Modern medicine between hope and failure

Modern medicine (ca. 1870)

“Medicine possesses life modifiers. […] It can therefore modify life at all levels. All the science consist therefore of knowing how to handle these modifiers in a safe way, through the knowledge of the laws governing the body healthy, sick and modified by drug actions.”

Claude Bernard (1813-1878)
Principes de médecine expérimentale (1858-1877)

Modern medicine failure (ca. 2010)

“Despite extraordinary advances that have been made to date in medical fields, we have a long way to go in understanding why different individuals experience disease or respond to treatment differently.”


Personalized medicine: “the use of genomic, epigenomic, exposure and other data to define individual patterns of disease, potentially leading to better individual treatment.”

**PM’s paradigm shift**

**Modern medicine (ca. 1870)**

“Medicine possesses life modifiers. [...] It can therefore modify life at all levels. All the science consist therefore of knowing how to handle these modifiers in a safe way, through the knowledge of the laws governing the body healthy, sick and modified by drug actions.”

*Claude Bernard, Principes de médecine expérimentale (1858-1877).*

**Personalized medicine (ca. 2030)**

**Personalized** medicine possesses **individual** life modifiers. [...] It can therefore modify **individual** life at all levels. All the science consist therefore of knowing how to handle these **individual** modifiers in a safe way, through the knowledge of the **data** governing the body healthy, sick and modified by **personalized** drug actions.

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**Paradigm shift. From classical nosology to data based taxonomy**

« Building a biomedical Knowledge Network for basic discovery and Medicine. At the center of a comprehensive biomedical information network is an Information Commons that contains current disease information linked to individual patients and is continuously updated by a wide set of new data emerging though observational studies during the course of normal health care. »

The (neglected?) role of contextual determinants of health

Multiscale data integration ⇔ Multiscale integrated interventions

- Omics knowledge
- Clinical research
- Medical practice
- Public health
- Politics & Policies
Biosocial heteronomy. Politics of the exposome

Data | Knowledge | Interventions

Biosocial heteronomy. Politics of the epigenome

Data | Knowledge | Interventions

An epigenetic mechanism links socioeconomic status to changes in dopamine-related brain function in high-risk children.


Biosocial heteronomy. Politics of DOHaD


Biosocial heteronomy. Politics of the microbiome

Nature, Vol. 518 No. 7540_suppl ppS1–S32
(26 February 2015)
1st stage of integration

2nd stage of integration

**Towards (a more) integrative medicine?**

### Personalized medicine

**Personalized** medicine possesses individual life modifiers. [...] It can therefore modify individual life at all levels. All the science consist therefore of knowing how to handle these individual modifiers in a safe way, through the knowledge of the data governing the body healthy, sick and modified by personalized drug actions.

### Integrative medicine

**Integrative medicine** possesses individual *and biosocial* life modifiers. [...] It can therefore modify life at all levels. All the science consist therefore of knowing how to handle these individual *and biosocial* life modifiers in a safe way, through the knowledge of the individual *and biosocial* data governing the body healthy, sick and modified by individual *and biosocial* actions.”

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**Is PM compatible with “common health”?**

![My health diagram](http://qphc.org/personalized-health-care/)

- **My genome**
- **My phenotype of my health problems**
- **My health knowledge**
- **My health records**
- **My health care team**
- **Monitoring of my health**
- **My lifestyle**
- **My family background**

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**Unil**

http://qphc.org/personalized-health-care/
### Tensions in PM

<table>
<thead>
<tr>
<th>ME MEDICINE PATTERN</th>
<th>WE MEDICINE PATTERN</th>
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<tbody>
<tr>
<td>Threat and contamination</td>
<td>Safety and protection</td>
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<tr>
<td>Narcissism and « bowling alone »</td>
<td>Altruism and « bowling together »</td>
</tr>
<tr>
<td>Corporate interests and political neoliberalism</td>
<td>Public interests and political solidarity</td>
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<tr>
<td>The sacredness of personal choice</td>
<td>The relativity of personal choice</td>
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Donna Dickenson (2013), Me Medicine vs. We Medicine. Reclaiming Biotechnology for the Common Good, Columbia University Press.

### Illustration: the constantly controversial issue of the vaccination

<table>
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<td>1905</td>
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<td><img src="image1.png" alt="Image 1" /></td>
<td><img src="image2.png" alt="Image 2" /></td>
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Illustration: the constantly controversial issue of the vaccination
Illustration: Individualism vs. Solidarity

ME MEDICINE PATTERN

WE MEDICINE PATTERN

Illustration: Commodification vs. Commonalization

ME MEDICINE PATTERN

WE MEDICINE PATTERN


Towards (a more) integrative medicine?

Clinical practice and research

Integrative Medicine

Biomedical research

Knowledge interventions

Knowledge

Socio-political research and action

But also produce critical knowledge and contribute to develop actions related to societal dimensions of health.

Trying to understand what is going on

PARED - Parental Responsibility, Epigenetics and DOHaD: Emerging sociotechnical imaginaries of reproduction in the age of epigenetics

Francesco Panese

Luca Chiapperino

Umberto Simeoni
“Science is organized knowledge. Wisdom is organized life.”
Immanuel Kant

Thank you for your attention

francesco.panese@unil.ch