Evolution and health in modern Homo Sapiens and how to bridge the gap between real world needs and what medical sciences do! A new perspective (re-evolution?) on behavioral medicine including Individual Biological Evidence Guidelines (IBEG)

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Evolution and health[1] in modern homo sapiens and how to bridge the gap between real world needs and what medical sciences do! A new perspective (re-evolution?) on behavioral medicine[2] including Individual Biological Evidence Guidelines (IBEG)

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Charles Darwin's focus on *the evolution of species has now become an evolution run by man (or perhaps mainly by the market[i]) largely neglecting other species and also neglecting its own history including own health?*

Below is an introduction discussing health in modern man out of an evolutionary perspective, a further development of my professor presentation – October 17th 2008, Eskilstuna, Sweden.

The main consequence of this theoretical and practical presentation is that vast, extensive further development of integrated biopsychosocial medicine and its intervention strategies based on biological, psychological and social learning is decisive for effective individual treatment and also prevention of lifestyle- and society related diseases/problems/symptoms where pharmacological intervention can be a complement, when needed, as a temporary swimming float.

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[1] In this presentation is not (a) clinical issues discussed, which will be in the next presentation in this series and (b) optimal performance and health in hand, which also will appears in coming presentations.

[2] Biopsychosocial medicine refers to George Engel´s publication (the need for a new medical model: A challenge for biomedicine. Science, 196, 129-136) and what is discussed at the web sites www.stressmedcenter.com and www.skilssbeforepills.com. Behavioral medicine refers to "the interdisciplinary field concerned with the development and integration of behavioral and medical sciences knowledge relevant to health and illness, and the application of this knowledge and these techniques for prevention, diagnosis, treatment and rehabilitation" (Schwartz and Weiss, 1978, p. 250). With behavioral medicine treatment we usually focus on social-psycho-physiological treatment which mostly content biopsychosocial "applied" education of patients, laboratory-biofeedback assisted behavioral training and home training with or without feedback-instruments as well as tailored exercise and health promoting food intake

[3] I am the only one responsible for this presentation. As my English together with my dyslexia is not as good as I wish I am grateful for language corrections as well as, of course, critical responses

[4] **What is science?** "There may well be no definitive characteristics of science and, indeed, if there were they would probably change from one time to another. Strictly, ´science´ means ´knowledge´ but what has come to mean in the modern western world is knowledge acquired as a result of employing empirical methods (Valentine, 1982, p. 6). Specifically about observation, measurement and experimentation as well as experimenter bias effect, "Rosenthal (1967) has argued that unintended covert communications from the experimenter to the subject, which affects the subject's responses, is the norm rather than the exception (Valentine, 1982, p. 69).
Scientific development; "Our theories, beginning with primitive myths and evolving into the theories of science, are indeed man-made, as Kant said. We try to impose them on the world, and we can always stick to them dogmatically if we so wish, even if they are false (as are not only religious myths, it seems, but also Newton's theory, which is the one Kant had in mind). But although at first we have to stick to our theories - without theories we cannot even begin, for we have nothing else to go by - we can, in the course of time, adopt a more critical attitude towards them. We can try to replace them by something better if we learned, with their help, where they let us down. Thus there may arise a scientific or critical phase of thinking, which is necessary preceded by an uncritical phase" Popper, 1959, p. 59-60).
Scientific in reality; "Paradigmatic thinking often lead man (as e g scientists) to exclude areas of research/relevance, including particular findings and/or theories/rational that does not easily fit into the paradigms of today. A paradigm is a set of believes about reality that seem self-evident and un-changeable. This is the more or less explicit platform where theories and hypotheses are generated/extracted/emerging. Paradigms are needed for effective work but if regarded as "facts" and the scientific truth it can lead individuals (e g scientists) to defend their view-point against rational evidence or fight back new evidence while not fitting into the own paradigm"(Kuhn 1957)
Scientific consensus; "There are no signs of progress toward sufficient consensus, …. the nature of the subject matter (paradigm with mighty and main) "appearance of more agreement than actually exists" (Fiske 1978). This argument can be valid also for definition of science and foundation for the present mainstream paradigm.

PART ONE

Evolution and Health

Introduction

Man is one of the most complex organisms evolved during billions of years hosting in its brain also the reptilian, lower and higher mammalian parts of the evolution which the human brain has to functionally cooperate and deal with. This is enormous evolutionary "journey" is apparently approaching its end – or close it it – comparable with a rubber-band reaching its limit. What is not much considered is the consequences of such a complex development over billions of years where the different between two very different communication systems or mode substantiate it internal problems of interplaying - that the humans host both the analogue and serial communication language which are completely different like Chinese and Swedish. It become more and more obvious that they have increasing problems to cooperate and interact functionally in a the increasing complex organism in increasing complex contexts.

These completely different communications systems have their benefits which probably are one reason for our position on the evolution ladder so far - but apparently now becoming a disadvantage which can be observed in the development of biopsychosocial stress – especially in what we called lifestyle related diseases and problems. Here it is critical how the limbic and cognitive systems interact/interplay like a symphony orchestra, a metaphor Hans Selye used to describe the complexity of physiological stress. The conductor (human brain) is conducting, the orchestra is paying (physiological systems) and the score, the map of genes – phylogeny, ontogeny and epigenitics.

Cognitive dissonance (Festinger, 1957) have manifold consequences on between and within individuals social, psychological and physiological systems and sometimes also on ecological ones. Temporary processes of dysfunctions (behaviors/reactions out of its contextual steady state purpose) can be part of individuals' dynamic behaviors when they are well coping with its contextual goings-on. But when there is no functional dynamics it is critical for development of health and prevention of unhealth.

The above is really a complex matter to understand and deal with effectively, especially when the organism steady state is "out of order" more or less permanent. The only solution for increased "revealing" and understanding is the development of complex systems interactions theory/paradigm which also can be used at individual levels. In medicine domains this is systems integrating biopsychosocial medicine. A pharmacological (reductionistic justifying) point of departure is impossible as a platform for lifestyle- and society related diseases/dysfunctions/problems/symptoms and few systems oriented, theoretical practical useful approaches exists. Next presentation will be following up this one and be more focusing on the man as a health creator-approach.

Evolution concerns (largely) **development of functionality and complexity; a prerequisite for survival.**

If we think about the principle of survival of the fittest, it concerns adjustment to internal and external contextual changes of significance which is decisive for survival of a living organism. Here is flexibility and adjustment crucial, which in man not only concerns to be able to foreseen, to anticipate "what's up" mostly short-termed but also more long-termed. In man a combination of meta perspective, construe possible potentials outcome, planning ahead, and in general increasing capacity of problems solving. This has been developed more and more over time now reaching a level that also create a kind of new problems, e.g. overdoing, overestimating concerning consequences of anticipation of problems – also more or less odd mental anticipations, which often generate activation of the old evolutionary stress defend system designed for other purposes.

Out of its evolutionary context the stress systems can cause automatic (see e.g. discussions by Zajoncin the late 1960-ties) , "auto-stress-like-reaction" somewhat similar to autoimmune responses. That is, precognitive information processing. Evolution has not foreseen (and could not of course) the need for a turn-off function of stress systems for homo sapiens – especially in modern present life situation. Decisive for our survival is now also to deal with this – the older part of the evolution hit as in the back. It is one of the most important issues now when we discuss lifestyle related diseases. Suggested solution must also be able to integrate the different functions (and languages) of different brain systems and their interplay.

It might be surprising but the same fabulous evolution/development of the human brain with its accelerating not foreseen consequences for man (as well as for the earth) also results in this "hits back" at different levels between older part of the brain and neo cortex. One problem relates to bad communication

while they use different languages – analogue/spatial and temporal/serial/verbal, e.g. temporal/verbal systems have not direct control over physiological processes. This hit back or "re-evolution" can clearly be observed in non-functional stress responses when modern man try to (through verbalizations, more or less conscious self-talk) control it. This kind of language problem is one basic challenge for survival of man - at worst, and a crucial health problem at best(?), in the long run while our brain must function as an integrated whole. This is still to be understood my present school medicine. Without a biopsychosocial systems integrating medicine we will not be able to master the development of lifestyle related diseases and problems.

Has the evolution in man reach a position like a "rubber band"?

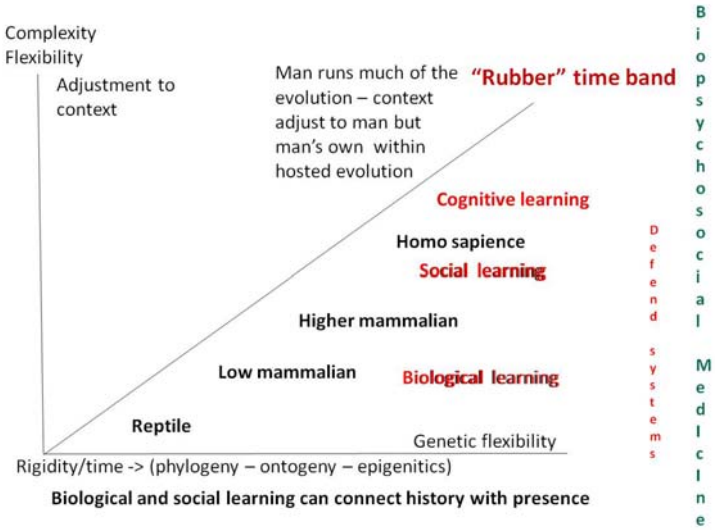
Evolution goes basically from rigid scripts to gradually increased flexibility, facilitating adjustment where adjustment behaviors are the organisms "mechanism" for meeting existing and changing internal and external contextual forces. BUT – also organisms mostly also are hosting in itself the parts or the whole (history) development of the evolution. This can be regarded as a **rubber band** which now might have reached its limitation for extension. How can we then strengthening it further? Or, what else can we do- decrease pressure ? Where are the weak points? Auto immune reactions are a "signs" of some, biopsychosocial based stress reactions are others. These basic systems are challenged in moderns man by man´s own life style- and society related behaviors . Non-functional such behaviors potentially generates problems and diseases which refers to inadequate, non functional "auto response" (where auto immune systems reaction identify wrong targets agents) and non-functional stress reaction create complex dysfunctional patterns with synergy interactions in not well understood ways. A third line of process which complicate our way to cope with real world problems refers to complex information processing between are different languages in our modern human brain. This can be seen as a perceptual, interpretational and communication problem.

Human brain is evolved in a way where older brain systems still use another communication mode. Modern brain use and rely on sequential/temporal/serial information processing and not as the "old" brain (mammalian and reptilian) do, immediate (spatial). Why was this kind of modern brain developed? A simple explanation for this evolution is that space and time together increase the possibility for flexibility where the perspective on goings-on (a meta perspective can be created) can be extended and e.g. foreseen and anticipation of what will happened can be more developed – both see the past and present in the "light of the future" and thereby anticipate and predicted the future.

If we think about an evolution of (behavioral) flexibility, we can see a line from jumping genes (also virus related), epigenitics and (behavioral) gene expressions via different kind of basic (biological) learning. Using a metaphor, gene is the instrument (piano) which biopsychosocial processes play on – some plays well and others don´t . Biological learning has relevance for both older and newer brain systems (while the limbic system and neocortex have vast interconnections) including basic brain chemistry where imprinting is an interesting example while it occurs within a limited time window and then its effect is quite stable (temporary flexibility and then rigid) over time.

In man we can use basic biological and social learning principles (where mirror neuron can be seen as an interface) and use them as "tools" for training to integrate our "roots" with the presence – connecting to our evolutionary history of billions of years (see more below)!

It is obvious that defend systems developed during earlier part of the evolutionary do not fit into present conditions on earth, especially since man has taken the command and more and more take charge of the selection mechanisms. So – one of the most important thing for man is now to understand how to proceed with a constructive development ahead while re-connecting and integrating with its own evolutionary history - an evolution now mostly(?) driven by man!



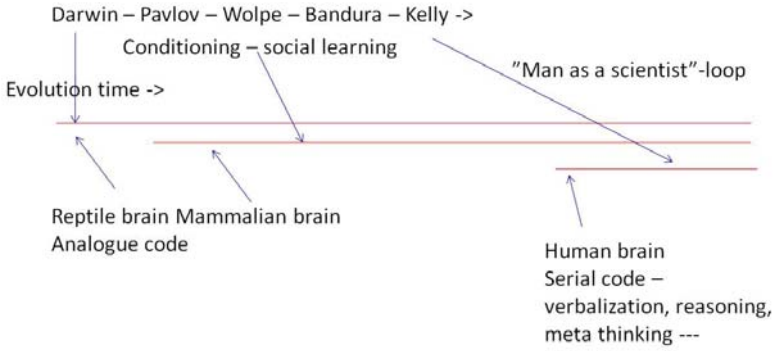
Increased flexibility, adjustment and different kind of learning increase also complexity at different levels BUT at the same time some crucial parts of the evolution do not change much, e.g. immune systems and stress systems[5]. They react quite in the same way over time, that is, what they are designed for, although they are exposed to very new contextual, environmental processes/complexities and other kind of circumstances they were not created for. If the stress systems are "turned on" depends on both limbic systems but not always neocortex interpretation of imaged or observed threat (Le Doux, 1998, where he disuss e.g. Zajoncs arguments of automatic processing) – appraisal can be both precognitive and cognitive.

This complex functional integration of old evolutionary systems with newer ones - which also are developing at increasing speed - is one of the huge challenges for man. At present we do pay a large cost, which is due to our short-comings with identifying, understanding and preventing/treating the stress problems. How they are "turned" on, how they react short-termed and long-termed as well as consequences on supporting system as e.g. in hypocapnea (low CO2 in blood) where many systems are reacting with different time scales – and which over time are depilated. Defend systems can probably also by itself misunderstand certain stimulus as in cases of auto immune responses. This is the case for non-adequate stress responses which by themselves become a stress problem. Given we defined negative stress as strain on a system where the system does not returning to base (steady state). If stress reactions are activated, it relates to precognitive and cognitive appraisals (see above) where functional interactions/interplay between different parts of the brain is critical for effective coping. Here is the appraisal and coping processes in the older brain systems (especially the limbic system and amygdale) crucial. At the same time biological learning is also working (it is really not just working when we want it to work). In that sense one reaction is one step in either direction – functional or dysfunctional both concerning appraisal and coping. Even more complex when imprinting-like effects occur. As much is going on automatically –and perhaps not even recognize at early stage it can like trying to stop a speeding up train with our hands.

Precognitive and cognitive appraisal of stress and its biological learning consequences result in (nested) loops that can be hard to change as e.g. in Post Traumatic Stress Disorders. It is also decisive for our ability to perform well (at work or in sports/art/music) or find out how to solve specific problems we face. But such negative effects can be relearned using an operational conditioning strategy package (complex problems need more than one strategy) after a psychophysiological test. This is our clinical experiences during 20 clinical years. If you know what and how biopsychosocial medicine "tools" to use and do it very frequently adjusting over time supported by distinct education and information (psychophysiological information assisted by biofeedback at best) very many hard problems can be changed and normalized – which not is (according to my clinical experiences) the normal case with pharmacological interventions for lifestyle related diseases/problems.

[5] Those systems are very complex and when we consider their individual expressions, this complexity is at present knowledge level, not well understood. When it concerns stress physiological systems, their complexity within and between systems and over time are so complex that all efforts must be given the development of measurement of complex systems and accordingly analysis with the development of a differential diagnostic systems where individual expressions/features can be identified, understood and subjected for observable interventions.

Furthermore – as man has started to take over the conduct of the evolution on earth, man has not only challenged the situation for the whole environment, but also gradually, in some way, destroyed her health, e.g. by processing food in a very destructive way facilitating the development of systemic inflammation, the silent killer (see e.g. publications by Prof. Stig Bengmark).



Above illustrate the central position the biological learning, conditioning and social learning have. The work of Pavlov, Wolpe, Skinner and other can now also through understand the functioning of the older brain systems be integrated in other kind of psychologies and humanistic thinking. It is no longer any problem to understand the crucial importance for developing effective ways to cope functional with non-functional, negative stress.

If we understand how our brain systems can work together, we can then use conditioned clusters for learning how to cope with negative stress and its complex consequences on systems crucial for health – prevention and/or rehabilitation. NB also that state dependent and context dependent influences are influencing the planed and performed training process and this must be integrated into the training planning. Of interests is also to conditioning verbalizations with breathing and movements (this argument is based on many years of clinical experiences with work with patients with very severe stress related dysfunctions). Theoretically this can be assumed to "open the door" for verbal influence on physiological processes (more about this in the next presentation), as e.g. a further development of the autogenic training (Schultz) apporah can achieve. This kind of biobehavioral clustering can be used in many direct and indirect stress related dysfunctions where hypertension is one field where clinical data indicate as very promising and effective approach.

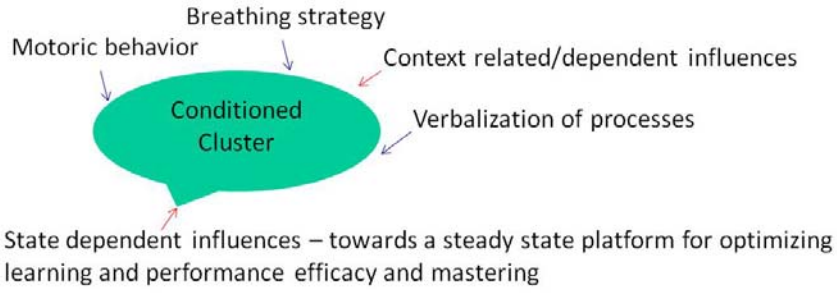
Evolution of our brain – integration crucial for biopsychosocial medicine

Reptilian part - controls muscles, balance and autonomic functions, such as breathing and heartbeat

Mammalian parts - Limbic system as a whole appears to be the primary seat of emotion, attention, and affective (emotion-charged) memories .. interconnections with the neocortex is vast, functions are not either purely limbic or purely cortical but a mixture of both.

Human part – Higher cognitive functions; temporal, serial, verbal – abstractions, reasoning, meta thinking,

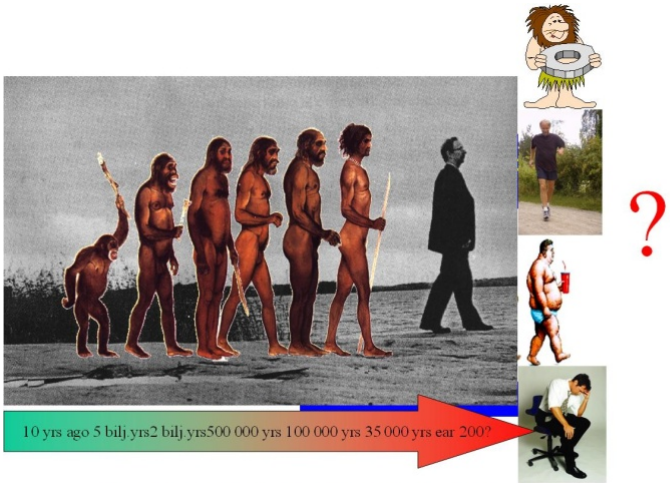
Example of brain integrating strategy cluster below



Summarizing; what consequences do we see now for the future of man when we consider our evolutionary past? The above discussion on brain functions and stress problems are unfortunately not enough. Stress can also be defined as strain/forces on a system. When the pressure is persistent it challenges support systems which in turn influence support systems etc. So much of non dynamic behaviors (excessive computer game playing, excessive TV with or without pornographic addiction, etc., and also change of from biological normal sleep) can cause such kind of stress that lead to an organic kind of stress activation. But this is not enough, if

most (?) processed food today promote development of systemic inflammation (called the silent killer while also promoting the development of different cardiac diseases, different forms of cancer and cognitive problems (Alzheimer, etc.) this might be one of the most crucial problem to deal with.

Together with the above, if non-functional stress is not well understood, early identified and effective interventions exists then the future does not look promising! What does science do here? And what need to be done? Some of these issues will the next part deals with.



Still metabolism is the platform for life

The solution for evolution of health in man?

Basically the possibility I see, is expressed in what I call the "Aristotle code or principle" … based on biological and social learning using the man as a health creator-approach for its implementation. This will be elaborated some in the appendix below but more in the next presentation in this series of presentations.

PART TWO

Evolution and health focusing on the GAP between every day needs and what health care/medicinal science address

(Below is a brief summary of a presentation Eskilstuna October 17th 2008)

An Integrated psychophysiology and *artificial intelligence platform* as a prerequisite for effective behavioral medicine treatment of society- and lifestyle related diseases! Part 1: Scientific focus

Bo von Schéele

School for Innovation, Design & Engineering, Mälardalen University & Swedish Center for Stress Medicine

Personal background; my background as pianist and conductor where thinking must be both reductionistic and holistic anchored has substantially influenced my scientific activities. But also hard fighting very early (1 y) post traumatic induced stress syndrome (PTSD) and probably related ADHD as a "working patient" without been a real patient during many years while understanding health care systems did not understand PTSD (1954-79) trying to via scientific amateur studies and then later in life from 1979 formal studies trying to understand basics leading to my doctoral presentation 1986 which was focused on what I (and very many others) would have needed (multi faceted behavioral medicine strategies) many years before (and still is needed for many). Then continuing with own company while I could not see how I could continue what I wanted within the academic world at that time.

This presentation focuses on present state & possible future for health care approaches out of

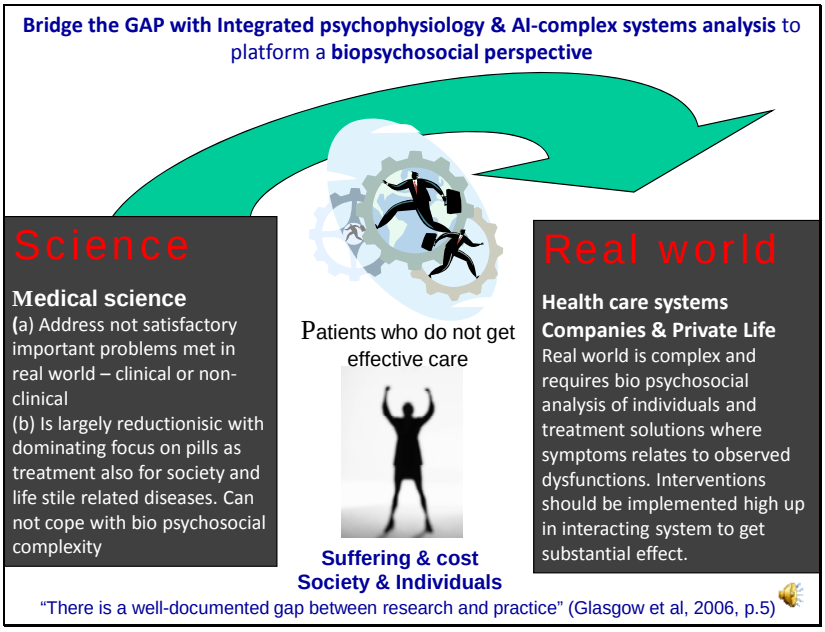
Scientific focus (Part 1)

- Knowledge and scientific paradigms
- Methodology
- Data analysis methods

Clinical focus (Part 2a and 2b)

- Prevention, clinical and non-clinical issues – assessment and treatment focuses

This is presentation content the scientific part, which platform the next presentation on clinical applications).



Much is to be said of this gap – more will come.
Behavioral medicine (medicine means art of healing – not pharmacological intervention) can be roughly summarized as;
"We are what we repeatedly do. Excellence, then, is not a temporary act, but a habit" (Aristotle).

Consequence 1: My history predicts my future - if not;

Consequence II: Through repeated goal-directed behaviors I change its influence (George Kelly uses the expression to choose to be or not to be enslaved by the history) and create needed habits". By repeated behaviors - good or bad – they are step by step made habitual.

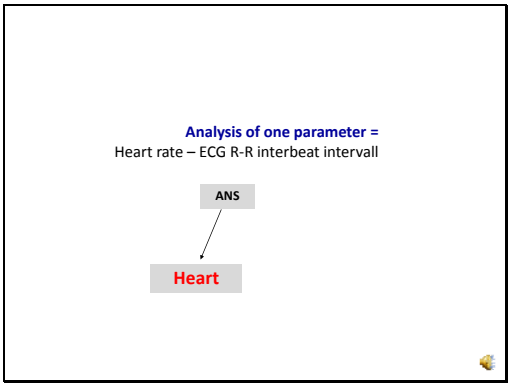
As well as from educational point of view; "Give a man a fish and he will be satisfied for a day, if he learns how to fish, he will be satisfied for his whole life, but he needs (health promoting) tools, supervision, social encouragement, shared enjoyment, and something to fish to platform his quality of life (modified old proverb).

If we do not change the present dominating reductionistic medical focus (the paradigm, related methodology …) we will not substantially change peoples' health constructively. Much is argued in the past without notice, e.g. Lazarus, et al suggestion "Since appraisal, emotions, and coping patterns ebb and flow in a person's changing commerce with the environment, a new type of assessment is needed that measures process and variation within individuals and across situations, as well as structure and stability" (Lazarus, Cohen, Folkman, Kanner & Schaefer's, 1980, p. 113)". Crucial is to use integrated and applied psychophysiology as a platform for behavioral approaches to medicine otherwise we will not increase efficacy in health promotion, stress prevention, differential diagnostic analysis and biobehavioral treatment of negative stress – indeed , a disaster for society and man!

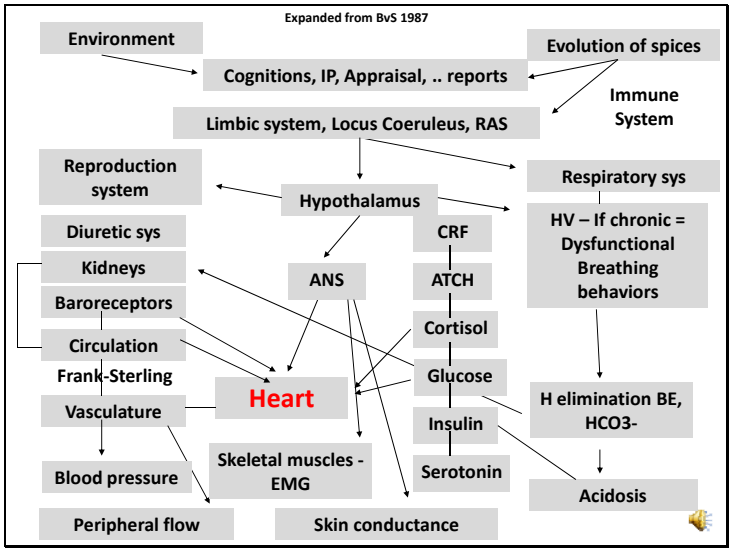
Evolution of heath in man: biopsychosocial medicine covers the GAP?

Subjects	Presence	Needed	Solution	How to do it
A – KNOWLEDGE				
Theory, paradigm, P olitical approved	Mainly Reduction-ism prevents an integrated multi-faceted behavioral based under-standing impossible	Understand an in-tegrated biopsycho-social approach and understand complex interactions in normal life	Concrete useful bio psychosocial paradigm – systems integration	Develop and validate empirically a concrete biopsychosocial systems approach based on the below
B - EMPIRICAL VALIDATION				
Methodology	Nomothetic	Idiographic also	Relevant designs	Develop designs
Parameters "Quality" of data	Mostly subjective, & non-dynamic & averaged data	Ind. Biopsychosocial more sophisticated pattern recognition	Develop the argu-ment by "Lazarus 1980" (next page)	Develop clin. & non-clinical integrated psychophysiology
Data analysis	Traditional statistical treatment	Complex Systems analysis	Integrate human and artificial intelligence	Concrete Complex Systems Analysis of psychophysiological social data
C - CLINICAL ISSUES				
Intake protocols	Anamneses + other measures	+ Psychophysiologi-cal Behavioral Test	Differential diagnostic system	Empirical work
Interventions	Mainly no time for explanation of dys-functions & support	Knowledge based explanation & personal guidance	The "Man as a health creator" - approach or the like	Education and training

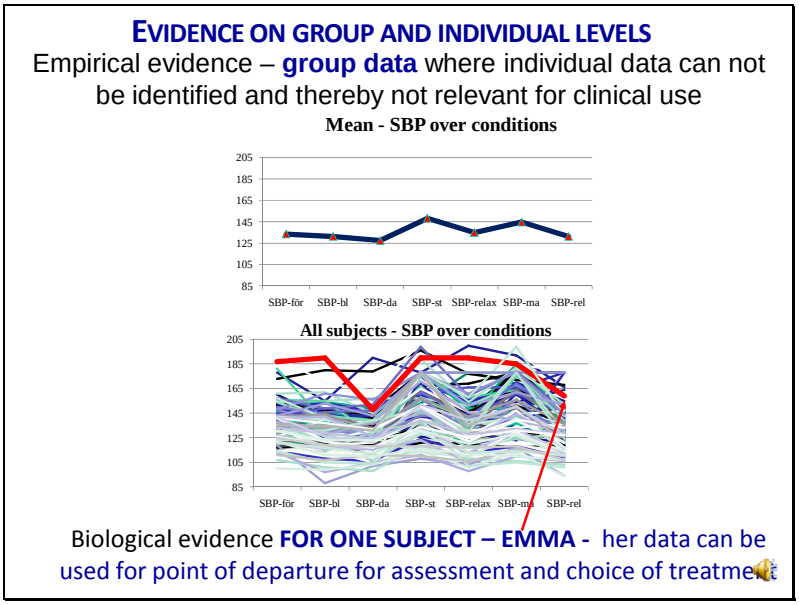
I think the slide above speaks much for itself – but some additional notes; manly the message is that science must adjust to reality which means a bio psychosocial paradigm. This has been discussed over the years but not scientific developed, concretized and understood – only empty work at worsened and discussed without put into work by skilled scientist at best – but not enough. The reason is not easy to realize but the human brain – independent how skilled we are – cannot well enough understand complex systems and its interactions within and over systems. I will here discuss how this can be solved thought extremely much work integrating complex systems and artificial intelligence (AI) analysis of integrated bio psychosocial data identifying also individual... in terms of Lazarus (see above)



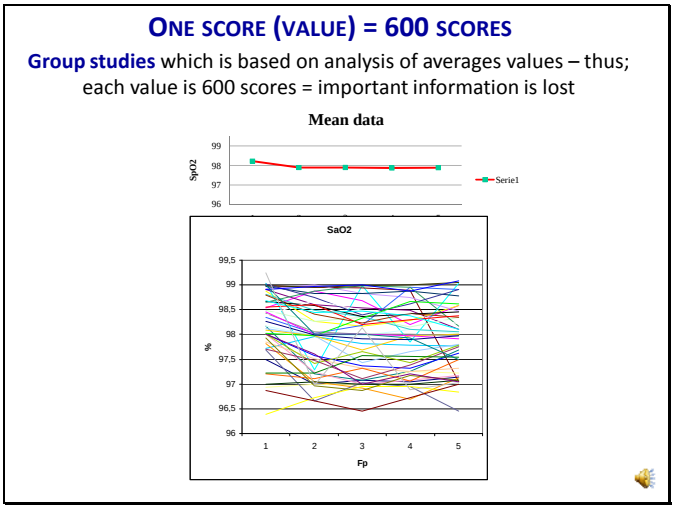
This slide message is; a basic biological principle is that; "One must sample different parameters of cardiovascular function in order to understand the patterned response of responses of the cardiovascular system as a whole. It is abiological to assume that HR responses, for examples, occur in isolation from other changes in cardiovascular function" (Williams, Bittker, Buchsbaum & Wynne, 1975, 427-238, Psychophysiology) as well as in related systems as the autonomic and metabolic ones.



This slide discussed simply that one parameter must be regarded in the light of its context/reality; "... If we break up a living organism by isolating its different parts it is only for the sake of ease in analysis and by no means in order to conceive them separately. Indeed when we wish to ascribe to a physiological quality its values and true significance we must always refer it to this whole and draw our final conclusions only in relation to its effects in the whole" (Bernard, 1865) in A Despopoulos & Silbernagl (1991).

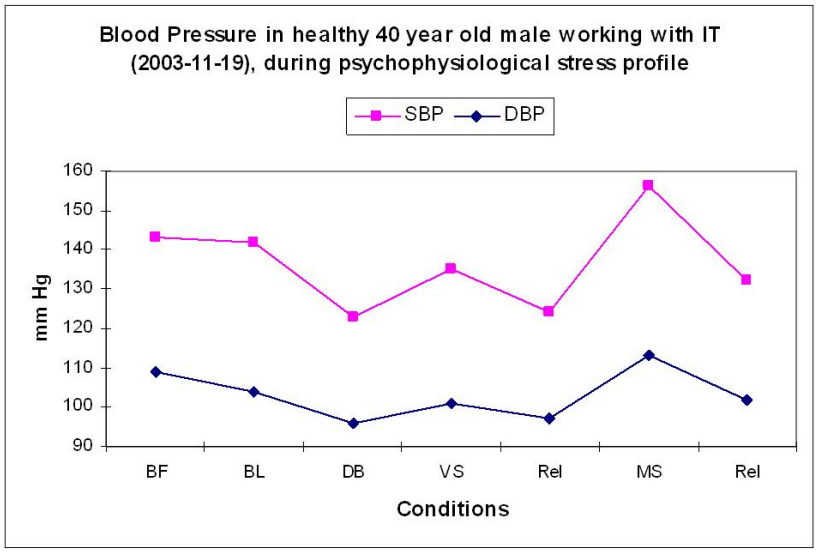


This slide focuses on mean data (upper graph) and individuals' data. Very different information but it is the same data/study. In group studies often individuals are not identified as individuals. Of clinical interest is individuals' behaviors (see above the Lazarus quotation). Here, in the lower graph we see – or perhaps not see – the complexity of individuals' data. One subject, Emma shows a change in her systolic data which really tell us something important. She has never practice breathing but when she does relaxed breathing for 2 minutes she change substantially her systolic blood pressure, indeed very much! What does it indicate? Shall she get pills for her hypertension or practice her already present skill – her breathing behavior! But why just train one kind of strategy. Our psychophysiological behavioral medicine treatment/education/training include health promoting food, exercise/motion, cognitive training, social... but basically she has already a skill! Use it and go on – operational conditioning will make a normal blood pressure a normal behavior, a habit. We have very many cases showing this – also patents who for 30 years using pharmacological substances without any satisfactory effect who in 9 weeks with behavioral medicine strategies can normalize. Actually something to pay attention to from a medical perspective? Without research founds it is not easy to do requested group studies, especially when using clinical relevant multifaceted strategy packaged.



This graph shows one large problem with many studies (some discussed above); here student are measured during base line (asked to relax), reading test, base line, math test and finally base line in their class room. Although every individual is shown (seems complex?) each score is a mean score! Yes each score is a mean score. Missing much information about what happens during many minutes only showed as one single mean value! In clinical work we know that much happens also during base line – important information which is in many studies excluded! Is that really ok? You can say "it is too complex to understand" but reality is what counts – or? Again, (I am deeply disappointed to say this) is it ok to treat individual variation as errors, is this really knowledge development? What is focus of interests? Humans - or? Shall man adjust to science or science to man? Again – we cannot just hind behind " it is too complex" - without at least trying to do something substantial!

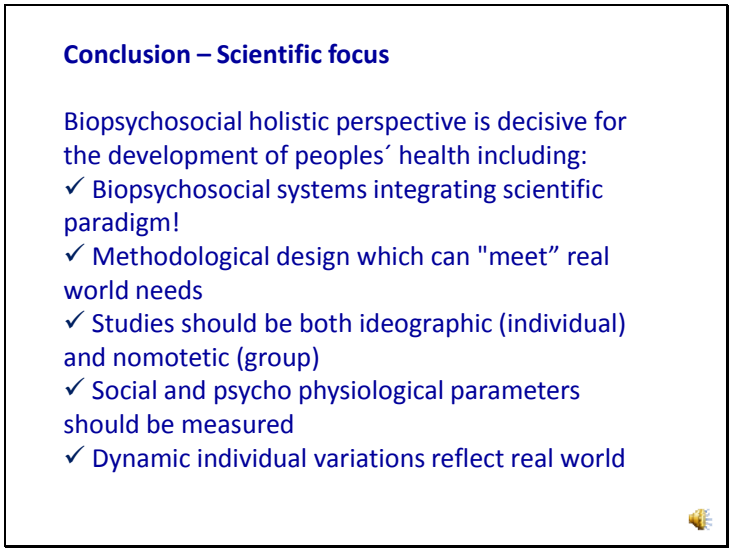
This man had no idea that he might have hypertension



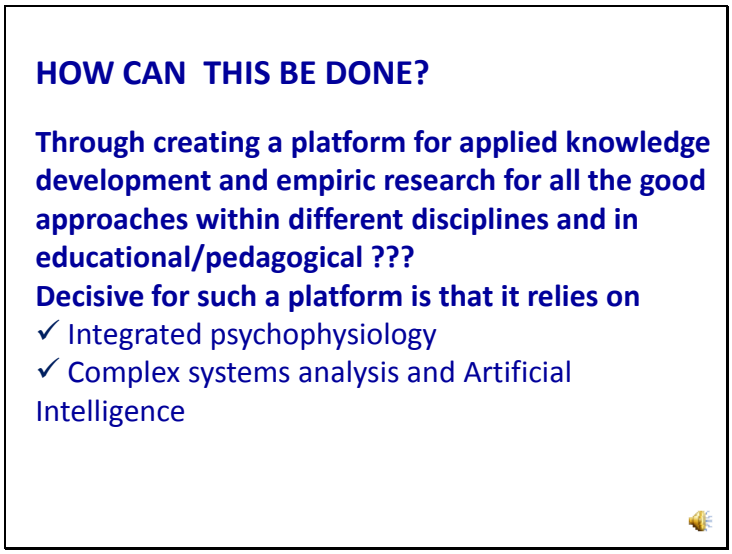
BF=Before, BL=baseline, DB = deep breathing, VS = verbal stress, Rel = relaxation and MS = math stress – each 2 minutes

This slide shows a man at his desk at work doing a psychophysiological test. He did not know about his high diastolic blood pressure (DBP). But look at his breathing effect! Quite nice? This fellow is really skilled – substantial effect of breathing. He did not know this either! Just to go on practicing. Clinical experiences tell us

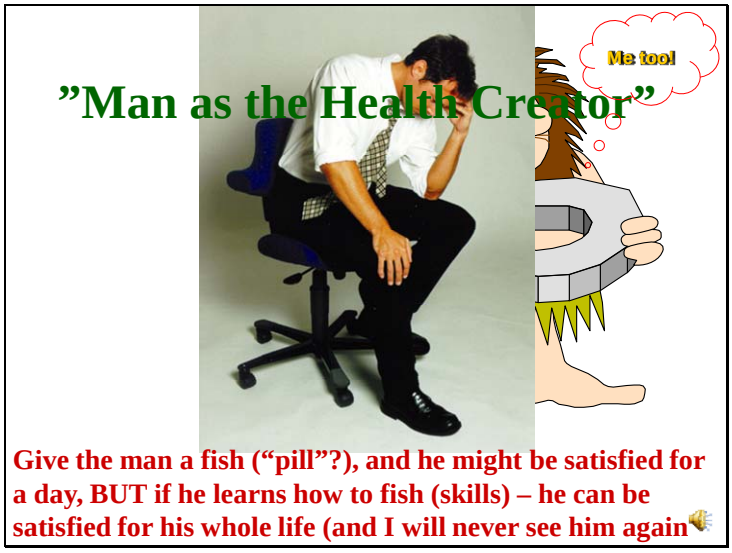
he will normalize his blood pressure within 1-3 month depending on other factors as his diet, exercise, life planning, social factors, and ….



My conclusion is optimistic today as it also was in 1987 (expressed in "Cognitive Medicine", a manuscript from a series of lectures in Seville, Spain, where I predicted a rapid development of systems theory within medicine facilitation the development of cognitive-behavioral-physiological medicine – I was wrong about the speed, but I think now the time is mature for this – a scientific well anchored re-evolution in medicine) about we can "do it" - increase peoples' health if we really can get free from economical pharmacological interests and focus on humanity as well as the power of peoples' own capacity to influence their health status when they know what and how to do and get support and encouragement!

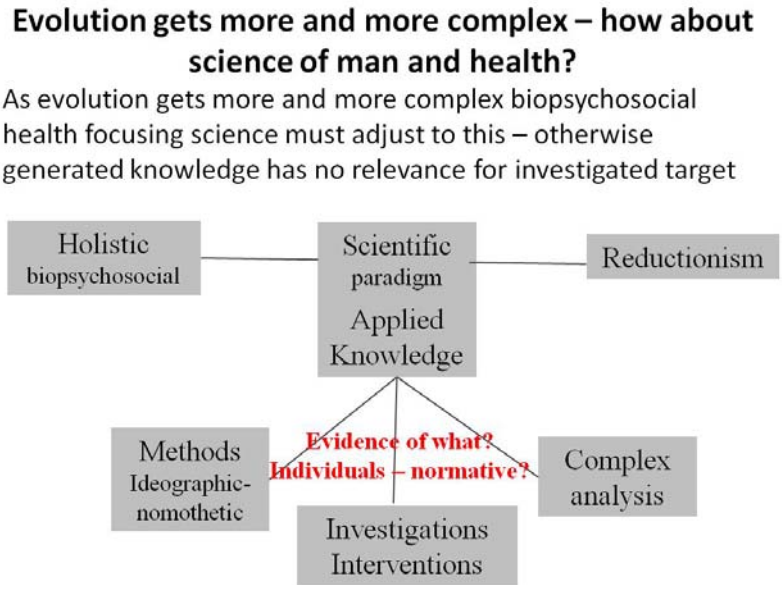


I think the slide speaks for itself.



This metaphor is developed by Bo von Scheele based on George Kelly’s (1955) “Man as a scientist”-approach! 1987-2002-?

Considering the above – what kind of science do we need to understand and improve health in individuals – people’s health? Evolutionary perspective increases further the argument to improve the scientific platform for health promotion and effective stress promotion and rehabilitation.



Never forget our roots! We have a long evolutionary past – and we are “passing on” the evolution!

Man as unique in the sense that we have expanded the ”message of DNA to a new kind of serial form” of information communication – and there we might have the solution - or the end.

Just before September 11 I wrote an introduction synopsis for a presentation in San Diego a couple of weeks later.

”The civilization” on earth brings the Evolution into confusion ending up in an (going into) illusion?
Who is the selector? Who brings the stress? Meanwhile -> the development goes faster and faster!
- Any alternative to a …”

My view today is somewhat more optimistic while I see a solution – my hope is that other see it also – and it must not be “mine” but one possible – although I see no other in sight! Grateful for learning any significant alternative!

Appendix (the below will be much more elaborated in the next presentation):

IBEG, Individual Biological Evidence guide lines - to see what can and needs to be see and "man as a health creator"-approach

Evidenced base treatment in clinical settings is of importance I think everybody agrees upon BUT what is actually understood with the concept evidence in methodological and (ecological, internal) validity terms?

Evidence, for what, in whom? Much studies concerns group significance where correction for individual variation is done. But is this what we clinicians what to see, understand – know of? It can have academic interests of course what a group study tells about what is of relevance for my patient? In the 1970-80 we discussed very much the need for idiographic studies (e.g. by Lamiell). Without going here into details (will be in the next presentation) I would like to suggest something like IBEG (Individual Biological Evidence guidelines – my way to express it) while IBEG has high relevance for identifying individual significance decisive for clinical work –ideographic!

Normally empirical designs aimed at identifying IF a treatment has effect compared to controls (doing ..), that is, it can identify if change (effect) can be attributed to the treatment experimental conditions. IBEG does focus on document changes in crucial parameters identified as dysfunctions at intake and our of a a priory prediction about result follow the clinical intervention with repeated measurements – that is, treatment changes are of biological significance (given they are of course) but it does not identify what in the treatment package is causing the change while the very many factors involved in a clinical intervention are too many (adding also not known factors confounding factors) and together with their expected synergy effect cannot with present methodological knowledge be separated and analyzed in studies (although pharmacological medicine try to force this on behavioral medicine studies). In parallel with physiological data psychosocial data is collected and analyzed together with physiological ones.

Summarizing
IBEG can observe, identify and analyze individual changes according to (a) during intake identified disorder(s) and relating it (them) to observed problems and out of this analysis (b) a priory predict changes in terms of outcome result(s). Then the treatment is flowed by measurement. It does not say what parts in the intervention (intended or not known) has this effect. We can only refer to all possible factors but we can still motivate the intervention while it shows predicted results. At early stage intervention can be modified when data "says" so.

When the individual is her/his own control we can somewhat increase our conclusions about what can be attributed to the effect – but not very much. As biofeedback (and predicted change in observed parameters) follows the intervention process quite hard facts have the potential to guide patients towards the predicted goal. We also do biofeedback test so at intake see what modality and strategies works and use them for continuing. Patients have often capacities they do not know of or do not trust them to use. When they see what good things they can do they get highly motivated.

Furthermore, when we use Artificial Intelligence analysis (e.g. what we do in our group at www.mdh.se) we can do a kind of analysis which not only can develop a differential diagnosis for stress related problems but also can identify between and within individuals characteristics which also guide the treatment development.

The above ask the question; should we identify individuals' variation to (a) adjust for group significance or (b) get clinical evidence for interventions?

My conclusion:
IBEG requires integrated psychophysiological behavioral medicine which has the potential to become no 1 in treatment of life style- and society related diseases/problems and pharmacological interventions as a complement when needed – not alternative. That is a revolution for present main stream medicine!

I think the discussion above will be welcomed by pharmacological medicine while IBEG can in some cases also be used for pharmacological studies. When individual significant results can be shown it will indeed increase argument for the intervention studied.

To identify dysfunctions, which are hypothesized to trigger the symptoms is important while dysfunctions identified in psychophysiological tests can be addressed by integrated biofeedback assisted training.

Below a brief summary of an IBEG "strategy package" (similar approaches are common within clinical psychology and psychophysiology)

1. Psychophysiological tests analyzing individual's base line, reactivity and recovery as well as specific test, e.g. breathing "chemistry" and influence on heart rate variability and capacity to influence crucial systems using also biofeedback.
2. Explaining findings for patients (especially relations between observed dysfunctions and the patent's problems/symptoms) and together with the patient find out how needed biobehavioral training can be accomplished.
3. Do a priory prediction of effects/outcome
4. Do the intervention/education/training
5. Evaluate repeatedly and do cut off (a) when predictions is obtained or (b) when interventions are not effective enough and change strategies (planned cut off planned for this)
6. Documentation to data base where data can be used for clinical analysis and research

In the next presentation focus will be on "the Aristotle code", Man as a Health Creator and Mastering Stress and learn how to develop functional stress based on the discussions in this presentation

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[i] Neal Postman; “What Huxley teaches is that in the age of advanced technology, spiritual devastation is more likely to come from an enemy with a smiling face than from one whose countenance exudes suspicion and hate. In the Huxleyan prophecy, Big Brother does not watch us, by his choice. We watch him, by ours. There is no need for wardens or gates or Ministries of Truth. When a population becomes distracted by trivia, when cultural life is redefined as a perpetual round of entertainments, when serious public conversation becomes a form of baby-talk, when, in short, a people become an audience and their public business a vaudeville act, then a nation finds itself at risk; culture-death is a clear possibility " .. Who is prepared to take arms against a sea of amusements? To whom do we complain, and when, and in what tone of voice, when serious discourse dissolves into giggles? What is the antidote to a culture’s being drained by laughter? (Postman, 1985, p 155-156) .. ”What afflicted the people in Brave New World was not that they were laughing instead of thinking, but that they did not know what they were laughing about and why they had stopped thinking” (p. 170).