medicine, they were not debating them as proto-ideas, but as ideas proper. Furthermore, Fleck's approach needs to be enriched in terms of understanding the nature and role of concepts as used both in medical theory and clinical consultation. This may be accomplished by using Vygotsky's conception of concepts as tools for our thinking and Leiman's analysis of the conduct of clinical consultation as sign-mediated activity.

The approach applied in this essay is not philosophically eclectic one adopted by Pellegrino and Thomasma, nor does it attempt to draw on different scientific fields such as from psychology and sociology and integrate their theories, methods and results, as Thagard resorted to when analysing medical development. Applying the Vygotskian approach to the problem of the nature, development and role of medical concepts such as psychosomatic offers us tools with which to address the issue, as Thagard suggested, integrating "representational, referential and social aspects" of medical theory and practice.

The core event in medicine is the consultation. Medical consultation is inevitably multilayered and open-ended in nature, mixed with numerous views, ideas and opinions finding a particular expression in that particular communicative act. Therefore, even when a diagnosis is soundly established on the basis of current

medical theory, and an appropriate therapy is chosen, it is impossible in a living reciprocal utterance to reach exhaustively unanimous and monolithic conclusion on the matter in question, a conclusion where all shades and side meanings are extinguished. Few are the circumstances where this phenomenon can be more deeply appreciated than in everyday general medical practice.

## Epilogue

I was once admiring the architecture of the vaults of Durham Cathedral, when one of those volunteer guides drew my attention to a change in the decoration in a certain section of the roof. At one point the crude and simple became more sophisticated and expressive. The guide explained that when building the cathedral in the 13<sup>th</sup> century the architects and builders encountered several technical problems in realising their ideas of what the cathedral should look like to express its meaning as it was understood in the times long past. To solve these problems new tools needed to be designed. The local smiths experimented with different alloys and molding methods to provide better tools for the masons and carvers to cast their ideas into the forms they were seeking.

When I have written of concepts as tools in this essay I have not used the expression in a metaphorical but in a concrete sense. That is, when we realize that our conceptual tools are too crude or unfit to help us express our ideas, we need to develop new tools to render visible the form and substance of the object we are working with as we understand it. In this sense concepts are not abstractions but as concrete as the hammers and chisels of the early builders of that magnificent cathedral. Those tools were designed and used for particular purposes to achieve the goals the builders of cathedrals had in their minds. This also happens in medicine. When our tools turn out to be inappropriate for our clinical work, we need to develop new ones. The history of medicine is rich, indeed, in conceptual changes of which we have seen a token in the above. As Eric Cassell once wrote, “our theories and constructs about sickness and disease have come and gone through the ages...[but] the sick have remained essentially the same. It is to them that the physician owes his allegiance and, ultimately, it is in them that the truth resides”.<sup>567</sup> As a clinician, I cannot agree more.

But what happened to the concept of psychosomatic in medicine once it was manoeuvred out of the Journal as its core concept? It did find a refuge and a niche of its own, after all. In 2001 the Academy of Psychosomatic Medicine applied for the recognition of psychosomatic medicine as a psychiatric subspecialty in the USA, and the application was approved by the American Board of Medical Specialties in

2003.<sup>568</sup> Levenson, Gitlin and Crone have defined the content of the concept psychosomatic in this new context as encompassing “Consultation-Liaison Psychiatry and other aspects of the interface between medical and psychiatric illness”.<sup>569</sup>

In 2005 and 2006 two new and massive books on this new conception of psychosomatic medicine were published in the USA, *Textbook of Psychosomatic Medicine*<sup>570</sup> and *Psychosomatic Medicine*.<sup>571</sup> It is noteworthy, that neither mentions psychoanalysis in their indices. In the former, the word psychosomatic does not appear in any of its article titles, nor is there a single article on psychotherapy, while there are articles on other therapeutic methods such as psychosocial treatments, psychopharmacology and electroconvulsive therapy. In the latter book one finds the word psychosomatic in the index, but the word does not appear in any of its chapter titles, while there are separate chapters for topics such as psychotherapy, psychodynamic approach and cognitive behavioral therapy. In the Prologue the authors write that

“So many clinical and research opportunities prevail under the psychosomatic medicine rubric that it remains a diverse and non-instructive name...it involves the medically [and] surgically ill who are in need of psychological care... psychosomatic medicine...can best be described as the subspecialty of psychiatry that focuses on medical and psychiatric co-morbidity”.<sup>572</sup>

The 2009 edition of a pocket-size manual for consultation-liaison psychiatry, *Psychosomatic Medicine – A Practical Guide*, hardly mentions the concept psychosomatic apart from in the title, when focusing on the practicalities of consultation-liaison psychiatry in contemporary clinical medicine.<sup>573</sup> Whether the concept psychosomatic will remain on the title page only, as a veteran who has served his term and been given an honorary employment, or whether it will ever again return to active service with the status of a scientific medical concept in the sense I have argued in this essay is for the future historians to find out.

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