information and meaning

info-20002: foundations of informatics
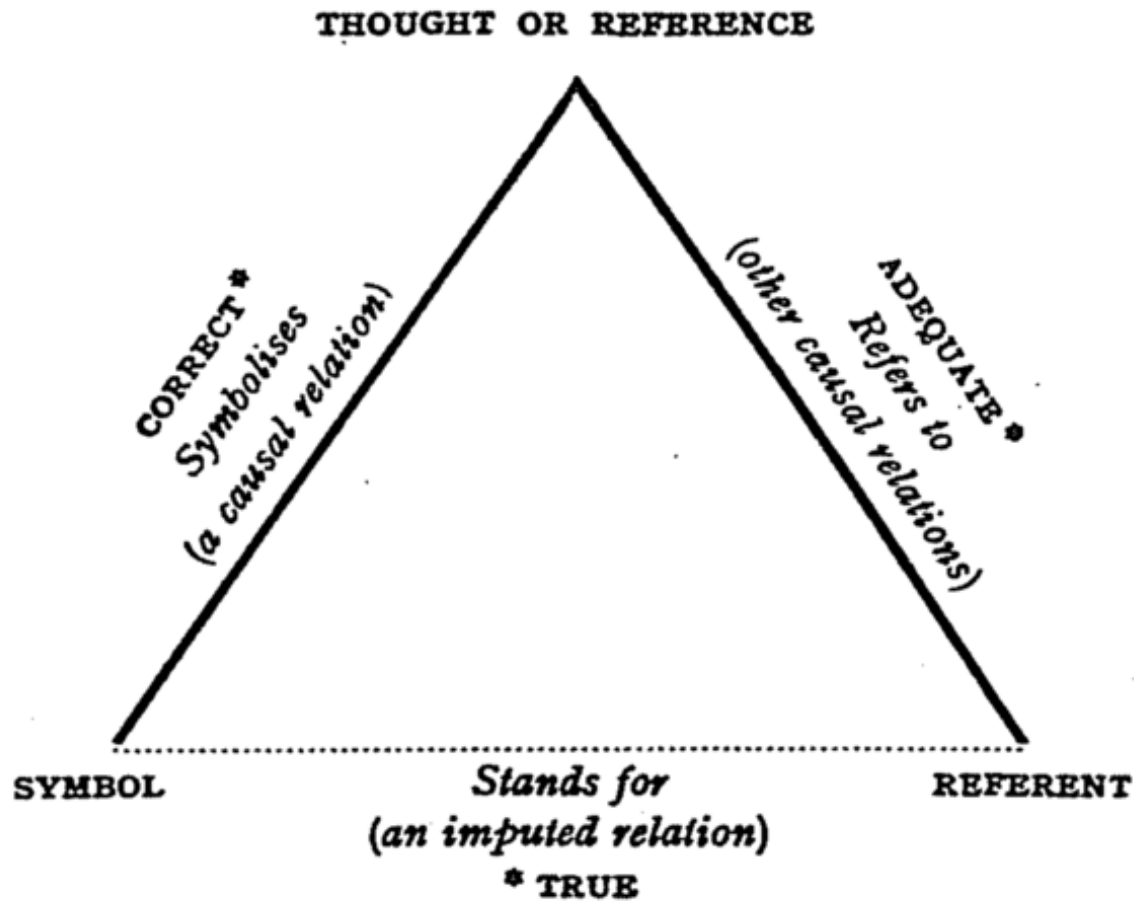
information in context

- Data as signals (Shannon's Information) ignores the meaning of its content
- Information in context considers observers (subject) and what the information means to them
- Information as a relationship between the subjective and the objective
- As information is shared, information is also a form of communication.

"Information is the transfer of form from one medium to another. In the context of human information-exchange, 'communication' is a more descriptive term than 'transfer', and since form is about relationships, we can tentatively define information as the communication"

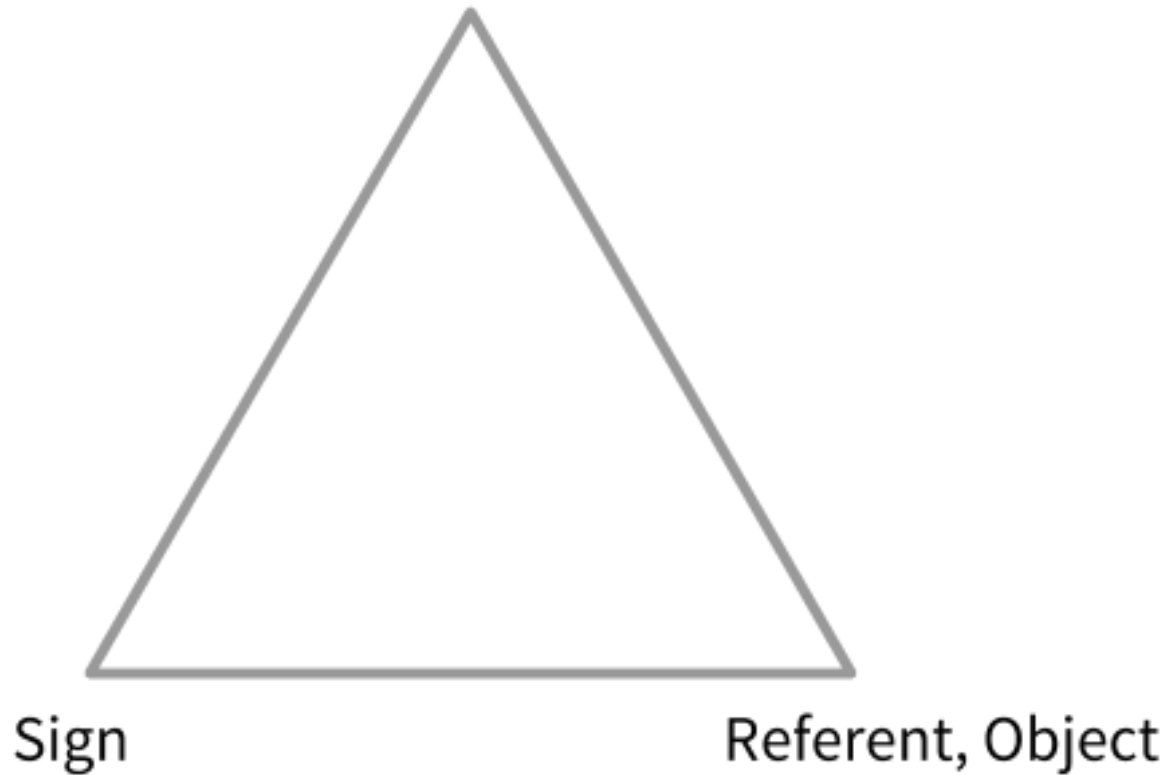(von Baeyer, Information, The New Language of Science, p. 25)

information as signs

- Within communication, information acts as a language
- Information as a system of signs
- Semiotics: study of meaning making, formal doctrine of signs (Peirce)
- It includes:
  - *Syntactics*: formal structures of signs, grammar/rules of signs construction and relation.
  - *Semantics*: relation between signs and objects (the things to which they refer) in the mind of the observers.
  - *Pragmatics*: relation between signs and their context (of the observer that interact with the things).

THOUGHT OR REFERENCE

CORRECT *
Symbolises
(a causal relation)

ADEQUATE *
Refers to
(other causal relations)

SYMBOL

Stands for
(an imputed relation)
* TRUE

REFERENT

C. K. Ogden and I. A. Richards (1923). **"The Meaning of Meaning"**
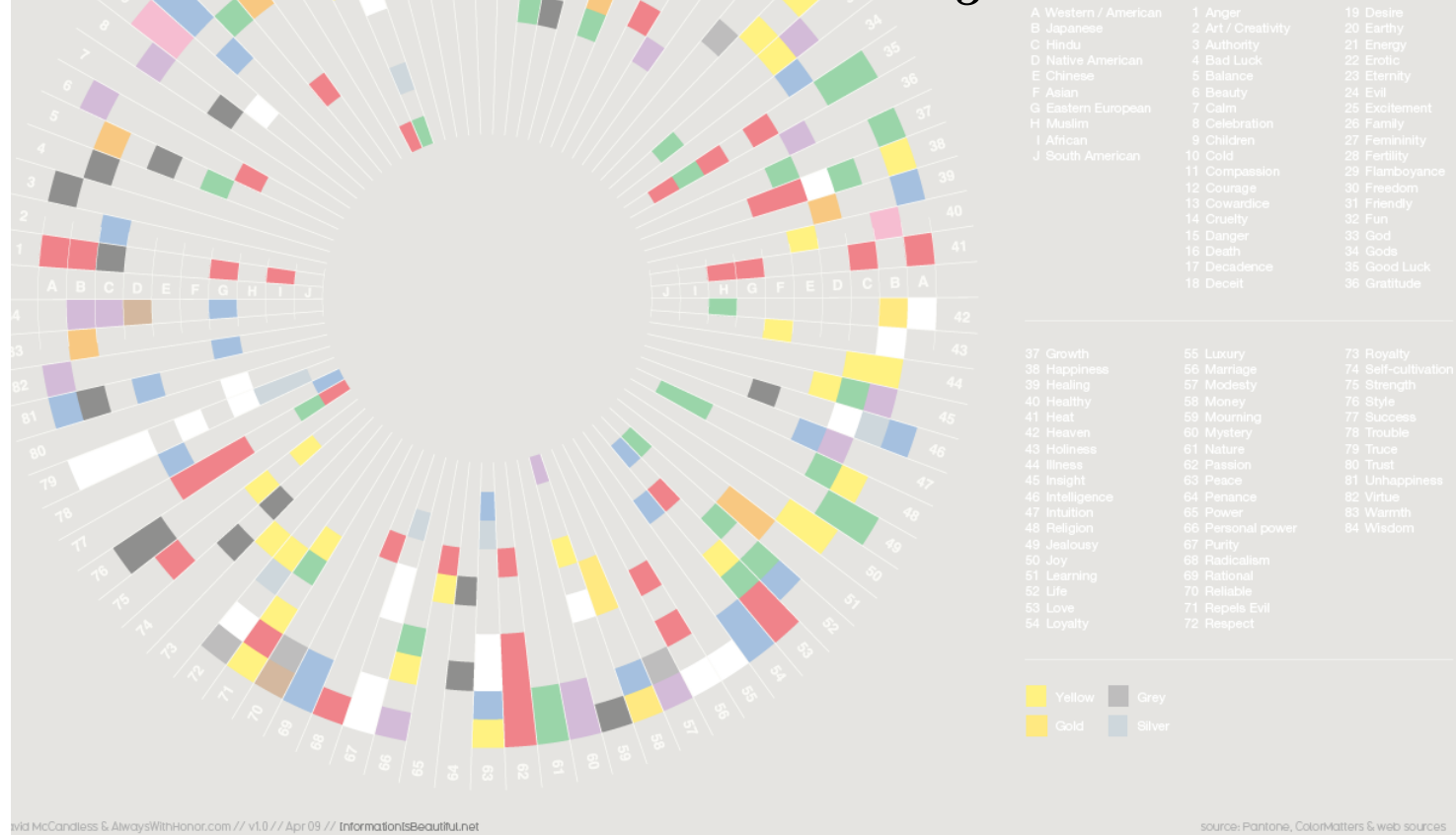
Reference, Concepts, Subject, Interpretant
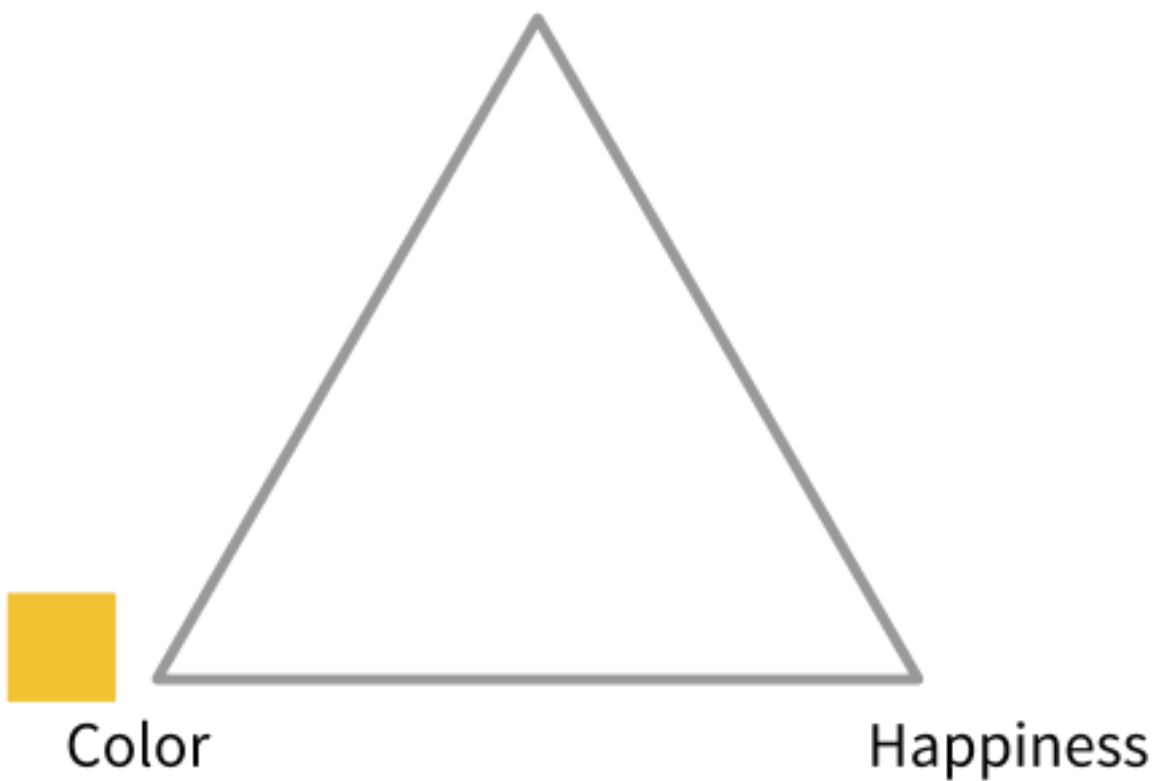
Sign

Referent, Object

Sowa's Meaning/Semiotic Triangle

Sowa, J. F. - **"Ontology, Metadata, and Semiotics"**

David McCandless (2013). **"Colors in Culture"**, from Information is Beautiful. CC Creative Commons BY-NC 3.0.

A Western / American
B Japanese
C Hindu
D Native American
E Chinese
F Asian
G Eastern European
H Muslim
I African
J South American

1 Anger
2 Art / Creativity
3 Authority
4 Bad Luck
5 Balance
6 Beauty
7 Calm
8 Celebration
9 Children
10 Cold
11 Compassion
12 Courage
13 Cowardice
14 Cruelty
15 Danger
16 Death
17 Decadence
18 Deceit

19 Desire
20 Earthy
21 Energy
22 Erotic
23 Eternity
24 Evil
25 Excitement
26 Family
27 Femininity
28 Fertility
29 Flamboyance
30 Freedom
31 Friendly
32 Fun
33 God
34 Gods
35 Good Luck
36 Gratitude

37 Growth
38 Happiness
39 Healing
40 Healthy
41 Heat
42 Heaven
43 Holiness
44 Illness
45 Insight
46 Intelligence
47 Intuition
48 Religion
49 Jealousy
50 Joy
51 Learning
52 Life
53 Love
54 Loyalty

55 Luxury
56 Marriage
57 Modesty
58 Money
59 Mourning
60 Mystery
61 Nature
62 Passion
63 Peace
64 Penance
65 Power
66 Personal power
67 Purity
68 Radicalism
69 Rational
70 Reliable
71 Repels Evil
72 Respect

73 Royalty
74 Self-cultivation
75 Strength
76 Style
77 Success
78 Trouble
79 Truce
80 Trust
81 Unhappiness
82 Virtue
83 Warmth
84 Wisdom

Yellow   Grey
Gold   Silver

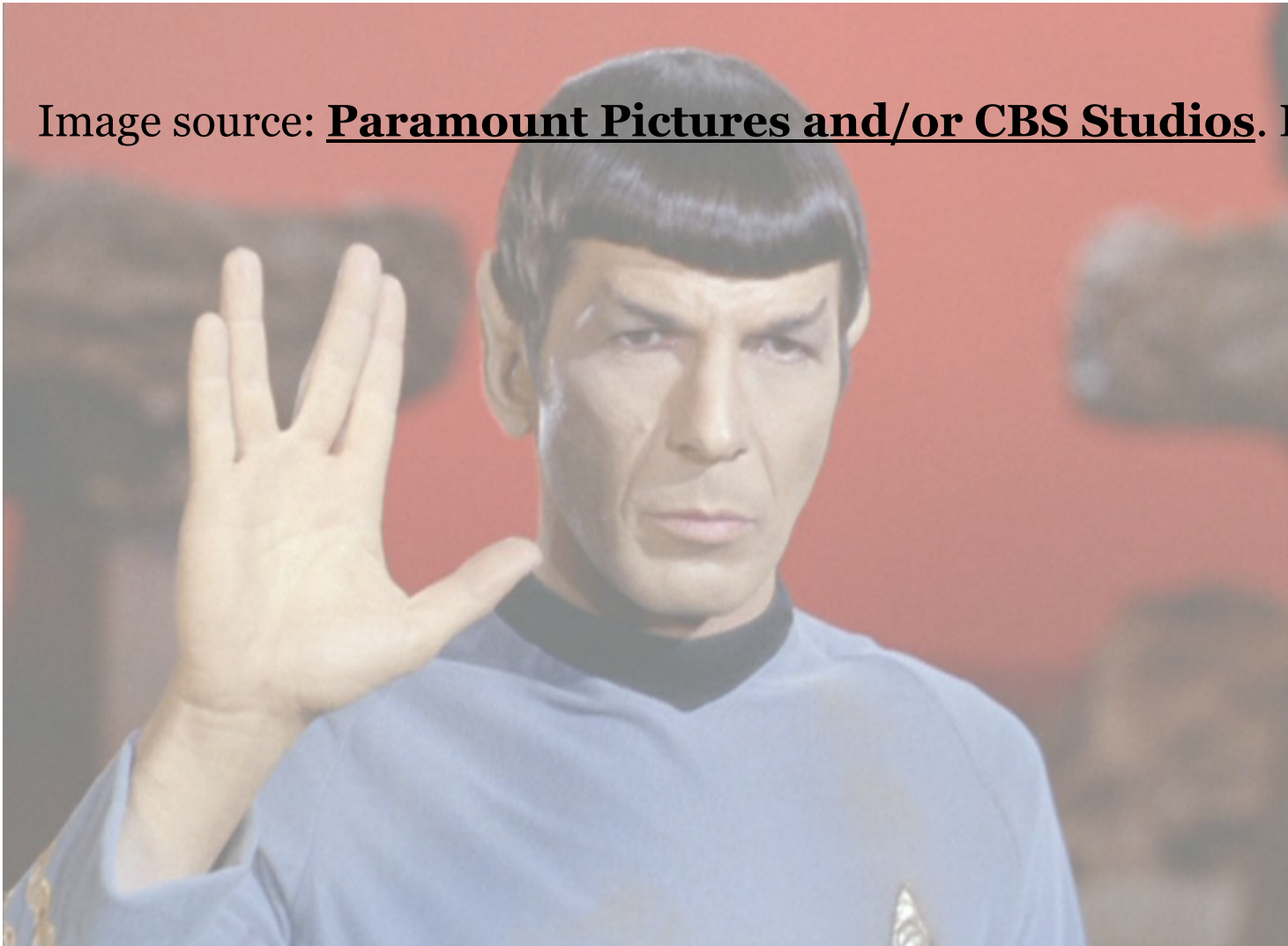Western's Concept of Happiness

Color

Happiness

Peirce's typology of signs

Three forms of "representations" in the sign systems:

- *Icons*:
    - "Likenesses": direct, similar representations of objects, shared quality.
    - Road signs, computer icons
- *Indices*:
    - "Correspondence in fact": indirect representations of objects.
- *Symbols*:
    - "Imputed character": arbitrary representations of objects
    - A social convention should be established to understand the representation

"Peirce's Theory of Signs", from Stanford Encyclopedia of Philosophy.

quiz

In this 21st century, give one example of *indices* that almost all of you experience almost everyday?

laundry symbols

Image source: **From a pair of shorts purchased in Huwei, Taiwan**. CC BY-SA 2.0.
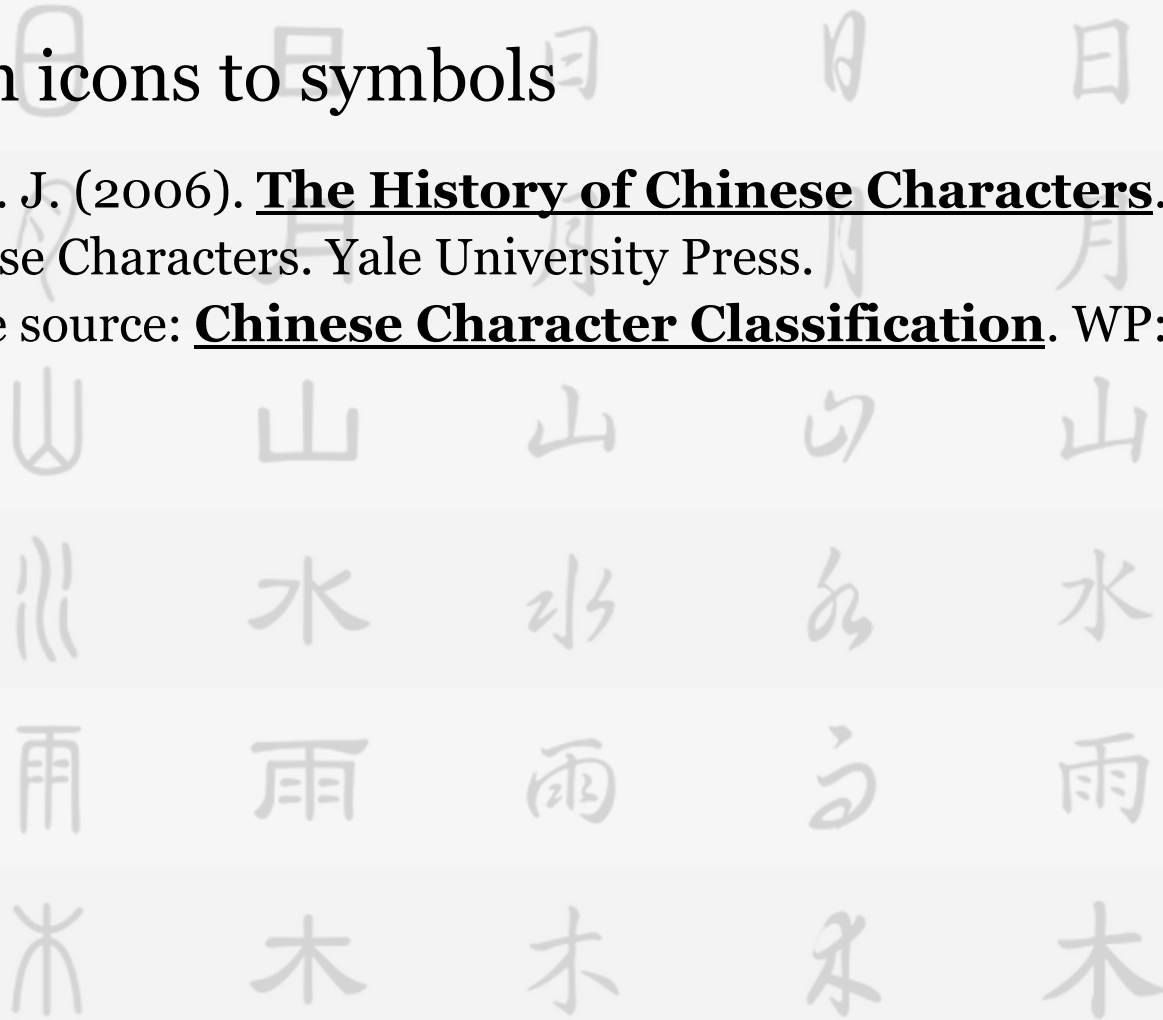
laundry symbols

Image source: **Washicons**
Ginetex Textile Care Symbol

from icons to symbols

Yin, J. J. (2006). **The History of Chinese Characters**. in Fundamentals of Chinese Characters. Yale University Press.
Image source: **Chinese Character Classification**. WP:CC BY-SA.

application in informatics/computing/information systems

- developer as the designers of software
  semiotics to understand who the users (agent) are, what they need (object), and their relation with their needs
- *human computer interaction*
  software as a collection of signs: understanding of data and actions (icons, vocabularies)
  user interface design [1]
- *information systems quality*
  semiotic understanding of information quality [2]
- *requirement analysis*
  pragmatic understanding of the implication of information systems in organisation

[1] Nadin, M. (1988). **Interface design: A semiotic paradigm.**
[2] Price, R., Shanks, G. (1988). **A Semiotic Information Quality Framework: Development and Comparative Analysis.** Journal of Information Technology (2005):20 pp. 88-102.