GeoInfographics

An Integrative Information Design Model to Promote Thematic Atlas Innovation

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Infographics in Atlases: Concept of definition and classification

Erwin Raisz Atlases – an Early Multi-method Approach to Cartographic Communication

Exploring Personalization of Infographics and Stories in the Atlas of the Ageing Society

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PRODUCT SPECIFICATION

www.guokr.com

10 FLAVORS

巧克力 CHOCOLATE
蜂蜜 HONEY
波旁 BORBÓN
花魁 GORO G1
阿宝 ABOL G1

穆纳斯 MANDHELING HORAS
大岩石 GRAND ROCK S18UP
全麦面包罗布斯塔 สูเปอร์ ซีโรปอต
澳洲秘密 AUSTRALIA'S SECRET
日式深煎 芳醇な深煎
SANTO ANTONIO CHOCOLATE

巴西圣安东尼奥·巧克力

拥有110年历史的日本咖啡企业“石光彦”生产的咖啡。在日本的情人节，很多女孩会用巧克力作为礼物送给男孩。

YUNNAN ZHEFANG HONEY

中国云南遮放山谷·蜜方

来自贡米之乡遮放，重山环绕的山谷，沉淀了更多的养分，使得这里的香米和咖啡树都格外茁壮。这款咖啡还经过了特殊的蜜处理。

图中展示了世界地图，以及不同地区的咖啡产地信息。
Maps & atlas, are still commonplace? Have they made some changes today on their bodies and spirits?

Should we piece together maps for an atlas? or incorporate maps, in accordance with specific issues, into a new framework of spatial information expression?
MAP

? constant ➔ Change?
The evolution characteristics of map design:

“Organic” Expression (human) vs “Mechanical” Constuction (things&tech)
Once, the map allowed us to measure each side of the world.

Made me memorize every damn city, town,

TV serial《Game of Thrones》
Today, maps create a social space that allows us to seamlessly shuttle between reality and fictions.
而我们似已忘记它的身骨、血脉和温度，迷茫于一帧帧的幻象之中。
And we seem to have forgotten its bones, blood and temperature, and have confused in numerous frames of illusion.
我们自豪地以为自己沧海拾珠抓住了什么......

We are proud to think that we have picked up the pearls from the vast sea...
却不知悄然里遗弃了什么......
However, we don’t know what we have lost, missed or abandoned inadvertently...
Personalized requirements among diverse **user** groups must be given more importance in multiple application scenarios!

**Progress**

The “Humanistic Turn” of Map Design!
The “Humanistic Turn” of Map Design!
The “Humanistic Turn” of Map Design?

Aesthetics

Objects

Technology

Progress
The “Humanistic Turn” of Map Design?
What to do?

Surveying & Mapping

Geography & Information

DESIGN

Scope of the meta-language of cartography
How to do?

A Trinity of Humanistic design organism

Users

Objects

Connotation

Understanding

Experience

Representation

Aesthetics

Technology

Architecture

Tonality

Progress
How to do?

“Aesthetical Graphics, Genuine Apperception”
艺术简化：“在洞察本质的基础上所掌握的最聪明的组织手段”
“Everything is Design! ...”

“Design is a relationship between form and content.”

艺术简化: “在洞察本质的基础上所掌握的最聪明的组织手段”
How to do?

Function v.s. Form
Apperception + Graphics
Information Designd =

“Information Design”

Genuine v.s. Aesthetics
Connotation of Map & Atlas Design

Problems | Paradigm | Practices

Connotation of
Map & Atlas Design
**Connotation of Map & Atlas Design**

**Problems | Paradigm | Practices**

**Not data quality, but data character** (Bin JIANG, 2018)
(Uncertainty in the emerging big data paradigm: data vs meaning vs experience?)
Connotation of Map & Atlas Design

1. Data-driven “Visualization” to Knowledge-service-oriented “Intelligibility”
Connotation of Map & Atlas Design

From Cartography to Mapping ...! (Edward S. Casey)
Connotation of Map & Atlas Design

1. Concept

Non-data driven conceptual expression

2. Data

认知&思维&经验加工

感官及其衍生装置测取

Non-data driven conceptual expression
Connotation of Map & Atlas Design

Non-data driven conceptual expression

Face-like vs Spirit-like
Simplification and Abstraction
(Bin JIANG, 2018)
Structure and relationship topology mapping
# Connotation of Map & Atlas Design

<table>
<thead>
<tr>
<th></th>
<th>Line</th>
<th>Area</th>
<th>Network</th>
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<tbody>
<tr>
<td>models of a</td>
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<td>region's</td>
<td>chief towns</td>
<td>adm. boundary</td>
<td>state, region centers, boundaries and polygons</td>
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<td>orbs</td>
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<td>lines of</td>
<td>attraction area</td>
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<td>gravity</td>
<td>preferred relationships</td>
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<td>passage point</td>
<td>rupture, Interface</td>
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<td>contact areas</td>
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<td>directed</td>
<td>division line</td>
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<td>movement</td>
<td>tendency surfaces</td>
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<td>dissenmity</td>
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<td>point evolutions</td>
<td>axes of propagation</td>
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<td>areas of extension</td>
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<td>tissue of change</td>
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<td>urban pattern</td>
<td>administrative boundaries</td>
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<td>subset</td>
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<td>linked network</td>
</tr>
</tbody>
</table>

Chorèmes

“Garden City” concept
(Howard, 1902)
1 Connotation of Map & Atlas Design

Spatial metaphor

Problems | Paradigm | Practices
Connotation of Map & Atlas Design
Connotation of Map & Atlas Design
Connotation of Map & Atlas Design

Problems | Paradigm | Practices

Concept driven Communication / Commentary

Coupling

Data driven Analysis / Discovery

Two-stage Coupling Mapping
Connotation of Map & Atlas Design

First-stage Visualization
Connotation of Map & Atlas Design

Second-stage Mapping
Architecture of Map & Atlas Design

large-capacity information in a limited media environment
Architecture of Map & Atlas Design

Problems | Paradigm | Practices

Story Maps

每个人都有要讲述的故事。
利用地图的强大功能来讲述您的故事。

Spatial Narrative
Spatial Narrative
(Theatrical Space & Stage Metaphor)
Architecture of Map & Atlas Design

"Three Axes" linkage (Narrative framework)

- Spatial axis
  - Global
  - Region
  - Local
  - From far to near
- Thematic axis
  - City spirit
  - Five center
  - Four major brands
  - Three characteristics
  - Economic integration of production and living
  - Idea of development
  - Residents demands
  - Urban function
  - Environmentally friendly– economically developed – culturally diverse – safe and livable
- Timeline
  - History
  - Current
  - Future
  - Innovation – coordination – green – open – sharing
  - Innovation - humanity - ecology
- Parallel dimensions integrated

Be tolerant to diversity, Be excellence, Enlightened wisdom, Humble atmosphere

Shanghai service - Shanghai manufacturing
Shanghai shopping - Shanghai culture

Production - life - ecology

Economy - finance - trade - shipping - science and innovation

Environmentally friendly – economically developed – culturally diverse – safe and livable

Living – working – recreation – transportation

Parallel dimensions integrated

"Three Axes" linkage (Narrative framework)
### Architecture of Map & Atlas Design

#### Problems | Paradigm | Practices

<table>
<thead>
<tr>
<th>Estuary Remit</th>
<th>Chinese Portal</th>
<th>Be Excellence</th>
<th>Accept all</th>
<th>People-oriented</th>
<th>Special</th>
<th>Disticts</th>
<th>Looking Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oriental Pearl</td>
<td>World Pivot</td>
<td>Innovation City</td>
<td>Culture Capital</td>
<td>Habitable Land</td>
<td>Perspective</td>
<td>Diverse Modu</td>
<td>Imagine Future</td>
</tr>
</tbody>
</table>

#### "Eight-movement Trio" (Narrative clue)

- Forward
- Perceptual cognizance
- Performance
  - Refactoring connotation

#### Importance | Multiple support | Inevitability

- Disticts Investigation
- Looking Back
- Epilogue
- Rational interpretation

- Multiple support
- Inevitability
Representation for Map & Atlas Design
The winning entry of the 2016 BCS Award, *Pitch perfect* by Kenneth Field

**Pitch Perfect**

**Is this a standard map?**
Are these standard maps? (quasi-maps)
3 Representation of Map & Atlas Design

Are these standard map? (quasi-maps)
Problems | Paradigm | Practices

Should spatial issues only be visualized by Spatial diagram?
Should maps only be used to visualize spatial issues?
Representation of Map & Atlas Design

Problems | Paradigm | Practices

ICC 2009 golden award for urban map - Beijing Olympic games

Should maps be designed only by cartographers?
<table>
<thead>
<tr>
<th>Problems</th>
<th>Paradigm</th>
<th>Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the map definition be permanent?</td>
<td>What is a constructive relationship between map and others?</td>
<td></td>
</tr>
</tbody>
</table>

### Representation of Map & Atlas Design

<table>
<thead>
<tr>
<th>Representation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td>主要运用插图对事物进行说明</td>
</tr>
<tr>
<td>Graph</td>
<td>通过数值来表现变化趋势或进行比较</td>
</tr>
<tr>
<td>Chart</td>
<td>运用图形、线条及插图等，阐明事物的相互关系</td>
</tr>
<tr>
<td>Table</td>
<td>根据特定信息标准进行区分，设置纵轴与横轴</td>
</tr>
<tr>
<td>Map</td>
<td>描述在特定区域和空间里的位置关系</td>
</tr>
<tr>
<td>Pictogram</td>
<td>不使用文字，运用图画直接传达信息</td>
</tr>
</tbody>
</table>
Representation of Map & Atlas Design
### Representation of Map & Atlas Design

<table>
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<th>Practices</th>
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</thead>
<tbody>
<tr>
<td>視覺化辭典</td>
<td>Visual vocabulary</td>
<td>ft.com/vocabulary</td>
</tr>
</tbody>
</table>
Representation of Map & Atlas Design
Representation of Map & Atlas Design

Problems | Paradigm | Practices
Representation of Map & Atlas Design

Problems | Paradigm | Practices

paintings | photographs | illustrations

统计图表 | 地图 | 示意图
Statistical charts | Maps | Diagrammatic sketch

绘画 | 影像 | 图谱
icons | 统计图表 | 地图

Spatio-temporal information graphic system
To motivate the liberation from Cartography, Mapping to GeoInfographics!
Problems | Paradigm | Practices

Geography | Infographics

‘Where’ | ‘Themes’

‘Thematic Maps’

Geo-Infographics

‘GeoInfoDesign’ + ‘InfoCartography’?

To motivate the liberation from Cartography, Mapping to GeoInfographics!
Representation of Map & Atlas Design

Problems | Paradigm | Practices

Configuration categories:

- Spatial Base
- Top Priority
- Supporting Costar
- Decoration \ Non-spatial role
Representation of Map & Atlas Design

Problems | Paradigm | Practices

GM Crops: A World View

In 2007, farmers grew more than 134 million hectares of GM crops—making it a reality that crosses international borders. Who grows it, who benefits from it, and who avoids it, are now grappling with ethical, environmental, and economic issues that are shaping the future of biotech crops.

Global Increase in Btoteh Crops in millions of hectares

- Total agricultural area
- Nonfood uses

Explore the interactive online map at www.sciencemag.org/ipmapgenomes/map.html

Top Producers

United States 57.7 MILLION HECTACTES

Argentina 19.1 MILLION HECTACTES

Brazil 38.9 MILLION HECTACTES

Canada 70 MILLION HECTACTES

India 6.2 MILLION HECTACTES

China 9.8 MILLION HECTACTES

Paraguay 2.6 MILLION HECTACTES

South Africa 1.8 MILLION HECTACTES

Grown GM crops commercially

Prohibits commercial growth of GM crops

Allows import of GM crops for food and/or feed

Making a GM crop

[Map showing the distribution of GM crops worldwide]
Problems | Paradigm | Practices

Representation of Map & Atlas Design

**IT’S A SCI-HUB WORLD**

*Nature*, 2014, 509(6285)

**URBAN EXPANSION**

The proportion of China’s population living in cities has risen steadily since the 1970s (1). Workers moving from rural areas to cities are prevented from integrating, however, by a household registration system that restricts them from officially changing their permanent residence. Urban populations concentrate in the eastern part of the mainland (2).

1. **Relocation trends**

   - Urban Proportion
   - Proportion registered
   - Rural living in cities as living in cities

2. **Mainland cities**

   - Population density in 2010 (people per km²)
     - Below 10
     - 10–50
     - 50–100
     - 100–500
     - 500–1,000
     - Above 1,000

   - Urban population
     - Below 200,000
     - 200,000–500,000
     - 500,000–1 million
     - 1 million–2 million
     - 2 million–5 million
     - Above 5 million

3. **CHINAURBAN EXPANSION**

   *Nature*, 2014, 509(6285)

**IT’S A SCI-HUB WORLD**

*Science*, 2016, 352 (6285)

Industrialization of western China will raise incomes but could pollute major rivers.
Representation of Map & Atlas Design
Tonality with Map & Atlas Design
4 Tonality of Map & Atlas Design

Problems | Paradigm | Practices

张艺谋的影视“景观”
Tonality of Map & Atlas Design

Problems | Paradigm | Practices

美国科幻大片的影视“炫技”
音乐调性：调（包括主音高度和调式类别）本身所具有的特质。
绘画调性：具有风格学的意义，因风格特点，同绘画技法上的规律结合，产生出各种不同的流派。
品牌调性：基于品牌的外在表现而形成的市场印象，可等同于人的性格；是品牌在市场中所运用的独有的语言识别。包括品牌核心价值定义阐释、品牌价值诉求、品牌标识语、品牌故事以及品牌主广告语等。
A Long-term Polycentric Vision of the European Space (DATAD, 2001)

Spatial Visions of Some European Countries and Region
4 Tonality of Map & Atlas Design

Blurred personality, unknown generation
**Tonality of Map & Atlas Design**

Creativeness faded, thousand maps with one face

**Software dependency:** Universal template interface \ standardized process \ one-click mapping platform... (Everyone could a qualified mapper?)
Tonality of Map & Atlas Design

Problems | Paradigm | Practices

Lack of certain and specific tonality

Imitation without originality and innovation
A universal tonal positioning tool for 19 value elements established by Roland Berger
4 Tonality of Map & Atlas Design

User Feature Positioning map (Personal value element file)
Accurately Target your users and pinpoint their preferences
Tonality of Map & Atlas Design

Nike
AVP - Actual Value Perception (415 vs. 1.085; \(z_{max}=12.7\))

User Non-User

Problems | Paradigm | Practices

Consumer values that the users of the brand most often agree with – i.e. the most recognized
type proposition of the brand

Legend
- Value pole
  - E = Emotional
  - R = Rational
  - + = More
  - - = Less
- Value cluster
- Fair Consumer value, value proposition
- Midfield area, high degree of consensus
- Pro-Value
- Anti-Value, demarcation
- Warning, too much, should be less intense
- Warning, too weak, should be more intense
- Conflict with other value

Brand tonality Matching design
4  

**Tonality of Map & Atlas Design**

Problems | Paradigm | Practices
4 Tonality of Map & Atlas Design
“Mapping The Drowned World” —— Tracey Clement
The path of the eclipse in August 2017 stretches from coast to coast of the United States.
Tonality of Map & Atlas Design

The Ocean Surface Currents around the World

PERPETUAL OCEAN
4 Tonality of Map & Atlas Design

London Underground Circuit Map Radio for Harry Beck, the genius behind London's iconic subway map — by Yuri Suzuki, 2012

“Solar cells” on Switzerland Pavilion the Expo Shanghai, 2010
Tonality of Map & Atlas Design

Problems | Paradigm | Practices

Paul Middlewick, 1988
Conclusion & Perspectives
Conclusion & Perspectives

Thematic Atlas

Connotation
- Internal signified
  - Objects & Events
    - Data/Concepts
    - Spatial/Non-spatial
    - Complex/multi-level/Strategic
  - Integration I
  - Integration II
  - Integration III
  - Integration IV
  - Architecture

Representation
- Medium Signifier
  - Carrier and forms
    - Vector/Raster
    - Map/Quasi-map/Non-map
    - Geometry attribute / Attribute geometry
  - Integration I
  - Integration II
  - Integration III
  - Symbolic Modality
  - Channel Transmission

Perception
- External signified
  - Techniques & behaviors
    - Multiple scenarios/Senses
    - Multimedia/Cross-media
    - Passive/Active
  - Users & context
    - Professional/Non-professional
    - Single/Multiple classes
    - Network/Isolated
  - Integration IV
  - Effective Experience

Integrative Information Design
- Geoinformatics
- Geostorytelling

Spatial Narrative system (Stage metaphor)
- Application cases
- Test & Evaluation

Static
- Tonality
- Dynamic
Just Mapping for **WHERE**!
THANKS

Welcome your constructive feedbacks.