VISUALIZING TIME

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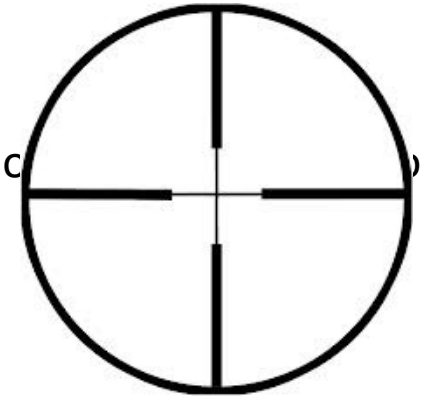
Spring 2014
Université Pierre Mendes France

SCOPE

Exploring perception, visualizatic  rrelates of human time allocation

CONTEXT

How do we experience time ?
How do we remember time ?
With what granularity do we perceive time ?

What is our (internal) representation of time ?
external) representation of time ?

What is time ?
What are the rules of time ?

How can we accurately gather t

Philosophy

The antified Self

What artifacts can be developed from personal time use data ?

How might these be used by an individual ?

Sociolo
Economics

Time Use

nformation Science
(Visualization)

How do university students use their time, and what correlates exist ?
Are there patterns that exist in the sequencing of time use ?

What models have been developed
to explain how people allocate their time?

How can we represent time in relation to its correlates ?
How can we visualize data in order to find temporal correlates ?

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DIMENSIONS OF TIME-USE

duration	timing	sequence	frequency
Quantity of time	*Time of day*	*Order of activities*	*Number of occurrences*
How much time do I spend brushing my teeth?	What time of day do I brush my teeth?	What activities do I do before and after brushing my teeth?	How many times do I brush my teeth?

LEARNING GOALS

Develop knowledge

(psychology) internal representations of time
(information science) methods for representing time

Develop skills

(data analysis) analyzing datasets with R
(information science) creating visualizations of time use data

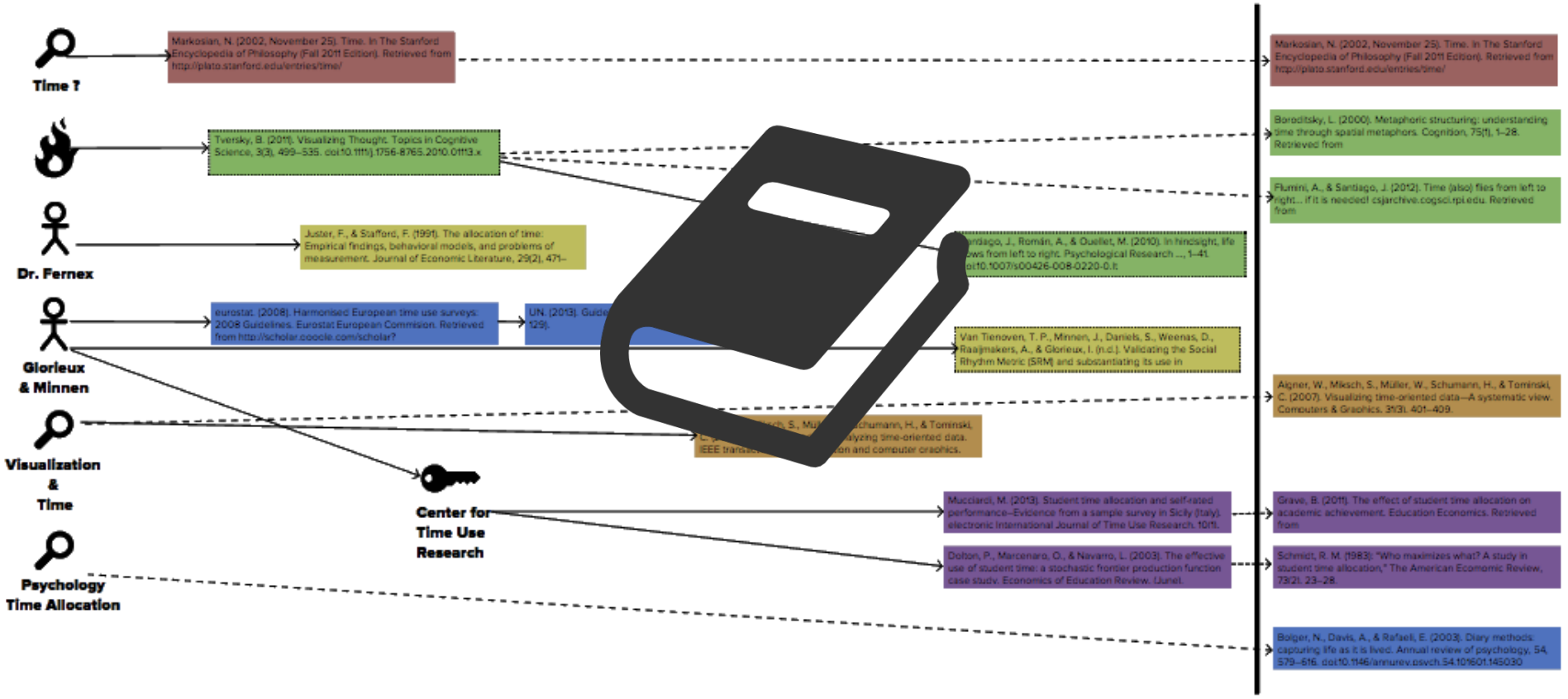
Gain experience

collaborating with research team
designing experimental studies

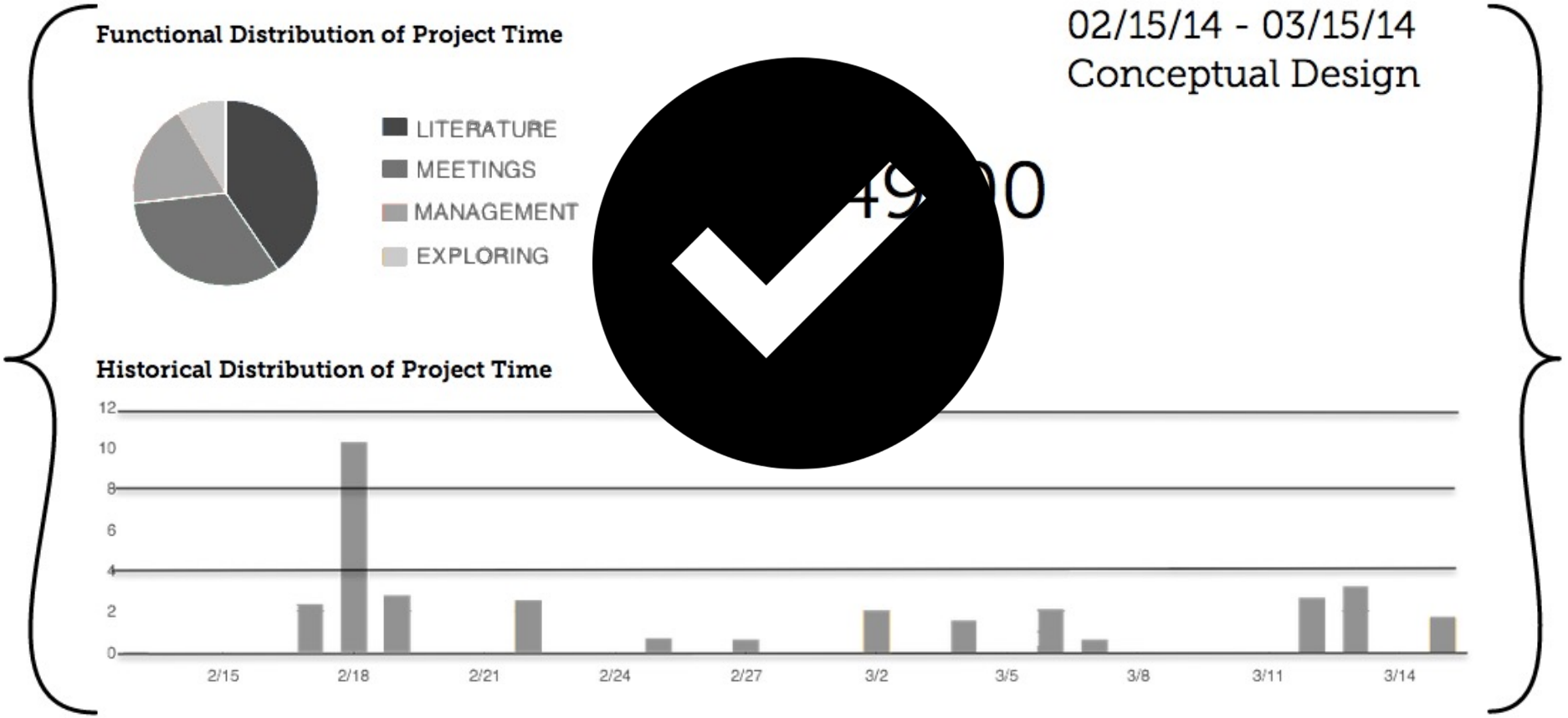
ACTIVITIES

- ❑ *Evaluate MOTUS system as data collection tool*
- ❑ *Contribute to enhancem* *ile app + UX)*
- ❑ Develop activity list for s
- ❑ Develop (my) research q
- ❑ Understand (team) rese
- ❑ Design student time allo
- ❑ Conduct pilot study in Fı
  - ❑ Presentation of time-use research to ES Master Preparation Students
  - ❑ Time Visualization exercise
  - ❑ (Manual) diary collection
  - ❑ Exploratory coding activity
  - ❑ Analyze data
- ❑ Synthesize and communicate results

LITERATURE


Time ?
Markosian, N. (2002, November 25). Time. In The Stanford Encyclopedia of Philosophy (Fall 2011 Edition). Retrieved from http://plato.stanford.edu/entries/time/
Markosian, N. (2002, November 25). Time. In The Stanford Encyclopedia of Philosophy (Fall 2011 Edition). Retrieved from http://plato.stanford.edu/entries/time/
Tversky, B. (2011). Visualizing Thought. Topics in Cognitive Science, 3(3), 499–535. doi:10.1111/j.1756-8765.2010.01113.x
Boroditsky, L. (2000). Metaphoric structuring: understanding time through spatial metaphors. Cognition, 75(1), 1–28. Retrieved from
Flumini, A., & Santiago, J. (2012). Time (also) flies from left to right... if it is needed! csjarchive.cogsci.rpi.edu. Retrieved from
Dr. Fernex
Juster, F., & Stafford, F. (1991). The allocation of time: Empirical findings, behavioral models, and problems of measurement. Journal of Economic Literature, 29(2), 471–
Glorieux & Minnen
eurostat. (2008). Harmonised European time use surveys: 2008 Guidelines. Eurostat European Commision. Retrieved from http://scholar.coocle.com/scholar?
Van Tienoven, T. P., Minnen, J., Daniels, S., Weenas, D., Raaijmakers, A., & Glorieux, I. (n.d.). Validating the Social Rhythm Metric (SRM) and substantiating its use in
Visualization & Time
Aigner, W., Miksch, S., Müller, W., Schumann, H., & Tominski, C. (2007). Visualizing time-oriented data—A systematic view. Computers & Graphics, 31(3), 401–409.
Center for Time Use Research
Mucciardi, M. (2013). Student time allocation and self-rated performance--Evidence from a sample survey in Sicily (Italy). electronic International Journal of Time Use Research, 10(1).
Grave, B. (2011). The effect of student time allocation on academic achievement. Education Economics. Retrieved from
Dolton, P., Marcenaro, O., & Navarro, L. (2003). The effective use of student time: a stochastic frontier production function case study. Economics of Education Review. (June).
Schmidt, R. M. (1983). "Who maximizes what? A study in student time allocation," The American Economic Review, 73(2), 23–28.
Psychology Time Allocation
Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: capturing life as it is lived. Annual review of psychology, 54, 579–616. doi:10.1146/annurev.psych.54.101601.145030

STATUS


Functional Distribution of Project Time
LITERATURE
MEETINGS
MANAGEMENT
EXPLORING
02/15/14 - 03/15/14
Conceptual Design
Historical Distribution of Project Time
12
10
8
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2/15
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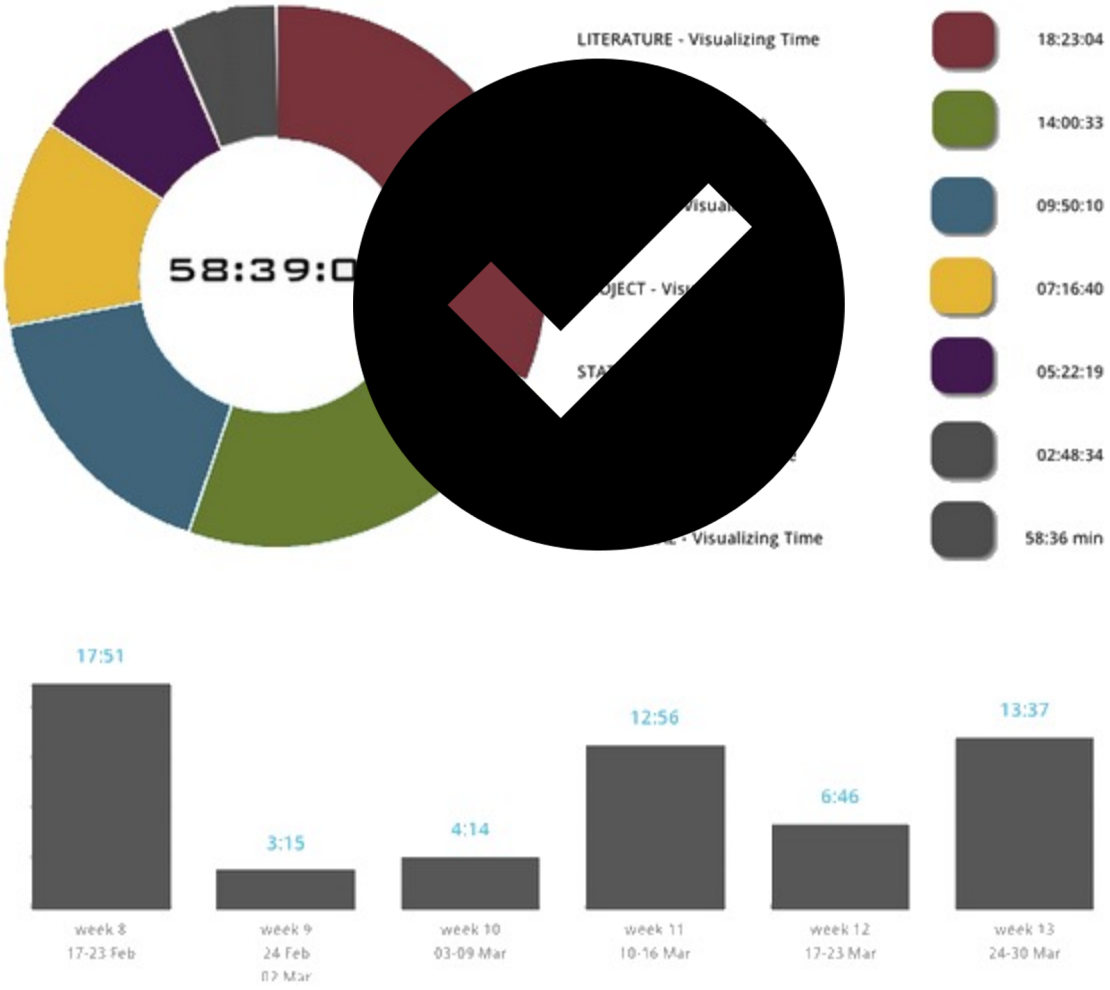
STATUS

DESIGN



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TOOLS


toggl


PODIO


murally


Lucidchart


MENDELEY


MO:TUS
MODULAR ONLINE TIME USE SURVEY