



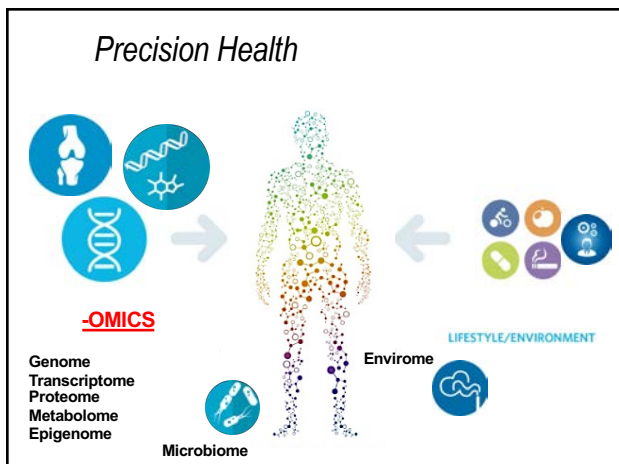
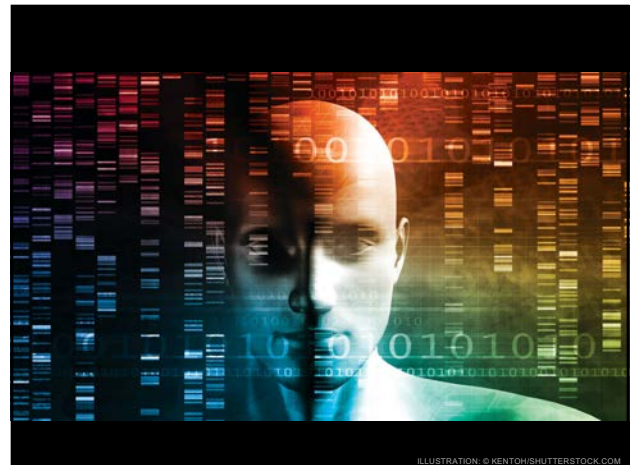
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THE SCREENOME: -OMICS FOR SOCIO-ENVIRONMENT & BEHAVIOR LIFE IN MEDIA

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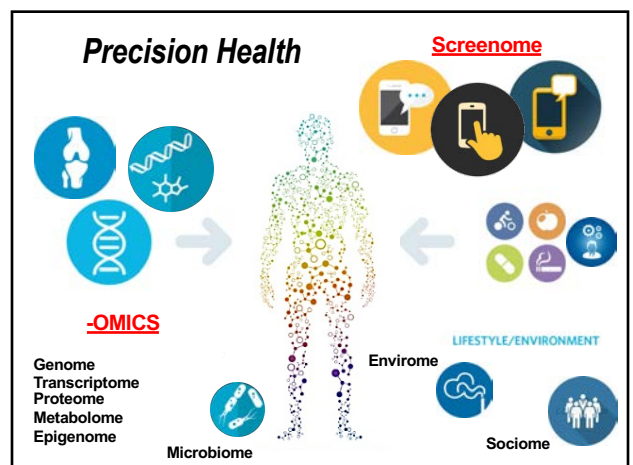
Influences on Health & Disease

The diagram consists of concentric circles representing layers of influence on health and disease, from the innermost to the outermost: Genome, Transcriptome, Proteome, Metabolome, Microbiome, Epigenome, and Exposome. A human figure is shown in the center of these layers.

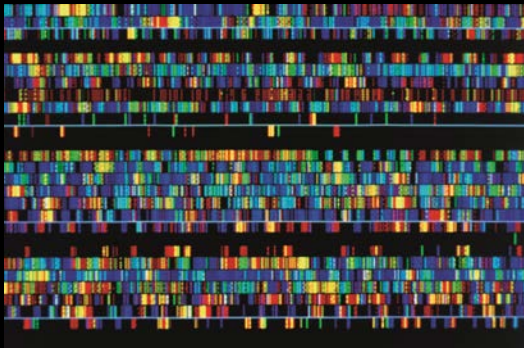
- Tremendous progress in measuring ...
- **individual biology**
 - genome, metabolome, microbiome
- **physical/physiological characteristics**
 - heart rate, accelerations, glucose
- **physical environmental exposures**
 - GPS location, air contaminant exposure

The Screenome

- Individuals' socio-environmental exposures and behaviors in free-living contexts are *often unmeasured*
 - social interactions, media exposure, commercial interactions, information exposure, etc.
 - Measurement often limited to methods such as questionnaires and logs
- **Screenomics** starts to fill the gap – allowing a large but *previously unobserved* portion of peoples' lives to be observed and assessed – their *screenome*



Genome Sequencing



James King-Holmes / Science Photo Library

The diagram illustrates four types of chromosomal mutations. At the top, a normal chromosome is shown with four genes labeled A, B, C, and D in sequence. An arrow above the chromosome points to the right, labeled "Direction of gene expression". A bracket below the first two genes (A and B) is labeled "Gene". Below this, three scenarios are shown:

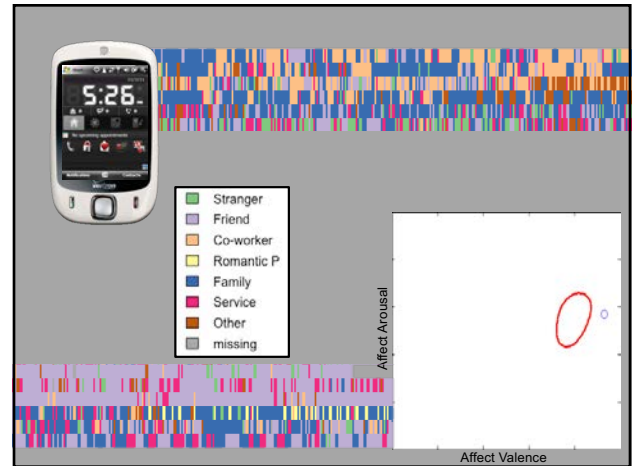
- Insertion:** A new gene, labeled E (yellow), is added between genes A and B. The sequence is now A, E, B, C, D.
- Deletion:** Gene A (purple) is missing from the sequence. The sequence is now B, C, D.
- Substitution:** Gene D (orange) is replaced by gene A (purple). The sequence is now A, B, C, A.

- Carr, 2014

Socio-ome Sequencing

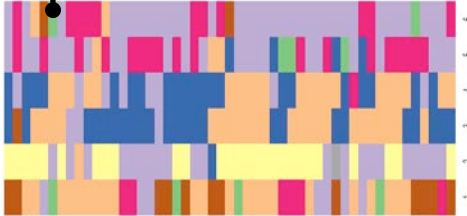
Legend:

- Stranger
- Friend
- Acquaintance
- Romantic, P
- Parent
- Family
- Service
- Other
- Missing



Soci-ome Alterations

“Gene” expression: **Affective Well-Being**



- Structural variation/alteration (Aging)
 - Changes in social experience → recovery and well-being
 - Convoy (Antonucci, 2001); SOC (Baltes & Baltes, 1990); SST (Carstensen, 2006); SAVI (Charles, 2010)

Socio-ome: Extracting a Typology

– Genotypes to Sociotypes

Distance Matrix

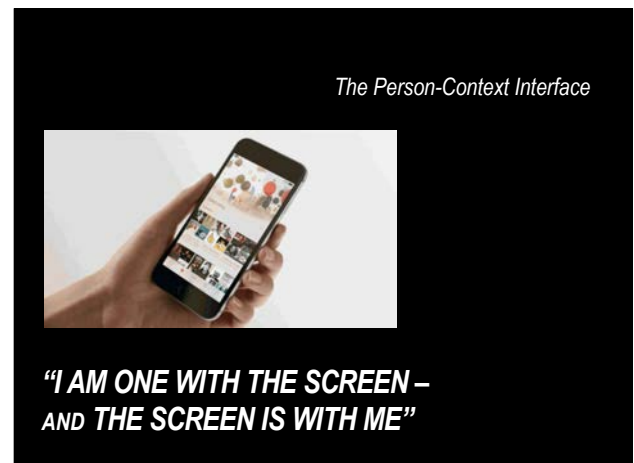
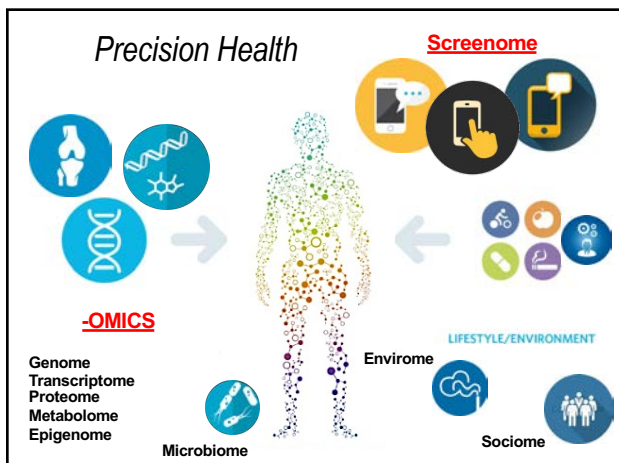
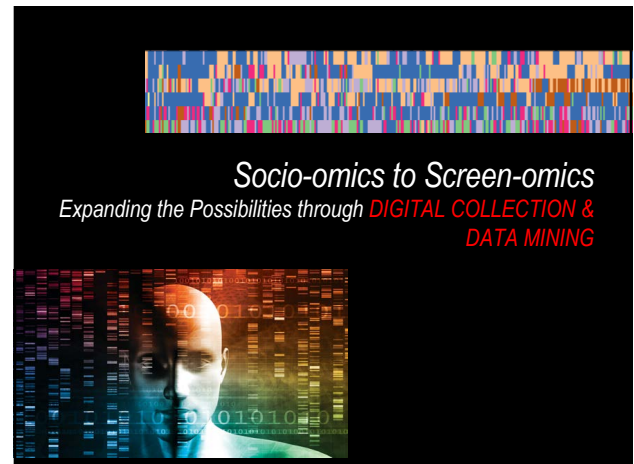
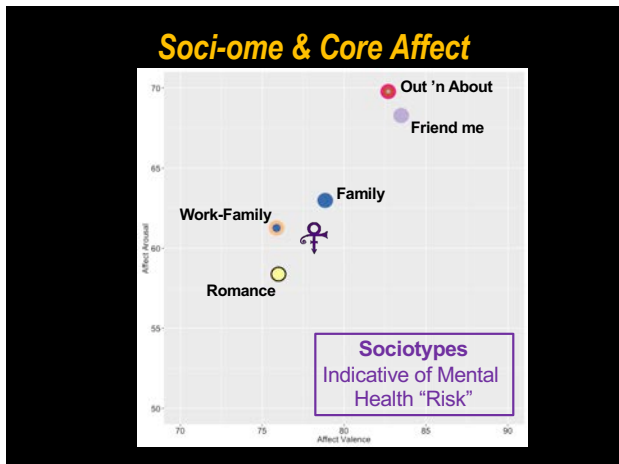
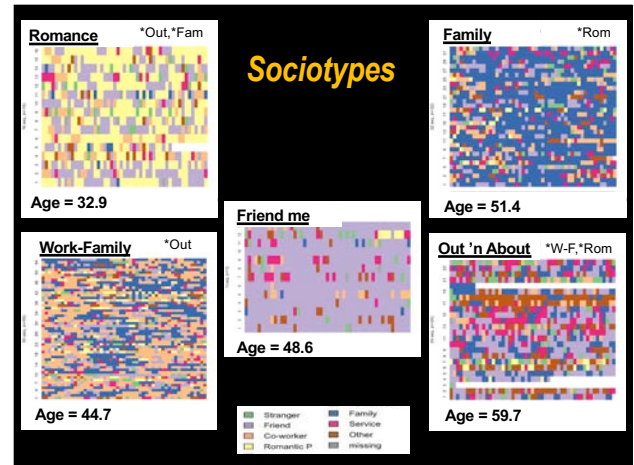
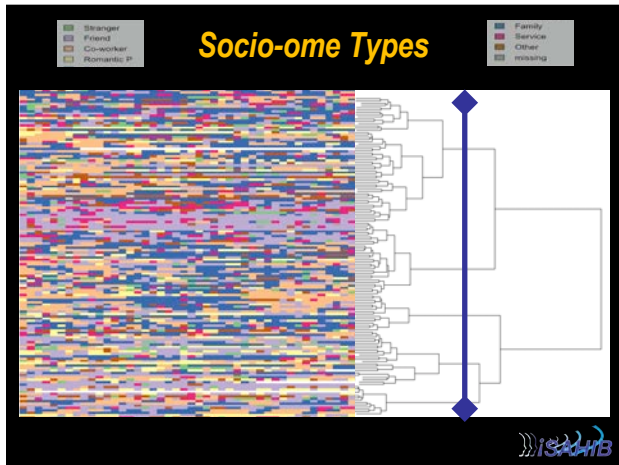
0					
21	0				
40	36	0			
46	41	13	0		
29	29	41	46	0	
34	35	28	28	43	0

Legend:

- Stranger
- Friend
- Co-worker
- Romantic P
- Family
- Service
- Other
- missing

Edit Distance (Needleman-Wunsch Algorithm) + Cluster Analysis:

- Insertion
- Deletion
- Substitution

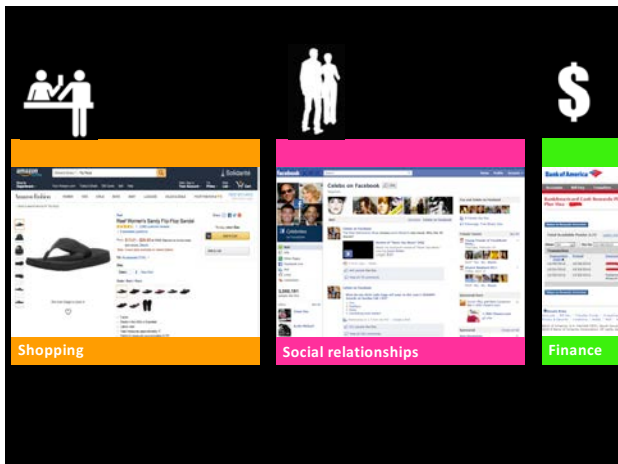
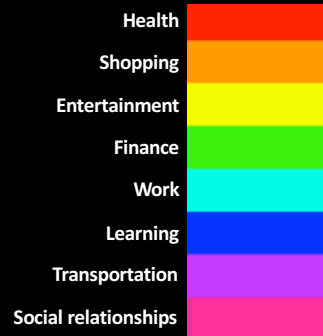


The Person-Context Interface



**"I AM ONE WITH THE SCREEN –
AND THE SCREEN IS WITH ME"**

LIFE / INFORMATION DOMAINS



Digitization



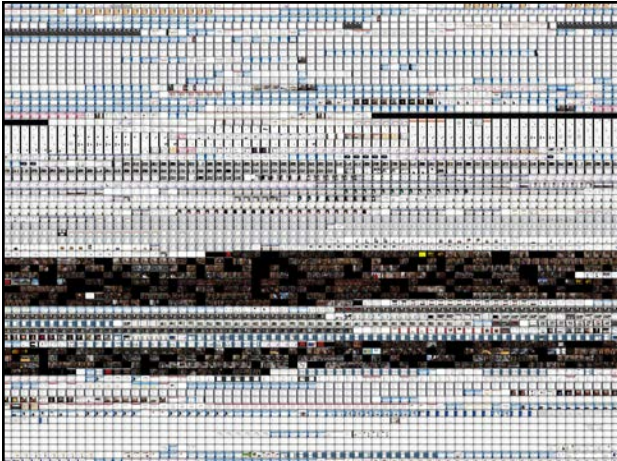
Consolidation



Unobtrusive Monitoring



1. Digitization
2. Mediatization of life
3. Consolidation of devices
4. Unobtrusive Monitoring
- 5.



The Pause Button



LIFE / INFORMATION DOMAINS

TRANSACTIONS INTEGRATED/FRAGMENTED ACROSS ...
TOPICS, LOCATIONS & SCREENS



Person-Specific
Blending of Experiences
~ 19s



