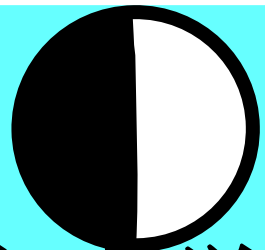


Impact of National Culture on Innovation:

**A PIPE model for Engineering
education**



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(WEF) 3 Economic development models

Basic Requirements

- Institutions
- Infrastructure
- Macroeconomy
- Health and Primary Education

Key for
factor-driven
economies

Efficiency Enhancers

- Higher Education and Training
- Market Efficiency (goods, labor, financial)
- Technological Readiness

Key for
efficiency-driven
economies

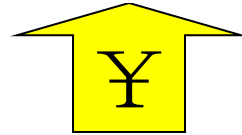
Innovation and Sophistication Factors

- Business Sophistication
- Innovation

Key for
innovation-driven
economies

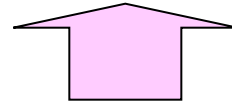
Economic growth

經濟增長



Innovation

創新



Culture

文化

Culture 文化?

- Fine arts and literatures, constructions, religions, philosophy, education, wine, tea, politics, cuisine, etc. etc.
- Spiritual, physical, Language, norm/behavior.

Chinese culture

- Buddhism? Taoism? Confucianism?
- Part of each not all
- What is the exact culture in China now?

National Culture ?

(民族文化?)

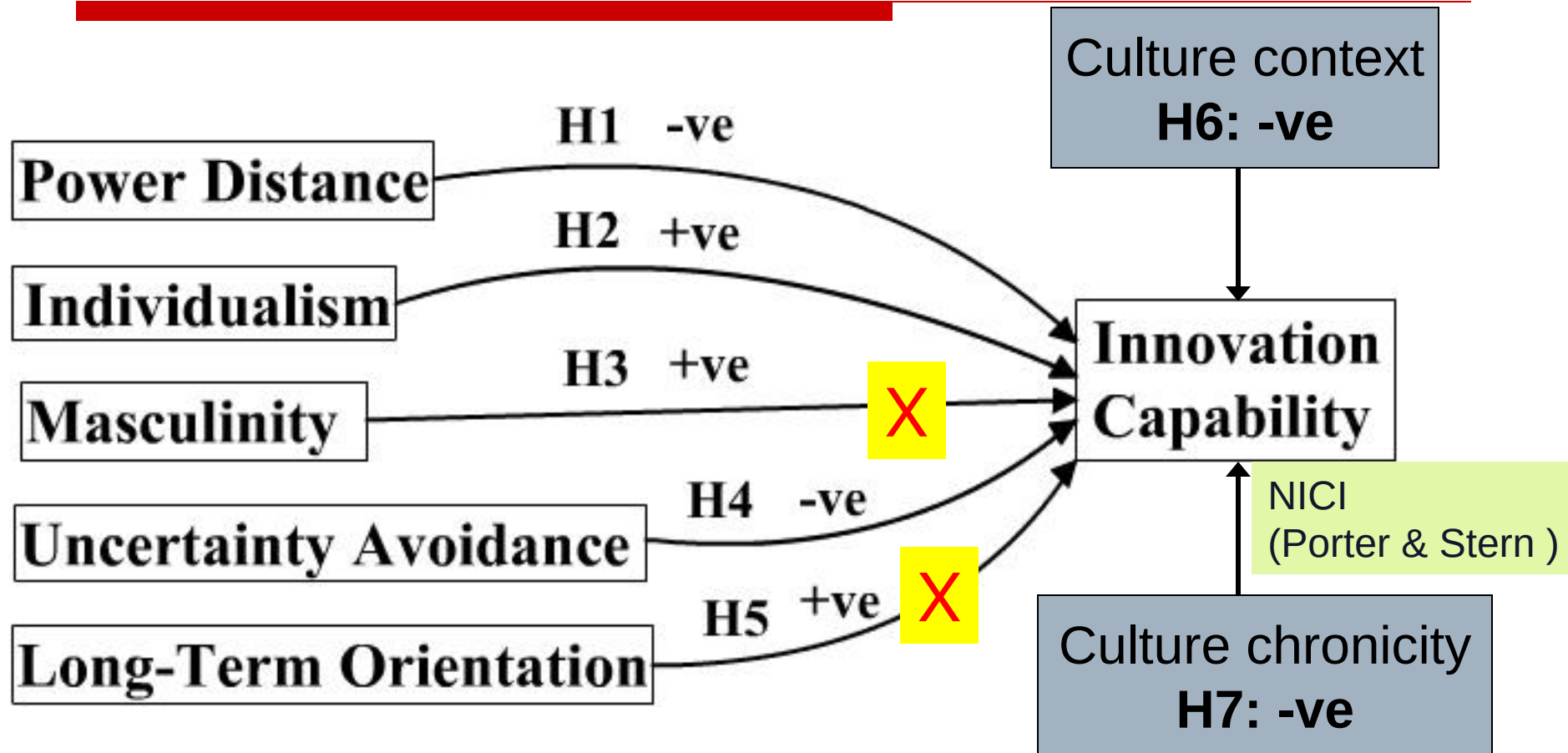
- Edward B Taylor: *complex whole which includes knowledge, **belief**, art, law, morals, **custom**, and any other capabilities and **habits** acquired by man as a member of society.*
- 在一个社会里，社会成员普片具有：
 - 价值观念，信念态度，行为规范，相處之道
- 民族文化（傳統）是影响人類行爲的根本因素。
- 表現在政治，经济，军事，衣食住行，科技
 - 酒文化，茶文化，官場文化，方方面面

An empirical research

- Sun, H Y (2009) "A Meta-Analysis on the Influence of National Culture on Innovation Capability", *International Journal of Entrepreneurship and Innovation Management*, Vol 10 (3/4), pp.353-360.

National culture and innovation

Hofstede (97), Hall(76)



(Hofstede 1997)

宜德城市大学 CityU

孙洪义 Hongyi Sun

(Hall 1976)

Correlation test (n=49)

Pearson Correlation

	NICI	PDI	IDV	MAS	UAI	Context
NICI	1	-.549**	.752**	-.054	-.357**	-.620**
PDI	-.549**	1	-.675**	.089	.172	.579**
IDV	.752**	-.675**	1	.100	-.239*	-.689**
MAS	-.054	.089	.100	1	.019	.026
UAI	-.357**	.172	-.239*	.019	1	.435**
Context	-.620**	.579**	-.689**	.026	.435**	1
Chronic	-.881**	.620**	-.768**	-.047	.344**	.842**
LTO	-.144	.372*	.408*	.209	.010	.451*

** . Correlation is significant at the 0.01 level (1-tailed).

* . Correlation is significant at the 0.05 level (1-tailed).

National culture and innovation

Hofstede (97), Hall(76)

Power distance		Equal	-
Individualism		Collectivism	+
Uncertainty Avoidance		Tolerant, acceptable, facing problems	-
high context		Intuitive, experiences	+
Chronicity		Flexible, changeable	+

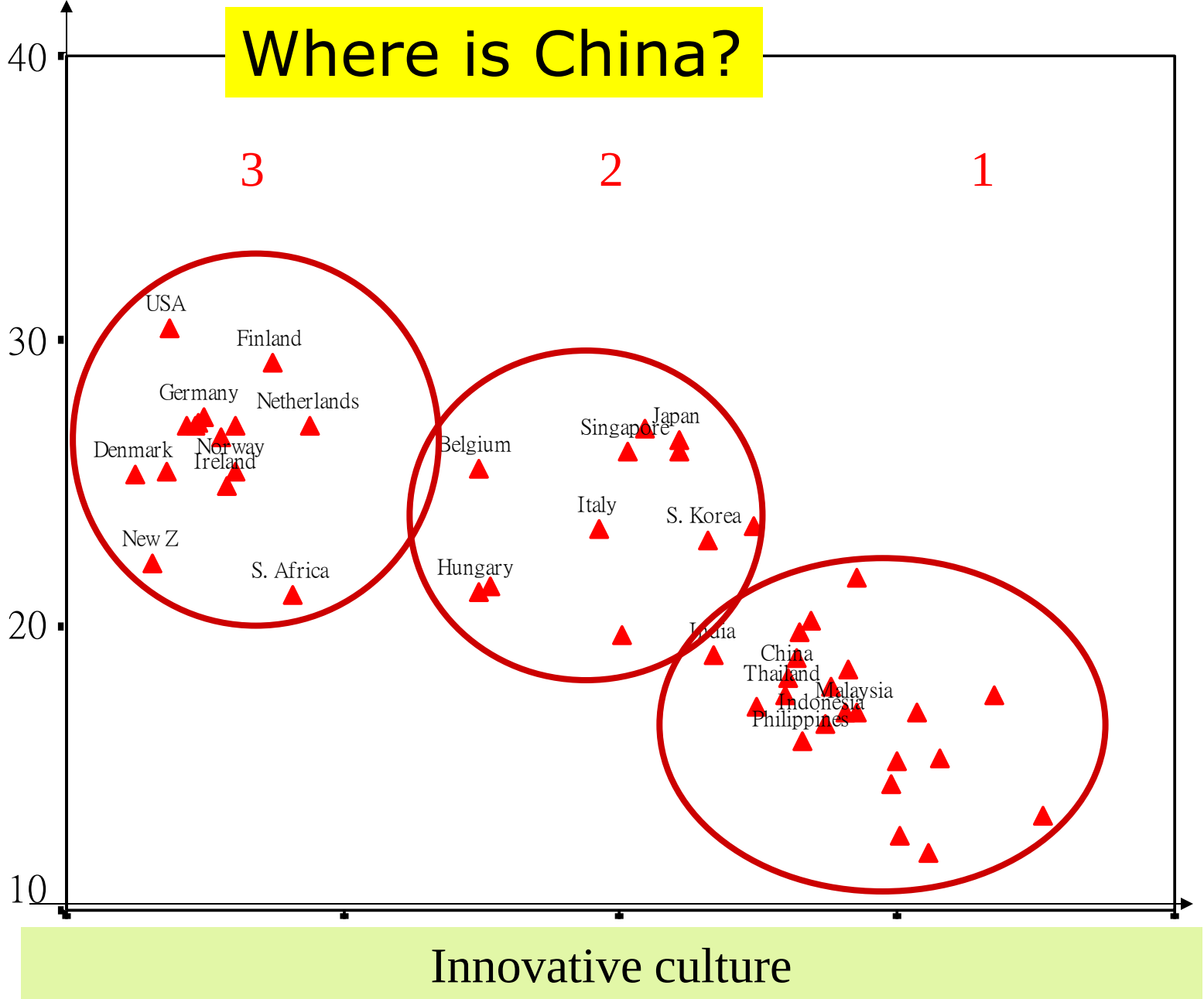
Innovative national culture index (INCI)

1. Shorter power distance
2. More individualistic
3. Lower uncertainty avoidance
4. High Context
5. High Chronicity

	Loading
Chronicity	.928
Context	.913
IDV	-.864
PDI	.838
UAI	.465
Initial Eigenvalue	3.36
% of Variance	67.12
Cronbach' Alpha	0.77

Where is China?

Innovation Capability



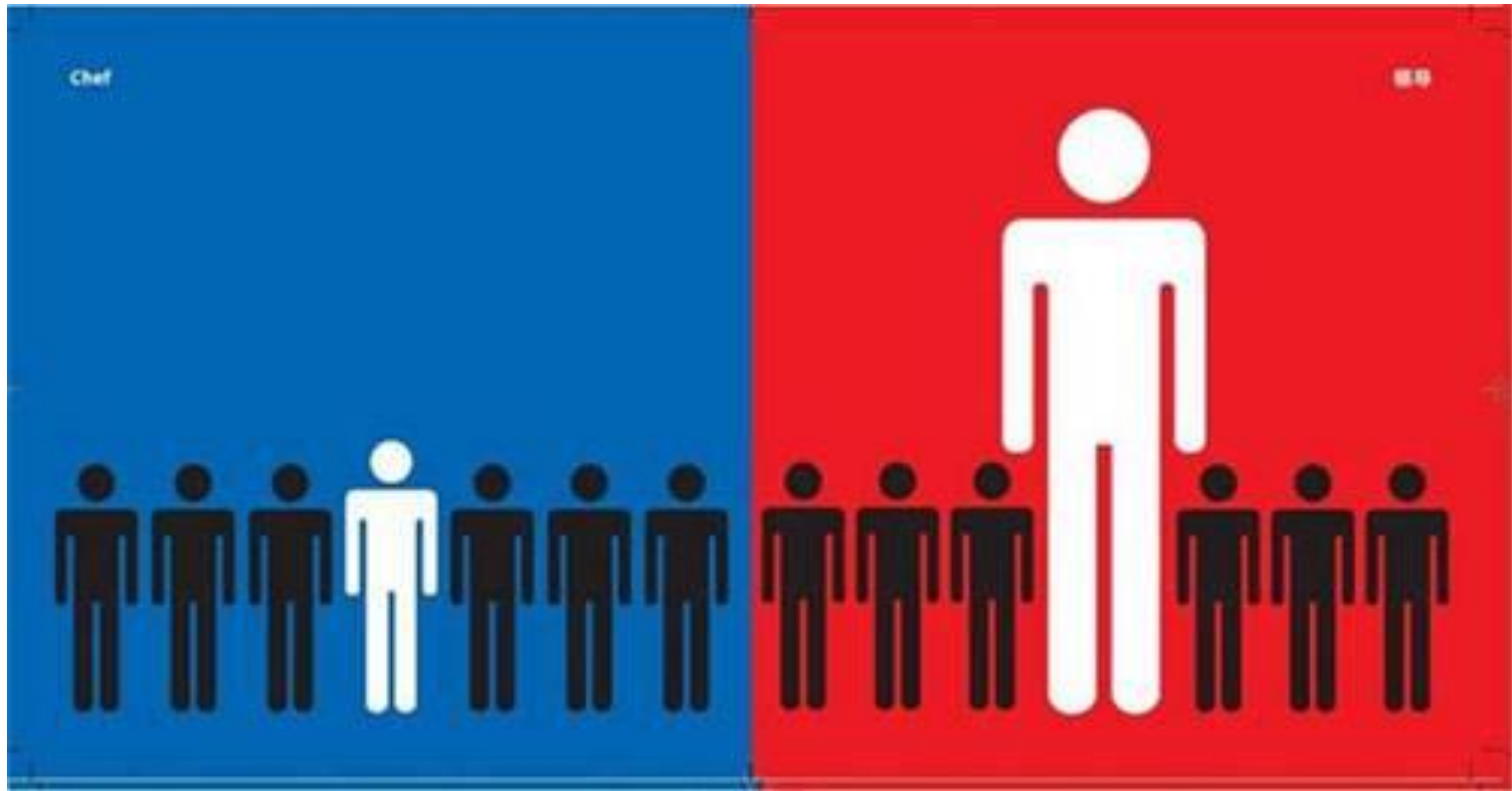
Innovative National Culture Index (INCI)

Compare China and USA

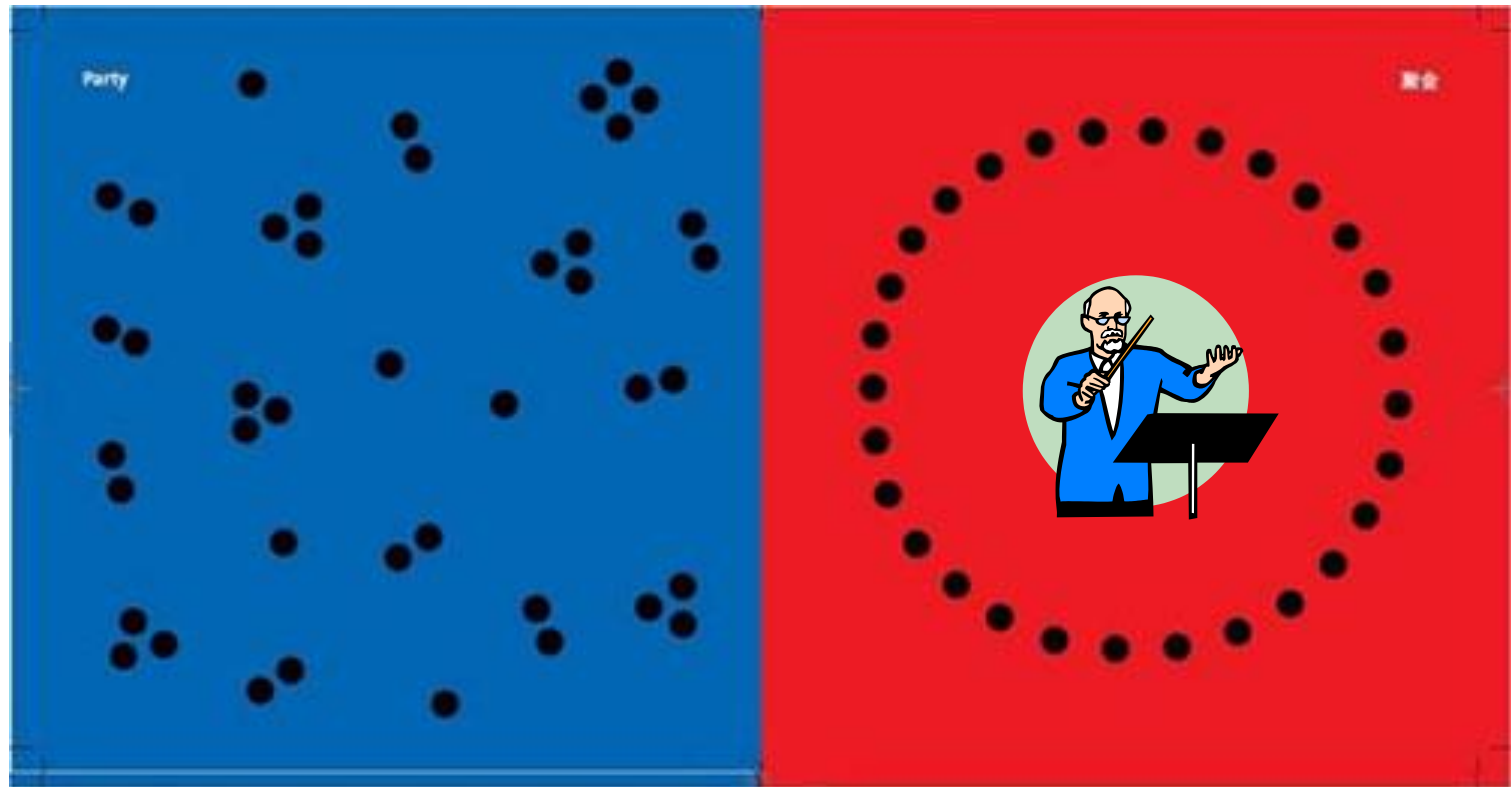
Power distance	權利距離	高 0.13	低 0.70
Individualism	個人主義	低 0.21	高 1.00
Uncertainty Avoidance	承受不確定性	高 0.91	高 0.80
Low-high context	透明+科學	低0.02	高 0.92
Chronicity	精確+準時	中0.57	高 0.95

權力距離→領導風格：

Power distance → education style

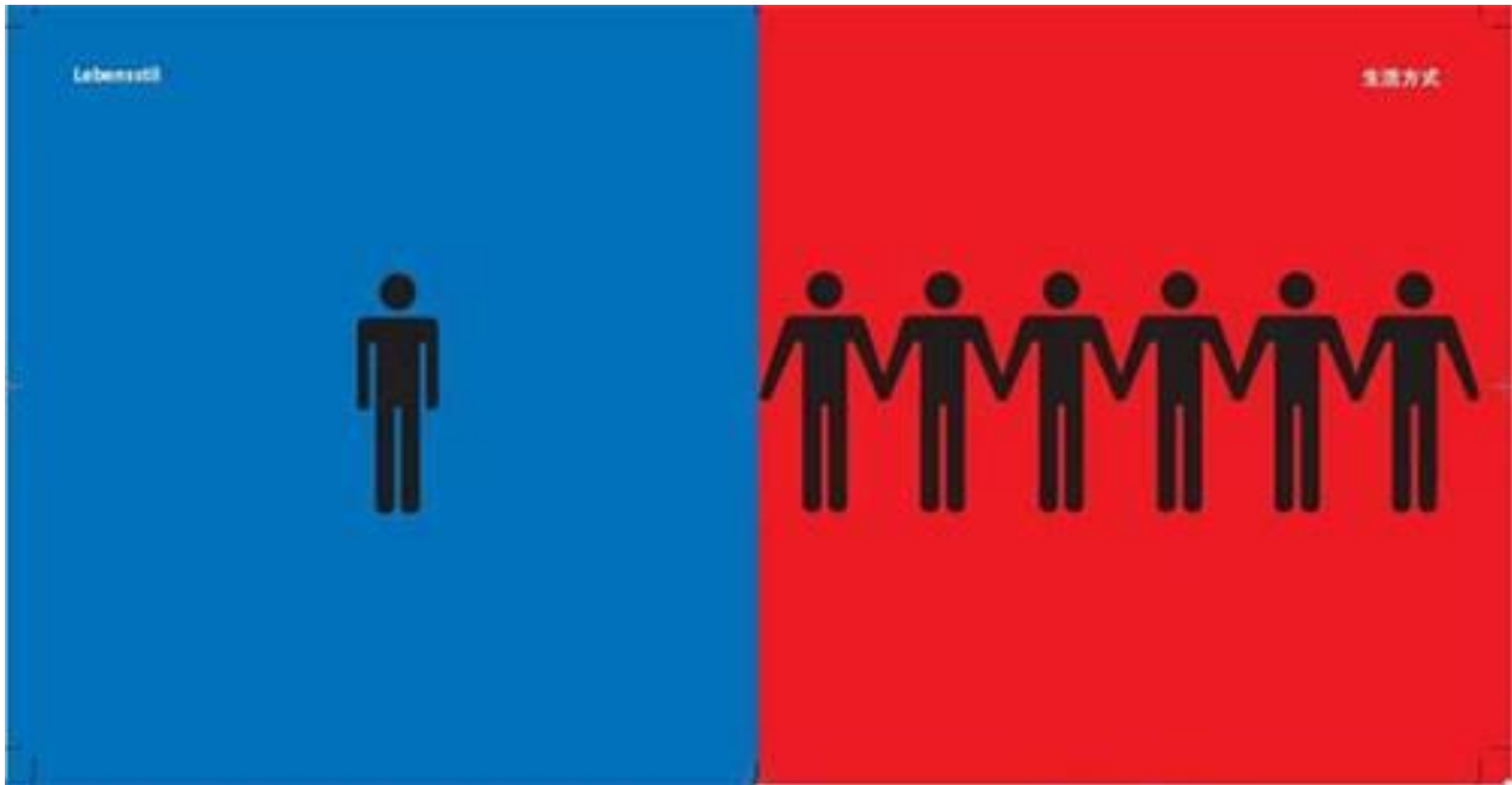


社交場合/Social gathering

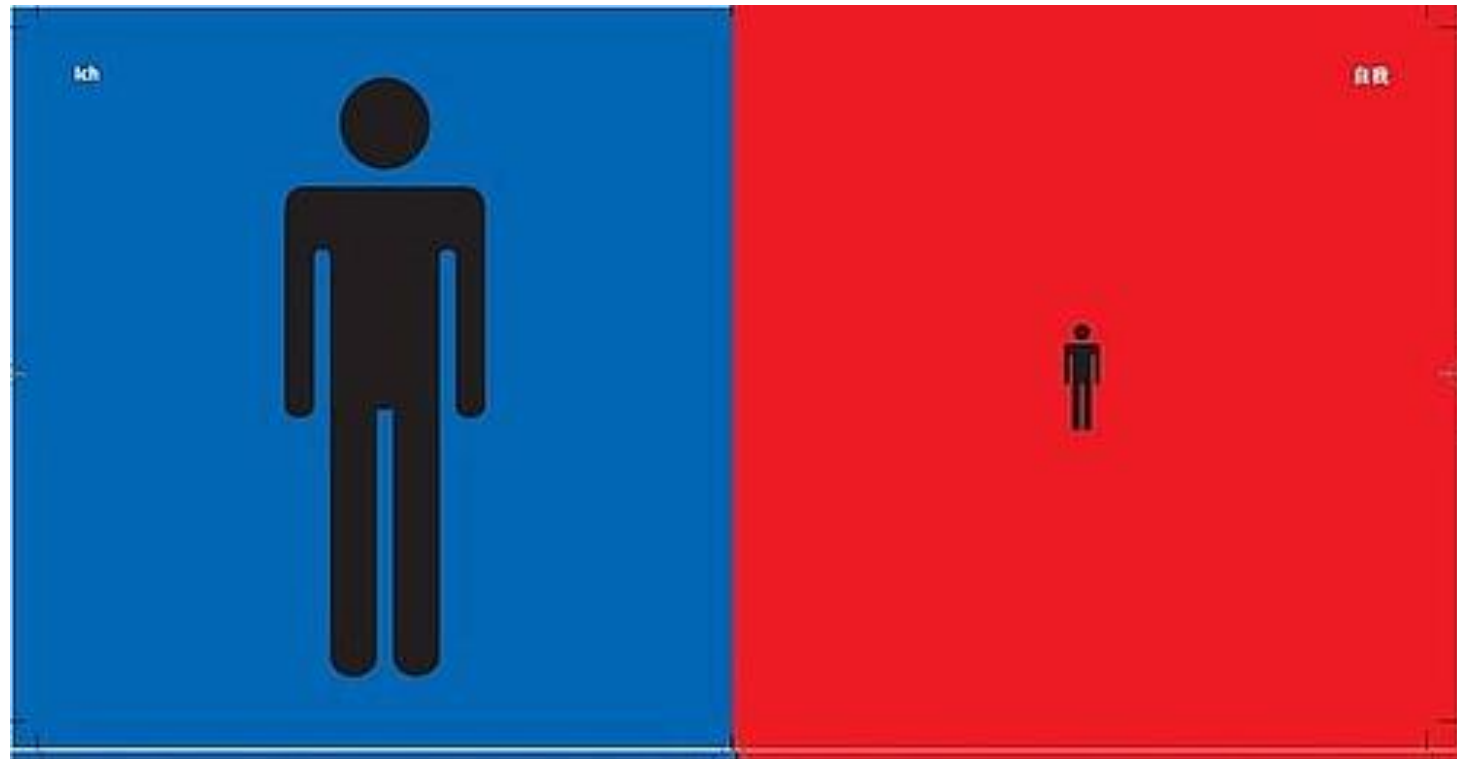


生活方式

个人生活Individual 集体生活collective

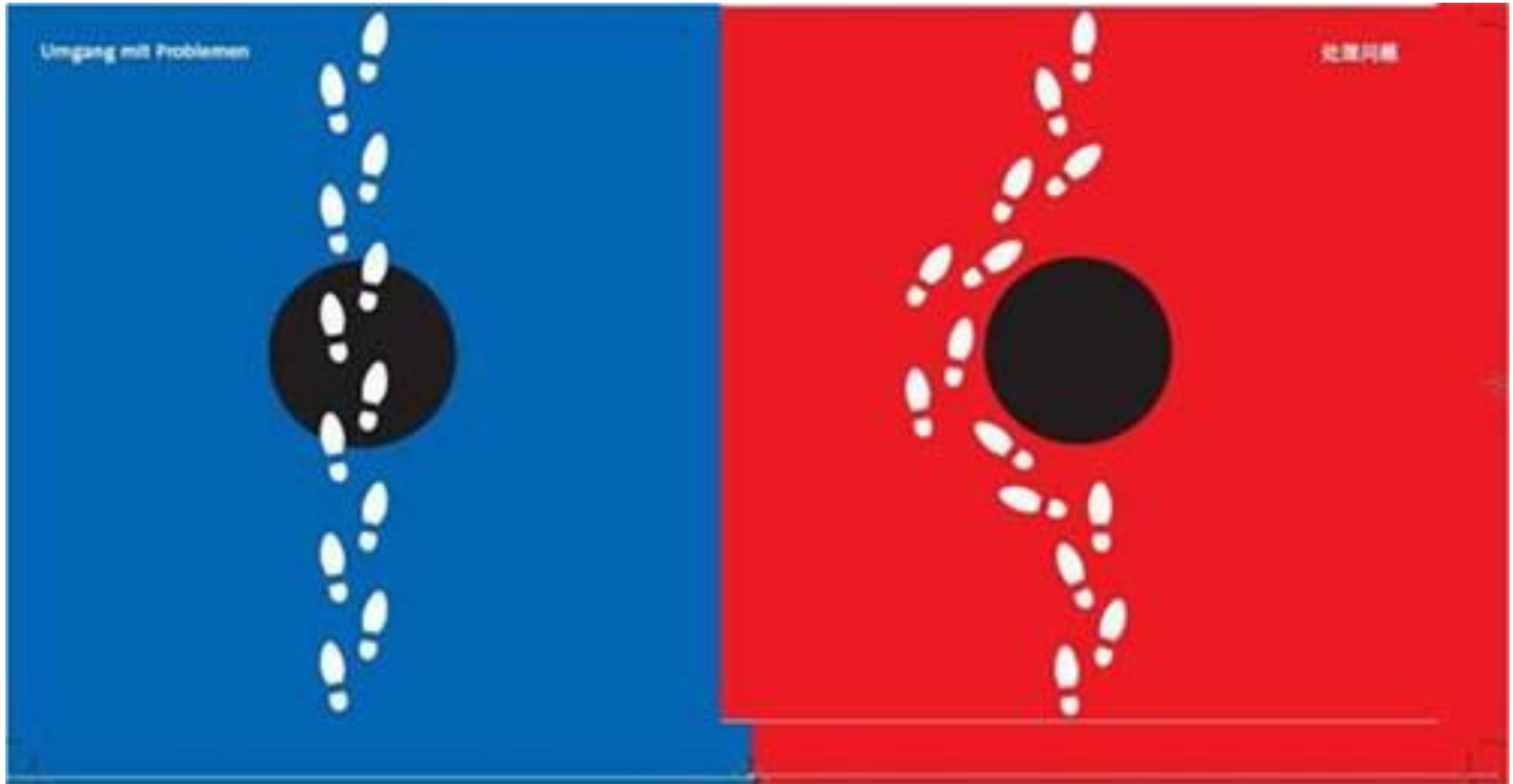


Value of individualism



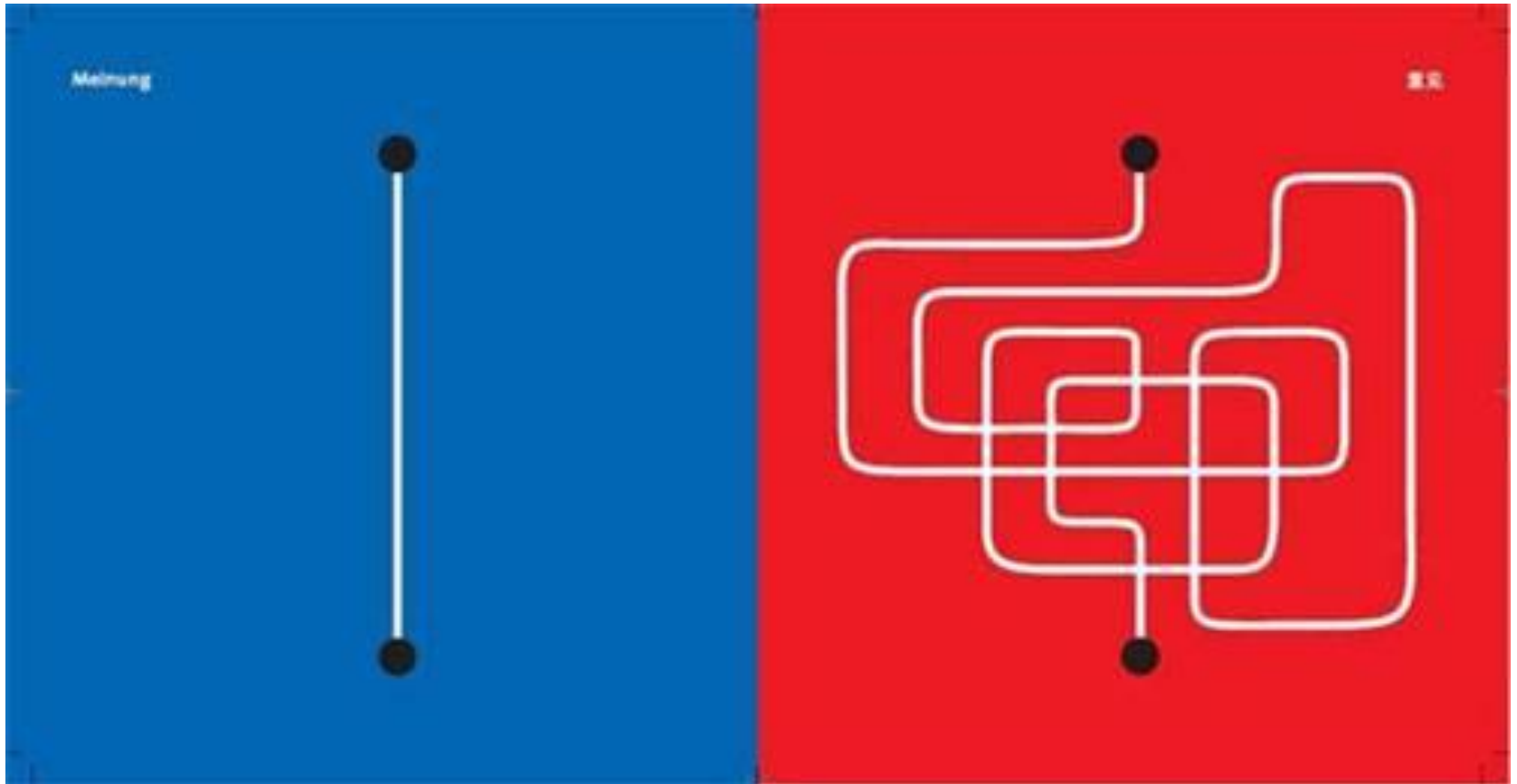
承担风险，面對問題：迴避問題

Risk taking, facing problems



表達問題: **Expression**
straight forward,

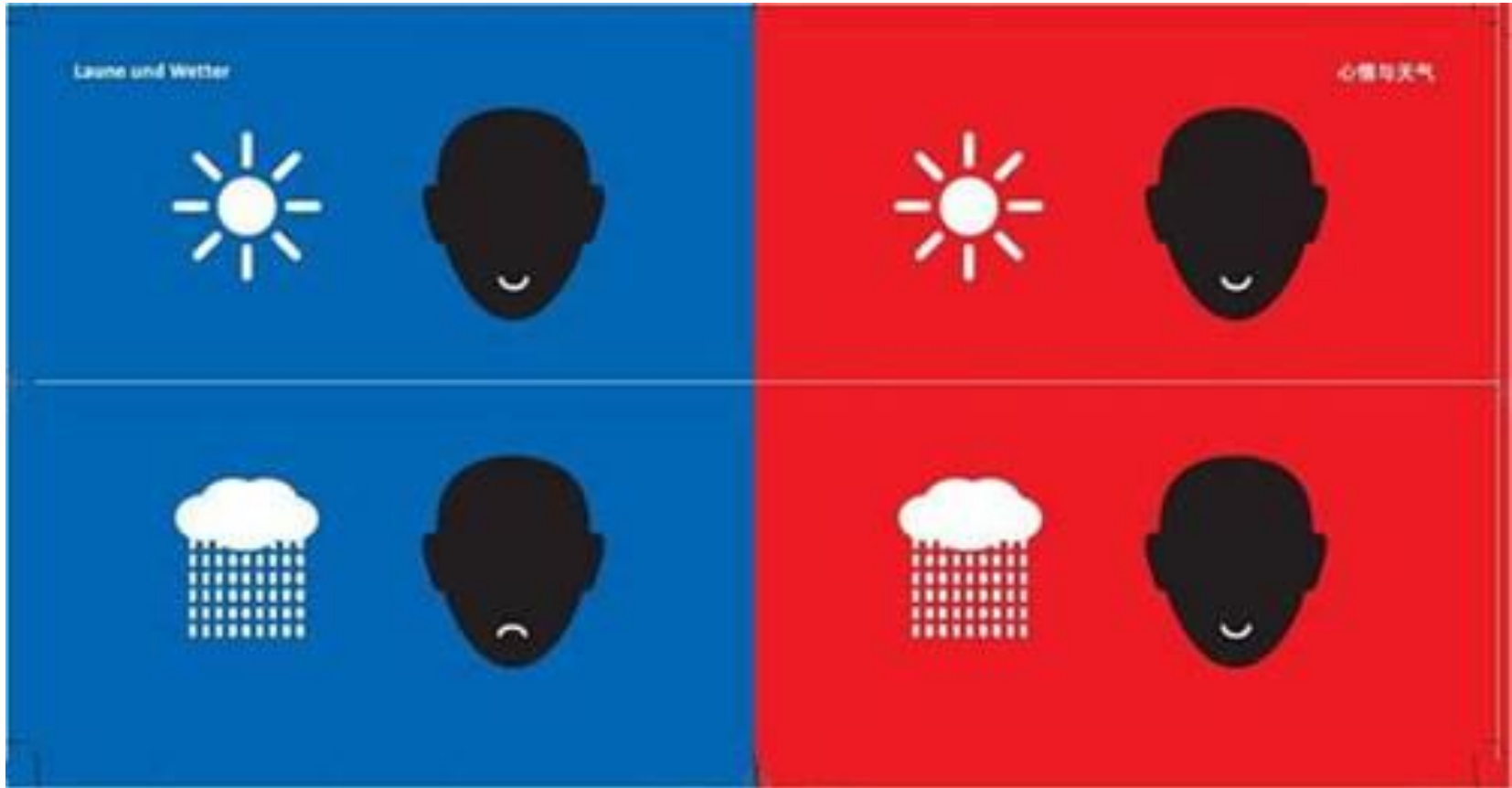
转弯抹角
full of twists and turns



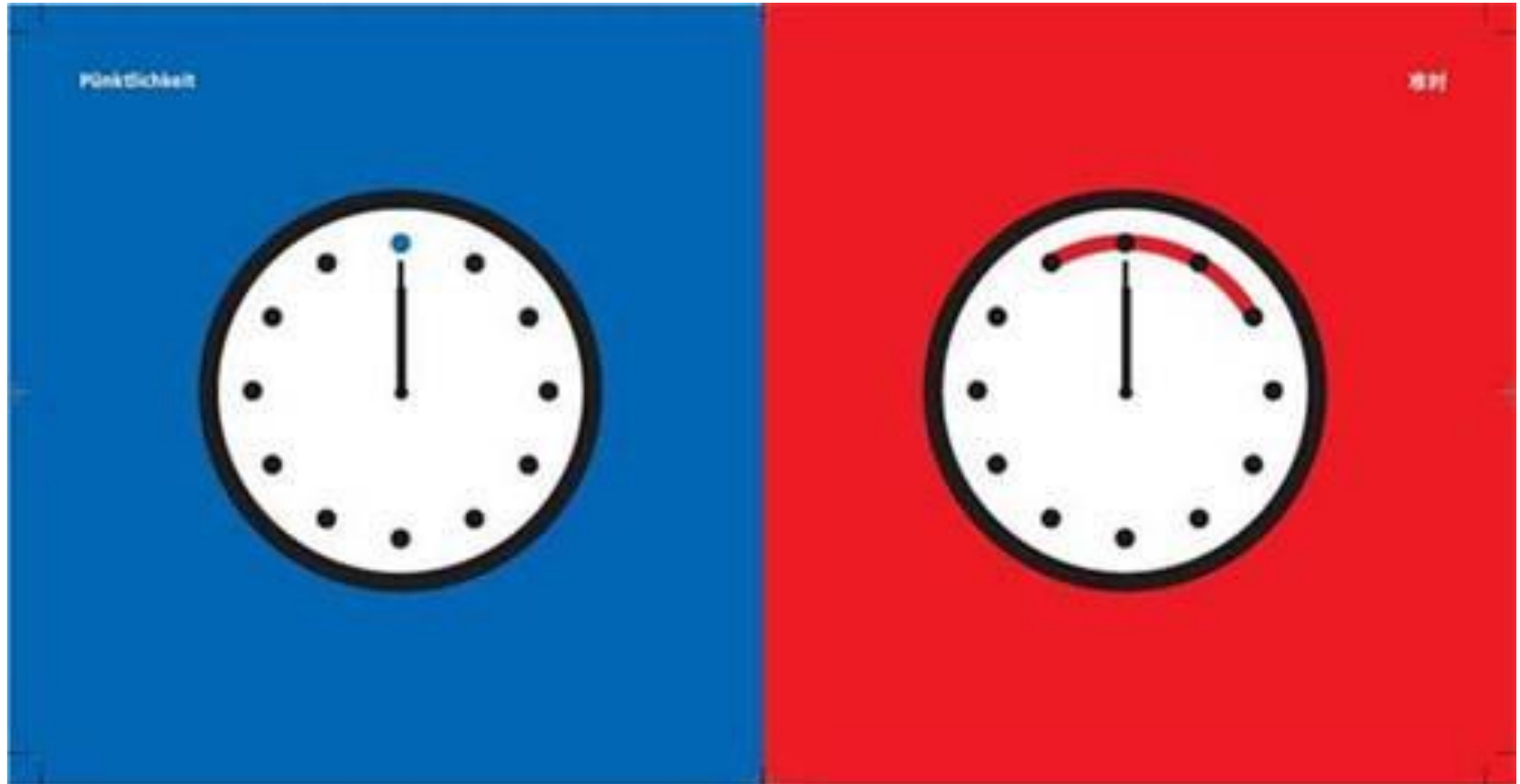
Communicaiton:

相由心生，

表裏不一



Sense of time



Measuring and precision



煮饭的诀窍：正确的水量

Cook rice: proper amount of water

1. 洗米时第一次加入大量的水，快速地搅拌后立刻将水倒掉，用手掌以按压的方式搓洗米，用水重复冲洗至清澈为止。
2. 洗好的米放入内锅并加入**正确的水量**，放置约半小时，让米吸收水分再开始煮饭。饭煮好后继续保温约**10~15**分钟再将锅盖打开，并用饭匙将煮好的饭翻搅均匀，就是香喷喷的白饭了。
3. 如果你不能很有把握地煮出熟度刚好的饭，加入一两滴酒可以让半生不熟的饭变成香喷喷的白饭喔！
4. 在洗好的米中加一小搓盐和色拉油，可以让煮出来的饭**亮晶晶**。



CAMERA AUDIO

德安駕駛學校



TEL: 5778667

包考的士 代辦排期

PL

隆銀行



百老匯攝影器材有限公司

中西大藥房

KAMLUN PHARMACY

中環海味 政府註冊藥房

氣

Samsonite

雅楠攝影

二樓

Telecom CSI SHOP

SALON

火鍋

GME

SAISON

DECAT

來運黃

德安

德安

德安

德安

德安

德安

德安

德安

德安

德安

德安

德安



五番館

CLUB DOLCE VITA

久子

だんす

野村

榕

club joule

第二東成ビル

マーキュリー
アート 4F

麻雀千
4F

茶屋

あさひ

フコネット

リトル

club joule

DENTAL CLINIC
八目歯科

新和設備
5F

Esprit

LARK

4F

3F
ももへの

IRS

きりたん

PLEASURE

朱鷺

Jin

B2
バレンタイン
幸子

銀裕ビル

春屋

クローバー

holly

アワン

くさ

ハル

春屋

クローバー

holly

アワン

三々

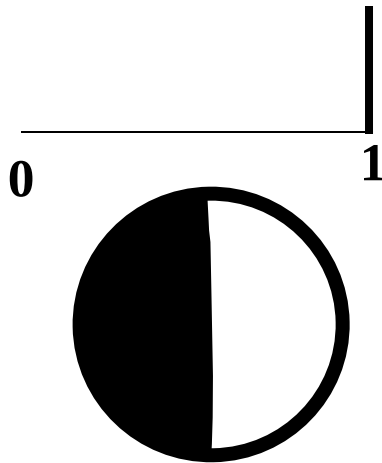
あさひ

波多

2007/9/9

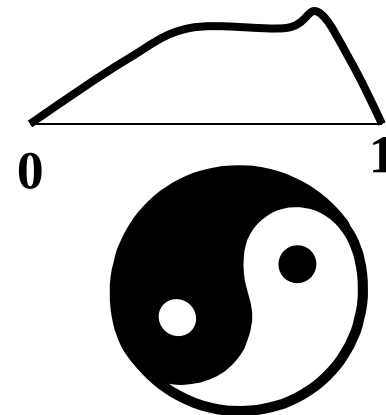
Two kinds of thinking

Crisp
Yes/No
Black/White
Polar, Dichotomy



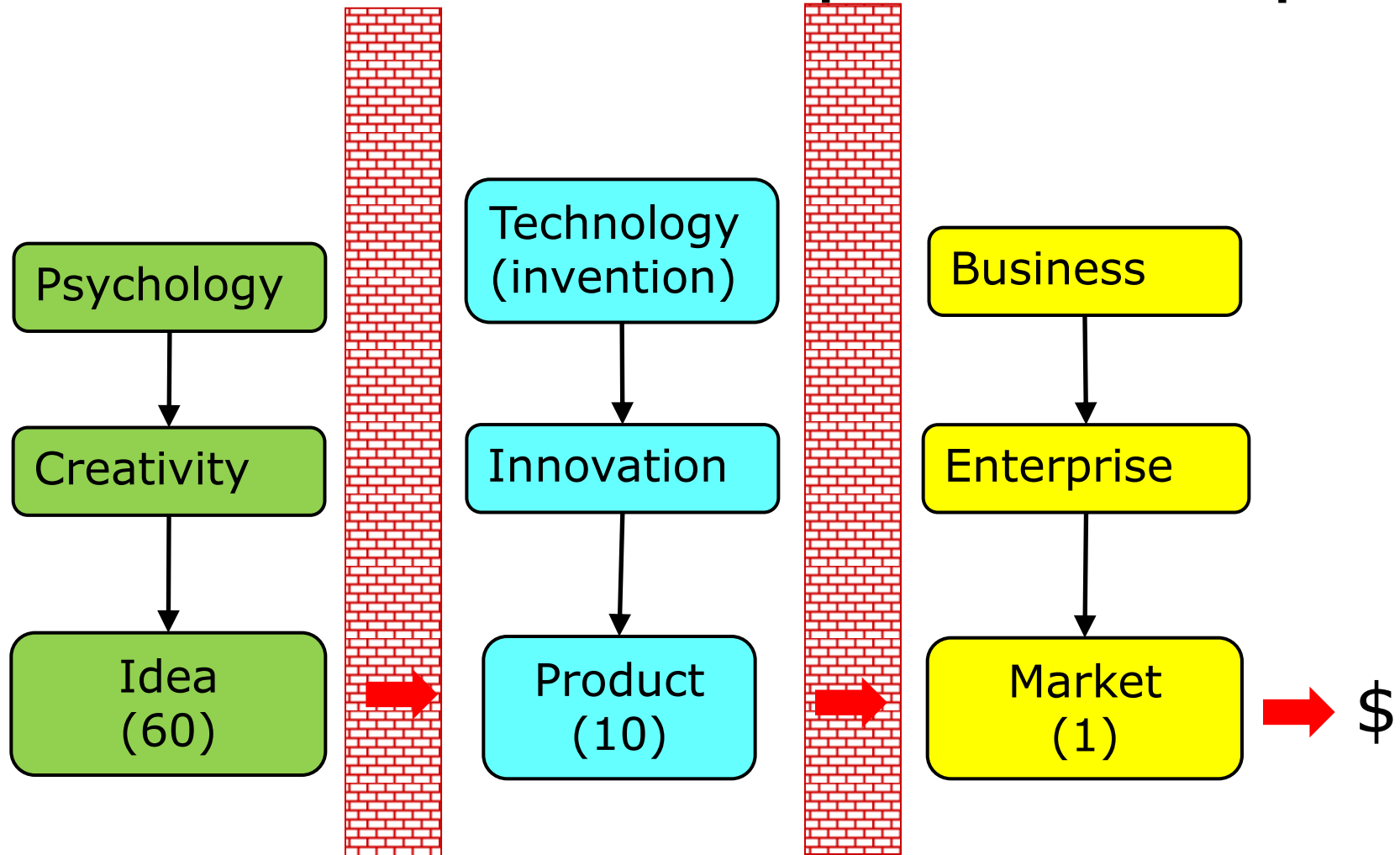
Aristotle
OCCIDENTAL

Fuzzy
Depends
Shades of Gray
Distributed Membership



Lao Zi
ORIENTAL

The Process from Creativity, Innovation to Entrepreneurship



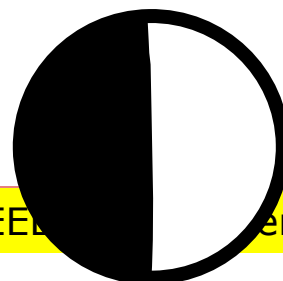
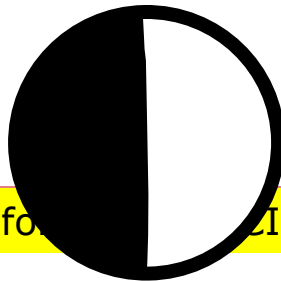
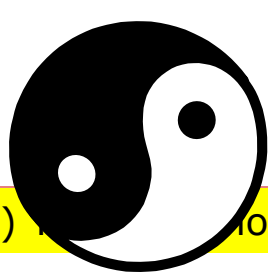
Creativity or innovation?

■ 创新：应用到商业环境里的创造力和想象力：

□ 2006: “Creativity and imagination applied in a business context is innovation.” (Business Week: 100 top innovative companies)

The **PIPE** model for teaching creativity, innovation and entrepreneurship*

Project 项目	Team-based project (Mock company, role play, teamwork, communication)			Performance 成绩
Process 过程	Creativity 创造	Innovation 创新	Entrepreneurship 创业	3-steps
	→ Ideas 新想法 →	Product 新产品 →	Enterprise 新企业 →	(PIPE)
实例/实践 Practice	Use brain 动脑	Hands-on 动手	Move Feet 动脚	(Head to Feet)
报告 Presentation	报告 1 Report 1	报告 2 Report 2	报告 3 Report 3	Final report



*Sun, H. Y. (2012) The PIPE model for teaching creativity, innovation and entrepreneurship, IEEE Conference, 20-23 Aug. HK

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