

Exploring multimodal communication of knowledge in web context

Jan Engberg & Carmen Daniela Maier

Let's start with an example...

Appendix. (See Video 4 for a discussion of the trade-offs we considered in developing the theoretical coding scheme.)



Video 4: Bill, Claudia, Kevin - Coding Scheme.

Table 6 presents a summary of the leadership theories reflected by the second decade of *LQ* articles using a combination of the coding schemes developed by Lowe and Gardner (2000) and the current study. Specifically, this table groups the theory categories developed in the current study within Lowe and Gardner's broad theoretical domains to facilitate comparison of the prominent theoretical approaches across the two decades.

William L. Gardner, Kevin B. Lowe, Todd W. Moss, Kevin T. Mahoney, Claudia C. Coglisier (2010). Scholarly leadership of the study of leadership: **A review** of *The Leadership Quarterly's* second decade, 2000–2009. In *The Leadership Quarterly*, Volume 21, Issue 6, pp. 922-958.

- Maier, C. D. & Engberg, J. 2013. **Tendencies in the Multimodal Evolution of Narrator's Types and Roles in Research Genres.** In *Narratives in Academic and Professional Genres*.
- Maier, C. D. & Engberg, J. 2014. **Tendencies of Multimodal Gradations in Academic Genres Network.** In *Encounters between Developing Communicative Norms and Knowledge*.
- Engberg, J. & Maier, C. D. 2015. **Exploring the hypermodal communication of academic knowledge beyond generic structures.** In *Discourse in and through the media*.
- Engberg, J. & Maier, C. D. 2016. **Challenges in the new multimodal environment of research genres.** In *Genre Studies around the Globe: Beyond the Three Traditions*.
- Engberg, J. & Maier, C. D. 2017. **Researchers' move from page to screen.** In *Engagement in Professional Genres*.
- Maier, C.D. & Engberg, J. 2019. **The multimodal bridge between academics and practitioners in the HBR's digital context.** In *Genres and science in the digital age: connecting traditional and new genres*.
- **Engberg, J. & Maier, C.D. (2020). Getting ready for the next steps: Multimodal knowledge communication in academic context.**
- Engberg, J. & Maier, C.D. (forthcoming). *Harvard Business Review's* reframing of digital communication: From professional expertise to practical guidance.

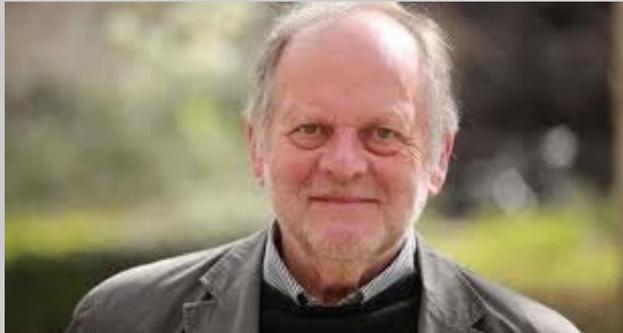
NOW: HBR academic knowledge communication related to specific topics (d. c. stage)

CORE CONCEPTS

Knowledge is made and given shape in representation, according to the potentials of modal affordances; the process of representation is identical to the shaping of knowledge.

Makers of representations are shapers of knowledge.

(Kress, 2010: 27)



CORE CONCEPTS

Multimodality =>

the full repertoire of resources that people use to communicate and represent phenomena and experiences including speech, sound, gesture, gaze, body posture and movement, writing, image and so on.

(Jewitt 2014:127)

Hypermodality =>

*is more than multimodality in just the way that hypertext is more than plain text. It is not simply that we juxtapose image, text, and sound; we design **multiple interconnections** among them, both potential and explicit.*

(Lemke, 2002:301)

COMMON INTERESTS & CHALLENGES

- The appearance of new forms of communication across media and contexts (for example, transitional, intermediate, borrowed or new genres)
- The consequences of the continuous appearance of these new forms of communication
- The emergence of new publishing formats upon the multimodal and hypermodal communication and dissemination of domain-specific knowledge in various contexts
- The challenges of employing these new formats in a credible and trustworthy manner

From RA to *Elsevier's* hypermodal potentials

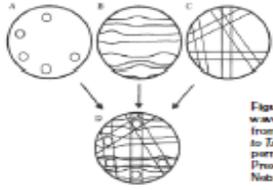


Figure 2(b) Linguistic features: particles, wave and field (Pike, 1962: 120). Reproduced from *Linguistic Concepts: An Introduction to Linguistics* by Kenneth L. Pike by permission of the University of Nebraska Press. Copyright 1962 by the University of Nebraska Press.

On the other hand, studies of visual processing (e.g. Ivry and Robertson, 1998) reveal that perception of the whole visual image takes precedence over perception of the parts, which may consist of a series of happenings within the overall work. There are factors, such as the size of the image and the ratio and density of the whole to the parts which need to be taken into consideration, but generally the whole is perceived before the parts in visual imagery. For example, the man in Figure 1 is perceived before the body parts. The Gestalt school of psychology (e.g. Wertheimer, 1938) emphasizes that perception of the whole is predicated on the basis of the relationship between the parts, rather than the individual identities of each component. The visual image is thus processed through visual scanning of the parts that bear a relationship to each other within the context of the whole work.

The basic opposition is the part/whole sequential relations of progressive dependences of language, which form global patterns of particulate (ideational), prosodic (interpersonal) and wave-like (textual) structures versus the immediate whole/part relationships of the visual image. It appears that somewhat different SF models and approaches for language and visual imagery are required, and a meta-approach for conceptualizing the meaning arising from the integrated use of the two semiotic resources is needed. The transdisciplinary dialogue across linguistics and visualization studies afforded by SF-MDA promises to be productive with regards to developing our understanding of the two semiotic resources and the ways in which they interact to create meaning. SF approaches to language and visual imagery are discussed in sections 2(a) and 2(b).

2(a) SF model for language

The SF framework for language (Halliday, 2004; Martin, 1992; Martin and Rose, 2003) is shown in Table 1. The language plane contains the content stratum which consists of discourse semantics (paragraph and text) and the lexigrammar (word group, clause, clause and clause complex), and the expression stratum (phonology and typography/graphology for spoken and written language). SFL is concerned with the description and use of

448 Visual Communication 7(4)

From RA to *Elsevier's* hypermodal potentials

Navigation pane

- table of contents
- clickable section headers
- thumbnails of images and tables

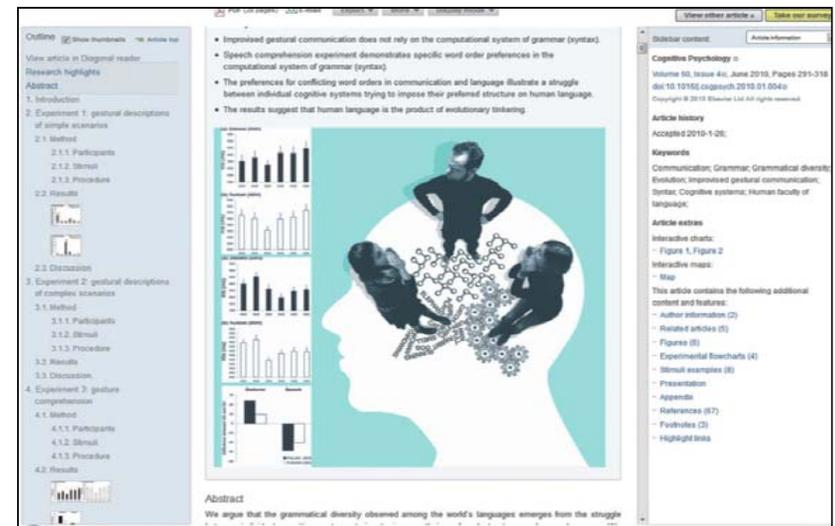
Middle pane

- the original article
- interactive graphs, tables, plates, films & Google maps

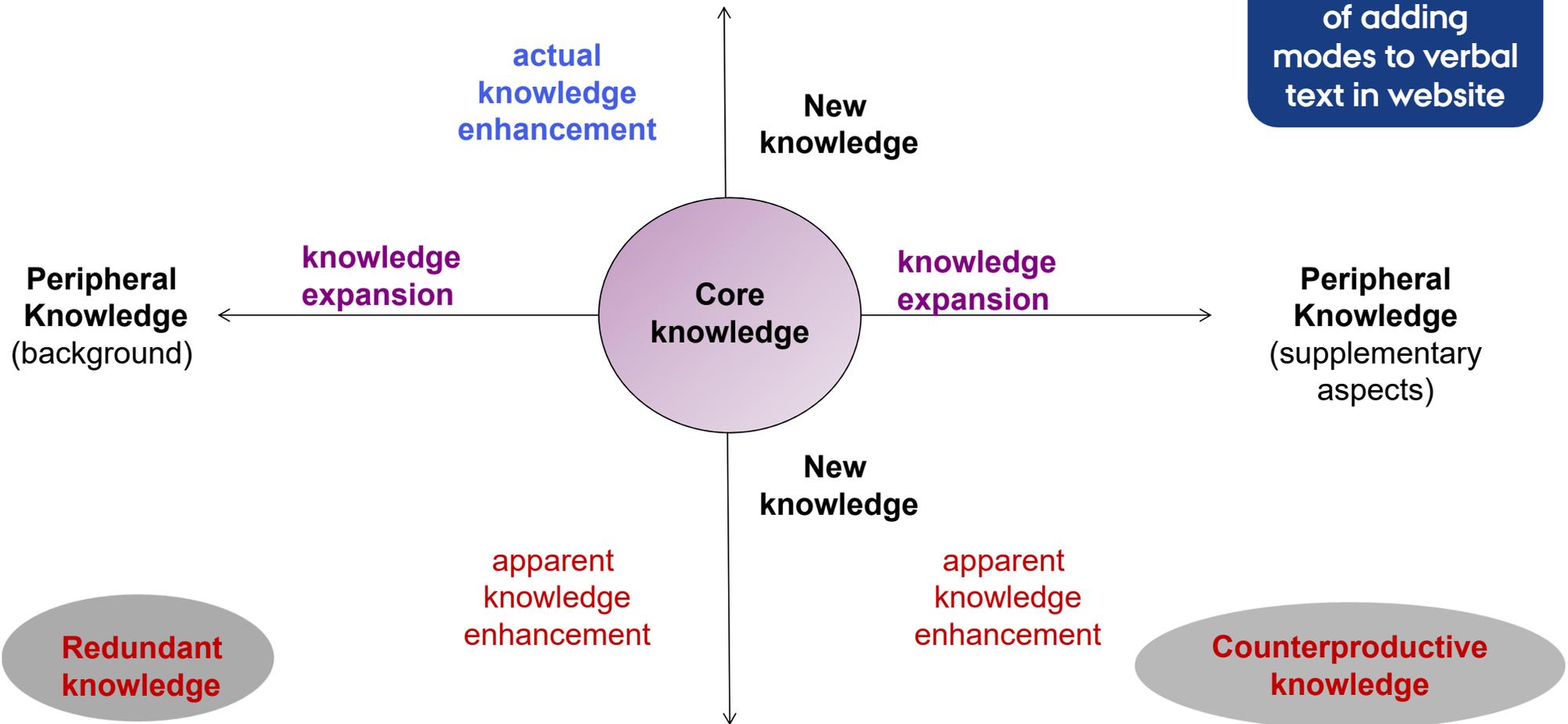
Right pane

- additional information and features that can be accessed from the other two panes

3 pane layout:



Knowledge types & building processes



Core knowledge enhancement

Sidebar content: Stimuli examples (8)

[Browse individual items](#)

Experiment 1

gestural descriptions of simple scenarios

- Sample stimuli 1
- Sample stimuli 2

Experiment 2

gestural descriptions of complex scenarios

- Sample stimuli 1
- Sample stimuli 2

Experiment 3

gesture comprehension

- Sample stimuli 1
- Sample stimuli 2

Experiment 4

speech comprehension

- Sample stimuli 1
- Sample stimuli 2

[Browse individual items](#)

Before interaction

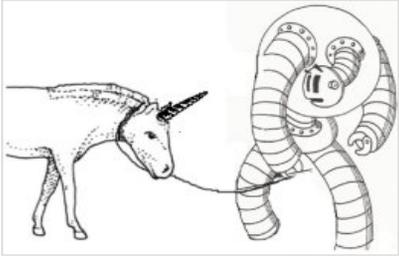
After interaction

Sidebar content: Stimuli examples (8)

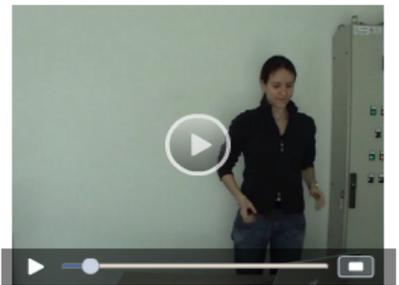
[previous](#) 1 of 8 (view all) [next](#)

Experiment 1 (sample stimuli 1)

gestural descriptions of simple scenarios



Videotaped participant's response



This video does not contain audio

- Experiment 1 (example 2)
- Open all 32 vignettes
- View flowchart

Core knowledge enhancement

- interactive charts
- experimental flow charts
- hyperlinks to supplementary Excel tables, databases, audio files

Supplementary table S2:

Protein identifications from Mascot search of custom-built helminth parasite protein database with MS/MS spectra from bound (biotinylated) fraction.

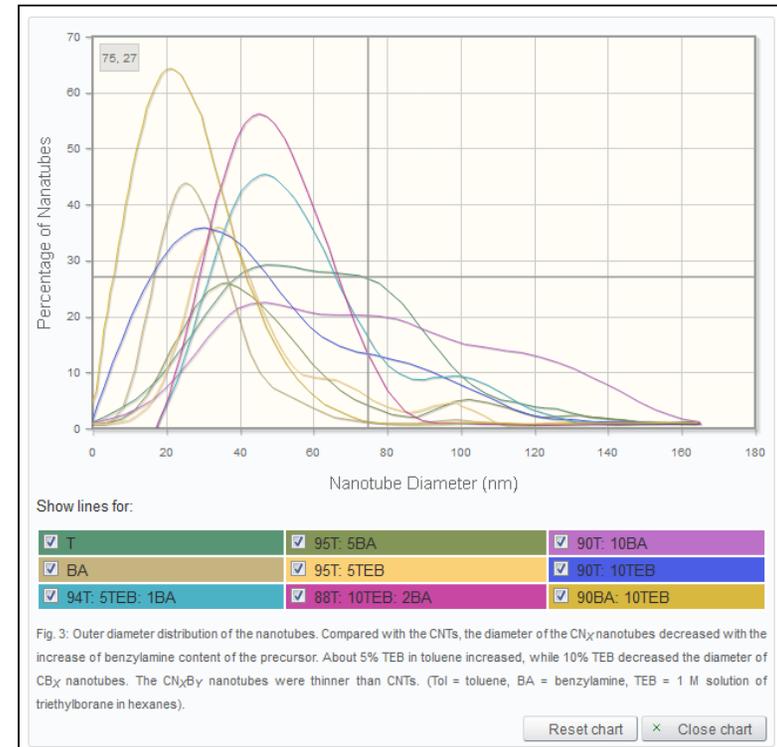
[View in article](#)

[Download Excel file](#)

previous

2 of 5 (view all)

next

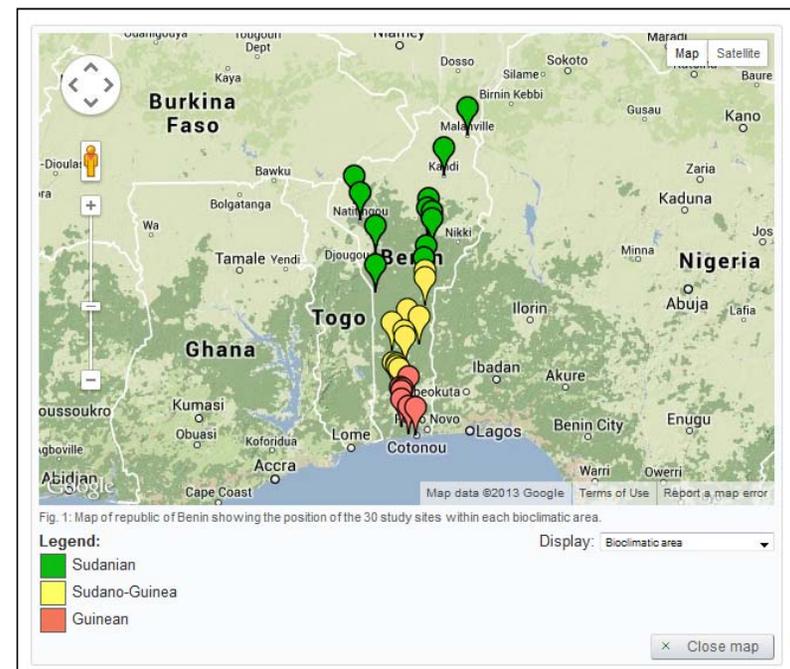


Knowledge expansion - peripheral knowledge

Before interaction

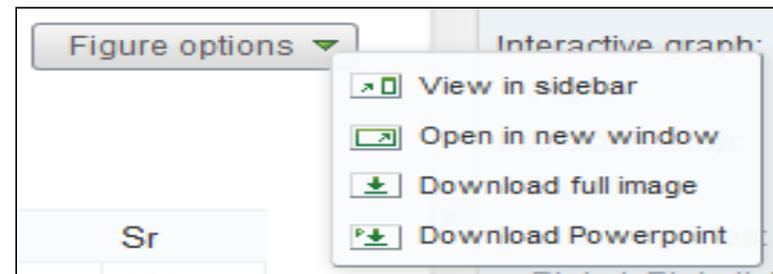


After interaction



Redundant knowledge enhancement

The same information is **repeated**
when displayed
in different formats =>
full image, PPT, pdf file or other window



Examples of (peripheral and/or) counterproductive knowledge (in *Harvard Business Review*)

In the middle of the research article *The Neuroscience of trust: Companies are twisting themselves into knots to empower and challenge their employees* (Zak, 2017).

My group then spent the next 10 years running additional experiments to identify the promoters and inhibitors of oxytocin. This research told us why trust varies across individuals and situations. For example, high stress is a potent oxytocin inhibitor. (Most people intuitively know this: When they are stressed out, they do not interact with others effectively.) We also discovered that oxytocin increases a person's empathy, a useful trait for social creatures trying to work together. We were starting to develop insights that could be used to design high-trust cultures, but to confirm them, we had to get out of the lab.

Give the gift of
SUCCESS to a
friend or colleague!



So we obtained permission to run experiments at numerous field sites where we measured oxytocin and stress hormones and then assessed employees' productivity and ability to innovate. This research even took me to the rain forest of Papua New Guinea, where I measured oxytocin in indigenous people

CORPORATE WEB CHALLENGES

<https://todayslocalmedia.com/ugly-website-designs-examples/>

Welcome To: Gates N Fences
L.A. Ornamental Corp
3708 N.W. 92nd Street
Miami, Florida 33147
Phone: 305-696-0419
LAOrnamental@aol.com

Designed to Enhance the Entry of your home with Custom Ornamental Decorative Driveway Gates while bringing Safety, Security and convenience.

Home
Driveway Gates
Modern Driveway Gate
Custom Driveway Gate
Privacy Driveway Gate
Garden Gates
Modern Garden Gates
Privacy Garden Gates
Fencing
Fencing 2
Railings
Modern Balcony Railings
Openers - Operators
Ramset
FAAC
Apollo
BFT
Power Master
Allstar Gate Opener
Liftmaster
Elite
Doorking
OSCO

Top Brands of Gate Openers and Operators, Commercial, Residential, Industrial, Swing, Slide, Rack & Pinion, Barrier

- BFT Gate Openers
- PowerMaster Gate Openers
- Eagle Gate Operators
- Elite Gate Openers
- Ramset Gate Operators
- Doorking Gate Openers
- Viking Gate Operators
- OSCO Linear Gate Openers
- Liftmaster Gate Openers
- Allstar Gate Operators
- SEA Gate Openers
- FAAC Gate Operators
- Apollo Gate Openers
- Hysecurity Barriers / Risers Swing Slides

All of our Aluminum or Wrought Iron Gates, or Fences are designed and manufactured to withstand a range of outdoor conditions. Our commitment to our customers and dedication to produce quality gates has earned us thousands of satisfied customers.

Although we offer a wide selection of Ornamental Designs or Decorative Designs, we can design and manufacture any style in aluminum or wrought iron metals. L. A. Ornamental & Rack Corp also offers Fences, Garden or Walk Thru Gates to match your driveway gates. With over thirty five years of experience in manufacturing and designing elegant, custom, or exotic Aluminum Driveway Gates and Fences, our past and future customers can have peace of mind that they are receiving quality workmanship. We are a Fence Company that gives our customers 110% of dedication to manufacture quality driveway gates and fences. For a quote please send an e-mail to LAOrnamental@aol.com

If your looking For Privacy with your Driveway Gates ,Garden Gates, or Walk Thru Gates, we offer a Solid Backing with your choice of Aluminium, Steel, Plexiglas or Plastic. All solid backing are offered in many different colors to choose from. [Privacy Gates](#)

We offer a large selection of Gate Openers and Gate Operators for Residential Driveway Gates, Light or Heavy Commercial Gates, or industrial locations. If your not sure the style or size of the Gate opener / gate operator you need, please e-mail or contact us so we can gladly help guide you to the correct choice. We offer all type of Gate Openers / Gate Operator, Sliding Gate Openers / Gate Operator, Swing Gate Openers / Gate Operator, Hydraulic Gate Openers / Gate Operator. We also have a wide selection of replacement [Main Circuit Boards](#) for all brands, and [Remote Controls](#) for Visors or Keychains.

Railings - L. A. Ornamental Rack Corp offers top quality Balcony Railings, Front Porch Railings, Deck Railings in Metal, Aluminum, or Wrought Iron Steel. We offer rails for residential or commercial locations for either Interior or Exterior locations. We also offer Custom Made Railings, Decorative Railings, or HandRails that are powder coated paint for low maintenance and long last Balcony Rails, Porch Rails, or Deck Rails

Garden Gates or Walk Gates can be designed to match any existing or ordered driveway gate. Customers can choose between wrought iron or aluminum as material and choose from our wide selection of powder coated colors. Garden or Walk Gates are custom made that can give your home that special and elegant look.

Pool Fences - the Aluminum Pool Fence Styles, Aluminum Pool Gate Styles, or the Aluminum Pool Deck Railing Styles that is perfect for your project. We offer decorative pool fences, standard safety fences, or any custom made pool gates for your property that are the essential requirements of commercial crowded areas, or residential properties.

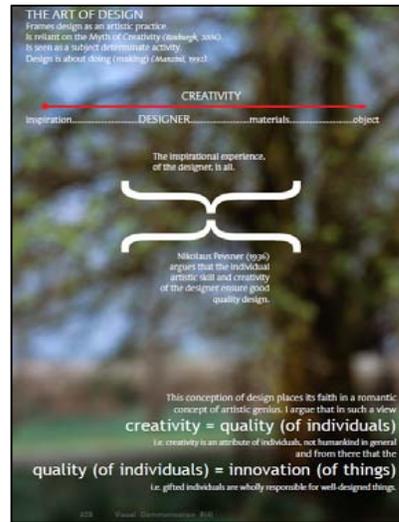
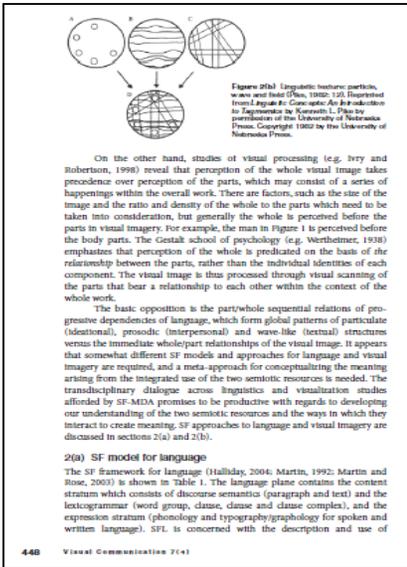
We offer a large selection of Wrought Iron and Aluminum Driveway Gates , but also browse through our wide selection of Gate Operators, either Sliding or Swing Gate Openers / Operators.

YOUR CHALLENGES?

Especially: Examples of knowledge enhancement (actual, redundant or counter-productive) and knowledge expansion (background or supplementary) from your experience

ZOOMING IN ON VIDEOS' CHALLENGES

FROM ACADEMIC RESEARCH ARTICLES TO ACADEMIC VISUAL & VIDEO ESSAYS:



The multi-flow approach

Multimodal transcription and analysis of data

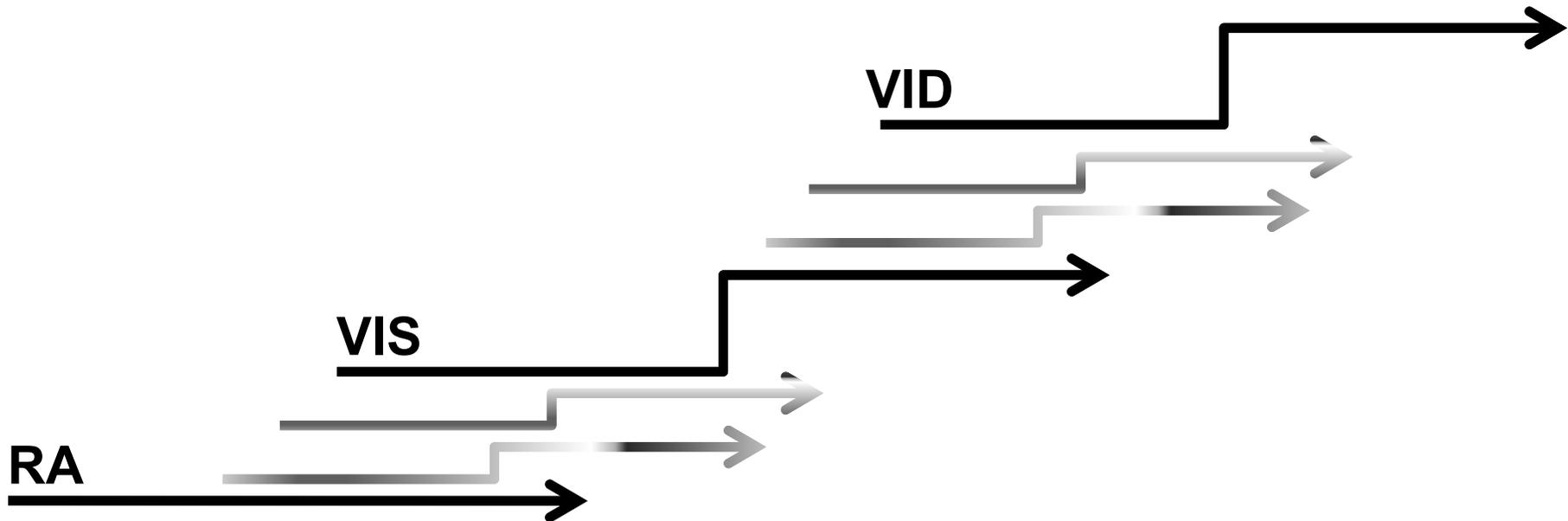
Change types				
The multi-flow layout	Text flow (text sequentiality; the text and its supporting typography)			
	Page flow (spatial contiguity; text and images combination within single “page” layouts: text-flow, diagrams, graphs)			
	Image flow (temporal sequentiality; graphical elements are set out one after the other: films)			
Web mediation	Reading mode (sequential reading as the guiding principle)			
	Navigation mode (active construction of personal reading path)			
Knowledge building processes	Multimodal interaction (knowledge building inside the text)	Concurrence		
		Complementarity		
		Connection		
	Interactivity (knowledge building through reader’s navigation options)	Knowledge expansion	Core knowledge	
			Peripheral knowledge	
		Knowledge enhancement (actual & apparent)	New knowledge (domain specific & non-domain specific knowledge)	
Redundant knowledge Counterproductive knowledge				

Multimodal transcription and analysis of data

Change types				
The multi-flow layout	Text flow (text sequentiality; the text and its supporting typography)			
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	Navigation mode (active construction of personal reading path)			
Knowledge building processes	Multimodal interaction (knowledge building inside the text)	Concurrence		
		Complementarity		
		Connection		
	Interactivity (knowledge building through reader’s navigation options)	Knowledge expansion	Core knowledge	
			Peripheral knowledge	
		Knowledge enhancement (actual & apparent)	New knowledge (domain specific & non-domain specific knowledge)	
Redundant knowledge Counterproductive knowledge				

FROM RA TO VIS AND VID

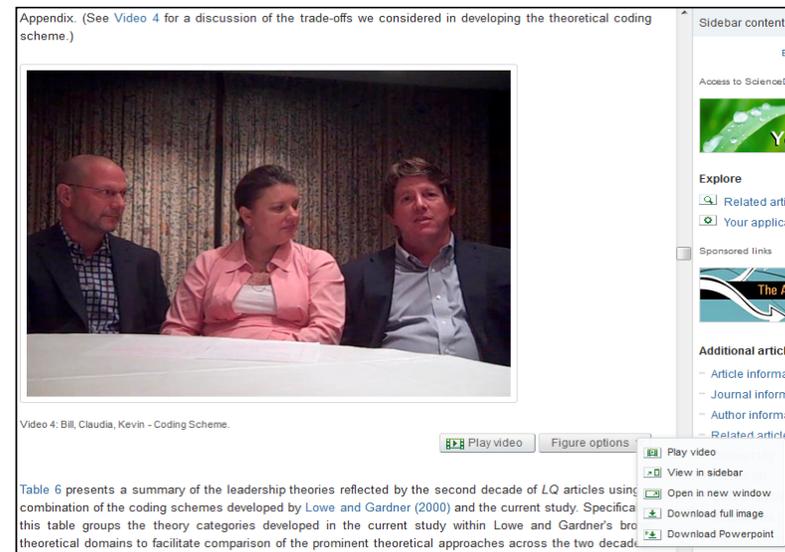
Appearance of overlapping transitional and intermediate generic forms



Example of counterproductive knowledge

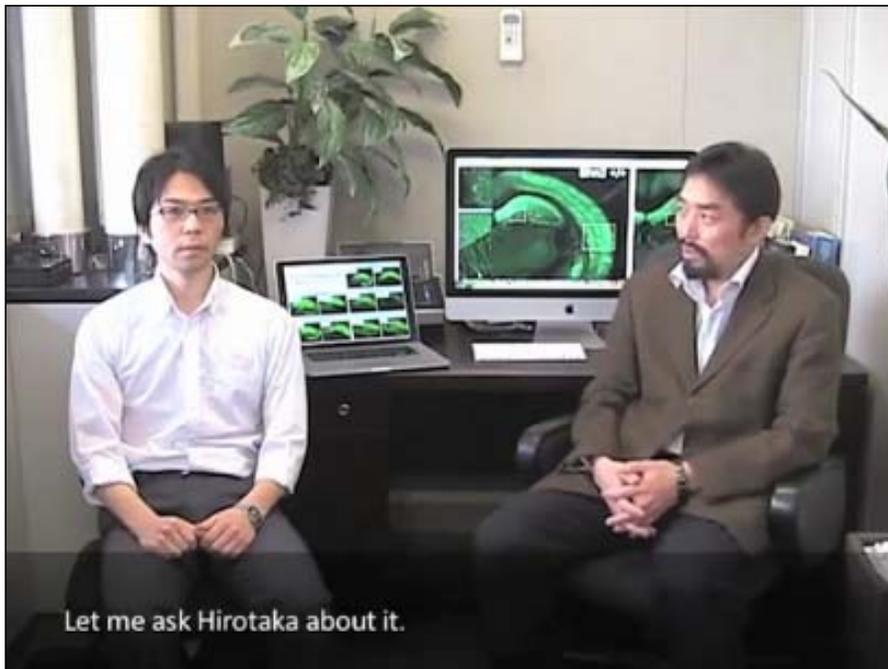
Staged

Knowledge communication
in videos made by
inexperienced and untrained
researchers ("talking heads")



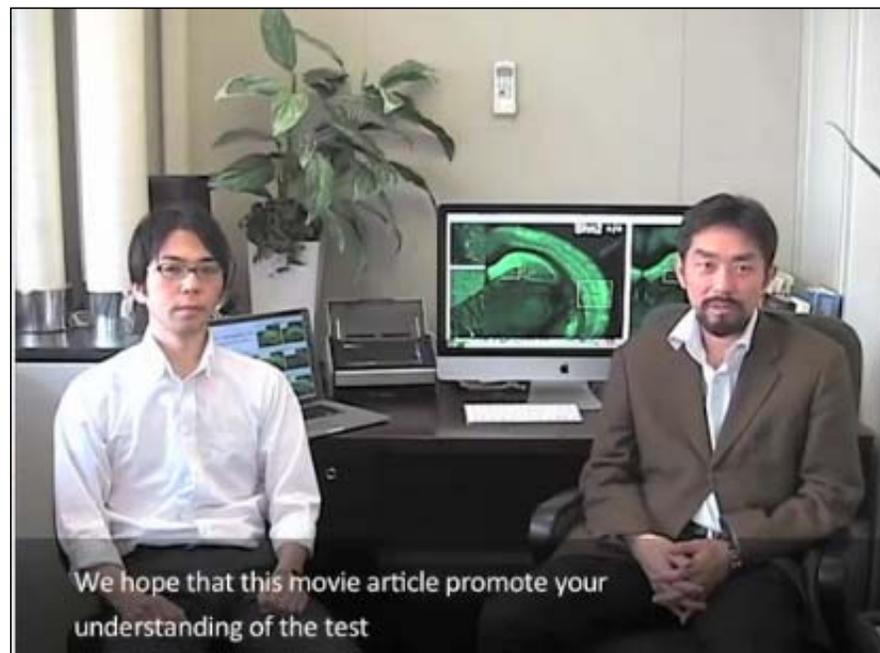
William L. Gardner, Kevin B. Lowe, Todd W. Moss, Kevin T. Mahoney, Claudia C. Coglisier (2010). Scholarly leadership of the study of leadership: **A review** of *The Leadership Quarterly's* second decade, 2000–2009. In *The Leadership Quarterly*, Volume 21, Issue 6, pp. 922-958.

Example of counterproductive knowledge (in *JOVE*)



Staged

Example of counterproductive knowledge (in *JOVE*)



Staged

CORPORATE VIDEOS' CHALLENGES



<https://www.youtube.com/watch?v=3OcBEdFb8pl>

https://www.youtube.com/watch?time_continue=84&v=iXuPhO0WSQ&feature=emb_logo

https://www.youtube.com/watch?time_continue=8&v=aL-DvnKcqVU&feature=emb_logo

YOUR CHALLENGES?

Especially:

- Do you use video?
- Have you encountered any of the problems?
- How do you test the effect of your video material?

THE WAY OUT OR THE WAY TOWARDS...?

A photograph of a piece of lined paper with the word "Questions?" written in a large, cursive, black marker. A black marker is visible in the bottom right corner, with its tip pointing towards the end of the word. A long, thin, curved line is drawn below the word, starting from the left and ending near the marker tip. The paper has vertical blue lines.