GI Science

or

GI Engineering + Sciences?

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Can there be a GI\text{Science}?

Yes, if the following add up to a scientific core (which is not occupied by others, such as geography):

1. The G in Information Science
   e.g., spatial data structures, spatial reasoning, geo-visualization?, economics of spatial information, legal and institutional aspects

2. The I in Geo-Sciences
   e.g., geo-statistics, spatial analysis, geo-ontology, terrain analysis, simulation of spatial processes
1. Does information science have (or need) a spatial part?

This is the what’s special about spatial question

Pro

• TFL and (very few) other laws
• Scale
• Field / Object
• Experientialism
• ...

Contra

• neo-geography: who cares
• OGC and W3C: spatial is normal
• Google: simplicity is key
2. Do **geosciences** pose common information handling challenges?

Part of this is the **research using GIS (RuGIS) aspect**

**Pro**
- many GIScience questions arise from applications
- GIScience research results need to be evaluated in applications
- it helps a GIScientist to understand a geo-domain

**Contra**
- RuGIS is and should be different from GIScience
- GIScience has to pursue its own subject
Assessing the case

1. shaky case for G in IS
2. strong, but marginalized, case for I in GS
3. does this together warrant a GIScience?
   • or does it miss an emergent property?
   • 20 years may be too early to tell
4. reducing my personal aspirations to GI engineering
   • building useful representations of space
   • but: playing important roles in other sciences (geography, computer science, cognitive sciences, ...)
   • science is not about innovation, but understanding
Challenges

1. define GI engineering research paradigm(s) in addition to hypothesis-experiment
2. find ways to contribute (respectably) to the other sciences
3. should Vespucci be called an “initiative for the advancement of the sciences through GI”?
4. technological and social: ubiquitous computing, sensors, VGI, location tracking, SOA and cloud, Google, vendor monopoly, open source, ...
Thank You!

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